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*EIGHTY-NINTH YEAR.*

SAMUEL SQUIRE SPRIGGE, M.A., M.D. CANTAB.

*EDITOR.*

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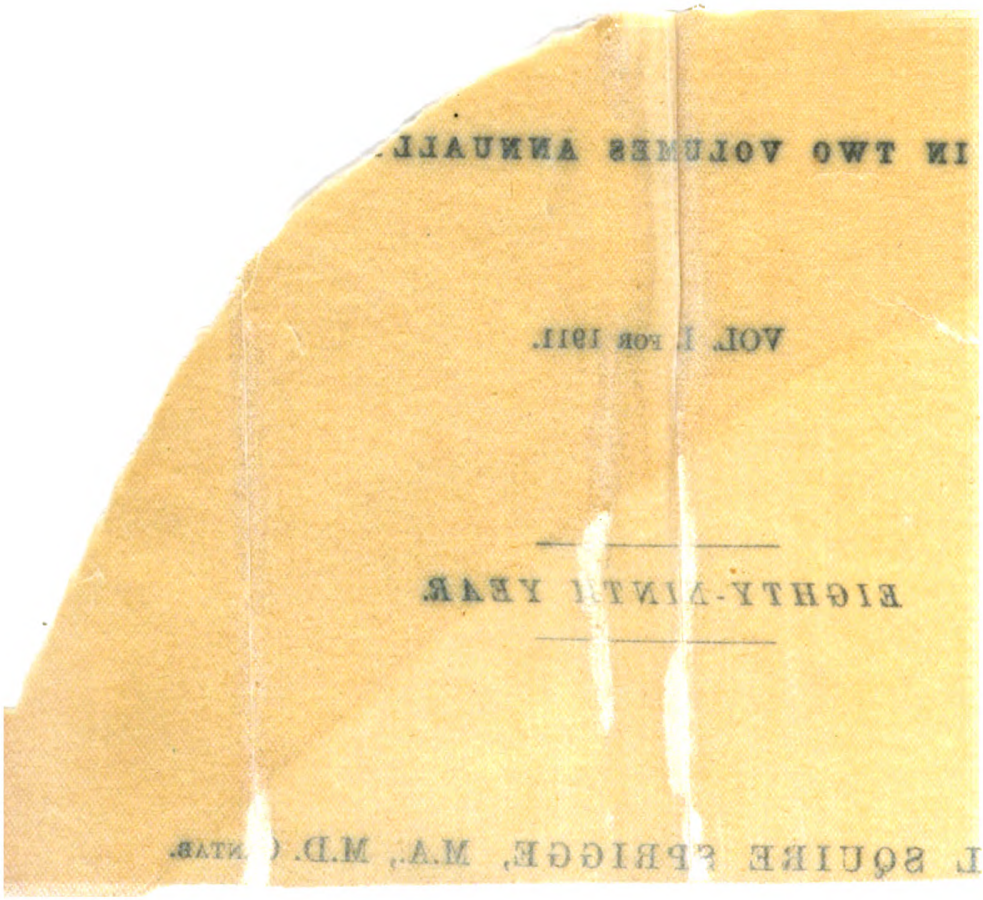

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# Speech
ON
# THE REPORT BY THE EDUCATION COMMITTEE PRESENTED TO THE GENERAL MEDICAL COUNCIL.

*Delivered before the General Medical Council on Saturday, Nov. 26th, 1910,*

BY SIR HENRY MORRIS, BART., M.A., M.B. LOND., F.R.C.S. ENG.

MR. PRESIDENT AND GENTLEMEN,—As the Resolution, which was remitted to the Education Committee on Nov. 26th, 1909, and to which the Report now presented to the Council is the answer, was moved by me, I desire without delay to make some remarks upon the Report so far as it refers to the subjects mentioned in that Resolution. The terms of the Resolution were the following:—

"That it be referred to the Education Committee to consider further the place in the student's career which the preliminary sciences should occupy; and that the committee be requested to frame and submit to the Council a pattern scheme of medical education whereby the required minimum of the several subjects to be included in the curriculum can be adequately studied and the requisite examinations thereon passed within the period prescribed by the curriculum."

In the first place, I wish to express my personal thanks to the committee for the time and trouble it has devoted to the consideration of the questions submitted to it, but at the same time I am compelled to say that in my opinion the Report[1] is distinctly disappointing. In effect, it confirms the *status quo ante*, and if approved and adopted by the Council the result will be to postpone any reformation of the present unsatisfactory state of the curriculum for a period of 10, 15, or maybe 20 years.

I. First, as regards the "pattern curriculum" asked for in the second portion of the Resolution of Nov. 26th, 1909. The reply of the committee is that it could not do as it was asked, and the only reason given for its inability to do so is the very remarkable one that only exceptional candidates could accomplish within the allotted time the study of the full number and amount of the subjects contained within the present curriculum. It was with the object that the committee should consider and report to the Council how this very condition of over-congestion of the curriculum might be obviated that the Resolution of Nov. 26th, 1909, was referred to it. There were two ways in which the congested curriculum could be relieved—namely, (1) either by lightening the curriculum, or (2) by extending the period. The Report does not deal with either alternative. It leaves things exactly as they were. It has made no attempt whatever to adapt the quantity of the contents to the containing space, and the only reason given for its not doing so is that the contents are greater than the space can contain. All that portion of the Report which deals with the statistics showing the length of the curriculum as actually pursued by students under the several licensing bodies, and with the comparison of the curricula of the several licensing authorities, is only indirectly, if at all, relevant to the question referred to the committee. The committee was not asked to draw up a pattern curriculum which would prove acceptable to the majority of the licensing bodies and which would remove the diversity of detail among the curricula. It was not asked even to draw up a pattern curriculum merely as such. What it was asked to do was to draw up a pattern curriculum whereby the required minimum of the subjects included could be adequately and successfully studied within the prescribed period by the average student. The members of the Council knew how improbable it is that any pattern scheme would be accepted by all the licensing bodies, or that diversity of detail among the curricula could be prevented. Diversity of detail in a possible curriculum would be no bad thing. What was the mischief was, that the present curriculum was impossible to the average student. That was the darkness into which the Council asked the committee to throw the light. But the result of the Report is that the students and their parents are left uninformed by the Council of the fact that a nominal five years' curriculum must in reality be one of six and a half or seven years; and the parent who launches his son as a medical student and expects to see him through on the expenditure of from £800 to £1000 has, by bitter experience, to realise that it is only after an additional year and a half or two years of time, and an additional £200 or £400 in cash, that the qualification which he and his son have in view can be attained.

II. Next, as regards "the place in the student's career which the preliminary sciences should occupy." This is the question contained in the first part of the Resolution of Nov. 26th, 1909. The reference was not as to the place in the curriculum, but as to the period of the student's career which the preliminary sciences should occupy—as to whether they should be studied within the period of the curriculum, or previously. The answer of the committee might have been simple and direct, to the effect that the precise period should remain, as in fact it is now, optional, but that if previous to registering, but after passing an examination in general education, the curriculum should be correspondingly shortened by 6 or 12 months. Or its reply might have been that the period should be before the commencement of the curriculum, and that the curriculum, unburdened of the preliminary sciences, should remain at five years. But it was neither the one nor the other. The reply of the committee implies an untruth—of course, quite unintentionally, but still an untruth—that the preliminary sciences must be studied in the five years and in medical schools or in scientific institutions. The wish was father to the thought, and the thought to the implication. The reasons given for this reply are two: (1) that to transfer the subjects from the curriculum and make them part of the course of school education would be to remove them from any effective control on the part of the medical authorities; and (2) that the indiscriminate delegation of these subjects to the school curriculum is a matter which is not ripe for the consideration of the Council. The answer to the first is, that if the preliminary science subjects were made part of the school course, the examination in them would be under the same kind and extent of influence as the subjects and standard of the examination in general education. The answer to the second was given by Huxley in 1889, as well as by the Association of Medical Teachers, and by the writers of an important document 20 years ago. Huxley's[2] statement was, "The student ought to have acquired, as part of his general education, such knowledge of physics, chemistry, and elementary biology as is now demanded of him." In that way Huxley thought the whole curriculum would be given, as he remarked it ought to be, *to special medical subjects.*

The answer given by the Medical Teachers' Association so long back even as 1869 may be seen in a very full "*Report of the Committee on Professional Education*" *of the General Medical Council*, which I fear is but little, if at all, known to the present members of the Council, although several resolutions in the same sense have at different times since that Report was issued been under consideration of the Council. The teachers said[3]: "Every possible latitude of choice, consistent with the supposition of *bonâ-fide* study, ought to be allowed as to modes and places of education; ..... and we are of opinion that no student ought to be forced to learn in any specific establishment anything which he can reasonably be supposed able to learn elsewhere. Thus, if a student prefers to learn botany or chemistry elsewhere than in a medical school he ought, in our opinion, to be free to do so." Elsewhere[4] they express the opinion that chemistry, physics, and botany should be on the same footing as English, Latin, and arithmetic, and that the student should not be called upon to produce evidence of having learnt these subjects in certain particular establishments. Sir James Paget, in his reply to the circular letter issued by the same committee, said: "I think it greatly to be desired that every possible inducement should be offered to students to acquire such

[1] See THE LANCET, Dec. 3rd, 1910, p. 1626.

[2] See Minutes of Evidence: "University of London Commission," 1889, Q. 1079, pp. 99-100.

[3] Appendix II., Part I., p. 6, of the "Report of the Committee on Professional Education," 1869, and signed on behalf of the Council of the Medical Teachers' Association by John Simon, President.

[4] Appendix II., Part II., p. 19

knowledge as they need of chemistry, botany, or other natural sciences *in their preliminary education*. The necessity of learning these in medical schools is a very serious hindrance to the more important and practical parts of medical and surgical study."[5] Other eminent teachers might be quoted to the same purpose.

The "document" I refer to above was presented in 1890, and contains the following words underscored with a black line: "*The Sciences as they are now taught for the purposes of the First Examination, whether in Medical Schools or elsewhere, are the proper elements of the preliminary scientific training which should precede the more special and advanced studies, not only of Medicine, but of other scientific professions, and are even gradually becoming recognised as an essential part of a liberal education.*"

Now these subjects, as long as they are retained in the curriculum, either ought to be exclusively studied in a medical school and taught by teachers in touch with the whole course of medical education, or their study elsewhere than at a medical school under specified conditions ought to be recognised. The question may be set aside of their being taught by men in general touch with the medical curriculum as a whole, because whether taught in a medical school or not they are taught by teachers who regard the study of these subjects as the first steps in a science education, and who very little consider their special bearing on other parts of the medical curriculum, whereas the study of organic chemistry in its bearing on physiology and pathology is provided for within the limits of the professional curriculum. But if the study of these subjects is not to be of necessity within a medical school, then on what code of justice is the study of them in a highly equipped secondary school to be excluded? Why are schools like Winchester, Epsom, Dulwich, Bedford, St. Paul's, University College School Frognal Hampstead, to be excluded, whilst polytechnic institutions, and municipal technical schools, and several others mentioned on p. 13 of the Students' Regulations of the General Medical Council are recognised?

Have any of the above-mentioned schools been inspected by the chairman of the Education Committee? Have any one of them been visited, I would like to ask, by one of the self-satisfied gentlemen who signed the "memorial" protesting against the relegation of the teaching of the preliminary science subjects to the school period, which was presented to the General Medical Council in May last—a memorial which was identical in sentiment and phraseology with memorials on the same subject and having the same unfounded objection to the teaching of the preliminary science subjects in secondary schools which were presented to this Council in 1901 and 1902?

The Report of the Education Committee includes two statistical tables (see pages 8 and 9) showing the number of students, with the proportion of successes and rejections, who presented themselves during the years 1908 and 1909 at the first professional examination of the Conjoint Board: (1) from secondary schools; and (2) from medical and science schools. The Report then goes on to say that these tables show that only a very few boys, and those apparently of exceptional ability, were prepared to undertake the first professional examination upon a school study. This was an incorrect and a misleading assumption for three reasons. In the first place, amongst the boys who pass the preliminary scientific (first professional examination) of the University of London as external students are a considerable number from secondary schools, many of who come for examination only in the advanced subjects to the Conjoint Board, and thus are not returned in the tables as entrants from secondary schools, though it had been from secondary schools that they presented themselves for examination at the University of London. In the second place, at least half of the Conjoint Board candidates are graduates or undergraduates of one or other of the Universities, and are therefore exempt from examination in the preliminary sciences at the Conjoint Board. In the third place, there are many who had done a part of their preliminary science studies at secondary schools and the rest in a medical school and are tabulated as having come from the latter. But in so far as the number of candidates from secondary schools, with highly equipped modern sides (as highly equipped as most medical schools, with excellent laboratories and highly qualified teachers) were fewer than might be expected, one cause was the misleading and inaccurate, "so-called," regulations, especially No. 12 on p. 14 of the Council's publication concerning "Registration of Medical Students." These regulations the Report leaves without reference, untouched and uncorrected.

Regulation 10 states that "every medical student shall be registered in the manner hereinafter prescribed by the General Medical Council." Though the word "shall" is used the General Medical Council has no power to enforce registration.

Regulation 11 says that "no medical student shall be registered until ..... he has produced evidence that he has commenced medical study at a University or School of Medicine, or at a Science Institution recognised by one of the Licensing Bodies and approved of the Council."

The Council has no more power to insist on its approval, as a condition of recognition of places of study of the preliminary sciences, than it has to insist upon student registration.

Regulation 12 asserts that "the commencement of the course of professional study" (which includes the preliminary sciences) "recognised by any of the licensing bodies shall not be reckoned as dating earlier than 15 days before the date of registration," whereas there is nothing to prevent the whole period of study of the preliminary sciences being taken and the examination in these subjects being passed before the date of registration or before entrance at a medical school and without having been to a so-called "scientific institution." These regulations are not only misleading and inaccurate—they are directly contrary to the facts. By them the Council is made to appear as usurping a power which belongs to the licensing bodies alone; and sometimes the Council is put into a very ridiculous position thereby.

Take an actual case: A boy, educated at Epsom College, passed first the London Matriculation and then the Preliminary Scientific (M.B.) examination in chemistry, physics, and zoology. After this he was registered, and entered a London hospital. At the end of four years he wanted to enter for the final examination of the Conjoint Board, but was refused on the ground that his year's work at Epsom counted as only half a year towards the five years' curriculum. He next tried to enter for the final examination of a licensing body which follows strictly the regulations of the General Medical Council—namely, the Apothecaries' Company, and was refused because he could not be signed up for a five years' course at a recognised medical school. As a last resource he applied to the University of London, and was admitted without demur. Having passed the examination and obtained his degree he inquired of the Registrar of the Council whether he could now register as a practitioner, although he had been registered as a student for four years only. Did Mr. Allen then refer him to these regulations of the Medical Council and say to him "No! You have not complied with our conditions of registration"? Why, of course not; on the contrary, Mr. Allen had to register the young gentleman and to admit that the Medical Council has not the power to refuse to register a person who had duly passed his final examination.[6]

As long as these regulations remain as instructions of the Medical Council injustice will be done (*a*) to the students, (*b*) to the parents, and (*c*) to those secondary schools which have spent thousands of pounds in building and equipping science laboratories.

(*a*) There is injustice to the students, because the tendency of the regulations is to take boys away from school discipline and control before it is really necessary to do so, and to bring them to a medical school where they are not under the guidance of masters and are beyond the "general education" atmosphere of school life. On this point I will quote from a letter written by the high master of St. Paul's School.[7] He says: "The intention of the Council was doubtless right. It meant to prevent the premature specialisation in medical work. But the effect has been precisely the opposite of that intended. Instead of inducing the student to prolong his 'general education,' it tempts him (by the unfounded fear of losing a year) to go to a medical school at the earliest possible moment."

(*b*) There is injustice to the parents, who are misled by the form of the statements issued by the General Medical

[5] Report of the Committee on Professional Education, 1869, p. 187.

[6] See a letter from Dr. Burton, THE LANCET, Oct. 8th, 1910, p. 1103.

[7] See letter from Dr. Hillard, THE LANCET, Oct. 8th, 1910, p. 1103.

Council into the idea that preliminary science study at school does not count towards the medical curriculum at all, and that the Council can enforce a full period of five years between registration as a student and registration as a practitioner. I know of one parent who sacrificed a valuable scholarship which his boy had obtained at his school in order to place him at a medical school earlier than he otherwise would have done, being unaware of the Council's inability to insist upon the observance of its own regulations.

(*c*) There is injustice done to the secondary schools which have a highly developed "modern side"[s] because the boys are induced to leave to go to a medical school at a time when it would be beneficial to them to remain a year longer at school, and when by doing so they would bring credit and distinction to their school. Moreover, other secondary schools would be stimulated to develop their "modern side" if these misleading and misguided obstacles were removed from their way by the Council.

For these several reasons I beg to move the following Resolution; and as the subject is one of immense importance to general practitioners and to other parents and guardians, who intend giving their sons and wards a medical education, I have asked Dr. Langley Browne, the senior of the Direct Representatives for England and Wales, to second it:—

That as the Education Committee in their report of Nov. 22nd, 1910, express views in favour of retaining the preliminary sciences (chemistry, physics, and biology) as subjects of the medical curriculum, it be referred to the committee to consider and report to the Council as to the best way of amending the regulations of the General Medical Council in regard to the registration of medical students with the objects (1) of making those regulations consistent with the report and with the powers of the Council; 2) of making clear the distinction between regulations which must be observed and recommendations made for the students' guidance; and (3) of the advisability of altering or deleting Regulation 12 on page 14 of the regulations printed under date June 1st, 1910.

# A Clinical Lecture

ON

# ULTRA-CHRONIC PULMONARY TUBERCULOSIS.

*Delivered at the Hospital for Consumption and Diseases of the Chest, Brompton, on Dec. 14th, 1910,*

BY H. BATTY SHAW, M.D. LOND., F.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON; PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

GENTLEMEN,—This subject has been chosen for two reasons. The first is, that though it is known that pulmonary tuberculosis may be a chronic disease, so far as general impressions indicate, it is not common knowledge that it may exist for so many years as to justify the term "ultra-chronic"; no doubt many members of the profession can give examples drawn from the records of their patients which may possibly equal, and even exceed, those brought forward in this lecture. Little effort, however, has been made to publish details in a series of cases of the longevity of patients who are afflicted with tuberculosis of the lungs. The reason for this is not far to seek, for until a few years ago the term used to describe pulmonary tuberculosis was "consumption" or "phthisis." This term was primarily a purely clinical one, and indicated that there was disease of the lungs which led to wasting of the body. With the discovery of the tubercle bacillus by Koch in 1882, a new and more pathological significance was given to the wasting produced by disease of the lungs. For some time an effort was made to put the new wine into old bottles, and the attempt produced considerable confusion, which unhappily still exists. Practitioners are to be found to-day who, in obedience to the older teaching, will tell the friends of a patient who is suffering from pleurisy or some other suggestively tuberculous affection of the lungs, that possibly the disease will some day turn into "consumption"—i.e., the patient may begin to "waste" and be ultimately carried off by the malady. We know much more now of the early manifestations of pulmonary tuberculosis, and recognise how the so-called primary pleurisy may be but the early stage of pulmonary tuberculosis. Our text-books, however, still teach the duration of "consumption," and a medical student believes that, as a rule, pulmonary tuberculosis and "consumption" are identical, and that the average duration of the latter—something between two and four years—also expresses the duration of the former. This is a mistake, but cannot be remedied until figures are forthcoming which at least will point to a much greater duration. Facts which are drawn from the out-patient letters of this hospital will show how great a need there is for a revision of the subject of the prognosis in pulmonary tuberculosis.

The second reason is, that owing to the admirable arrangements by which the records of the out-patients who have attended or who are attending this hospital are preserved and rendered accessible, it is possible to trace the condition of the lungs of patients who attending during my eight years of office have also years ago been under the care of some of my senior colleagues in the same department.

Owing to the now well-recognised fact that so much can be done by residence in a special hospital, and more still in a sanatorium for pulmonary tuberculosis, to instruct sufferers from this malady in the hygienic rules which are necessary for their own and their fellows' welfare, as many out-patients as possible who are not too advanced in disease are admitted for the special instruction and treatment. It is a common experience, however, to find that patients suffering from early pulmonary tuberculosis are prevented by circumstances or caprice from availing themselves of these advantages. They elect to remain as out-patients whilst their letters allow them to do so, and then are lost sight of for years or altogether. They may present themselves again, but unfortunately in so advanced a stage that they may no longer be recommended for admission. But some may be found to come back for treatment who have not advanced in their disease, and having ascertained this fact again disappear, maybe for years, to reappear with the same evidence of quiescence of the disease existing in their lungs. It is to this last group that attention is called in the present lecture.

The consideration of these cases will be found profitable in that it will show how extremely chronic this malady is in a certain proportion of cases, and it will also be of economic advantage, as it may lead to a less hasty decision to offer to all cases of pulmonary tuberculosis the costly advantage of special treatment. So long as these patients are instructed in methods by which they may avoid infecting their fellows they are quite able to discharge their duties in life, and apparently with little risk of advancing their disease by such action.

At the outset, it would seem advisable to come to some agreement upon what may be called ordinary clinical pulmonary tuberculosis; this will vary according to the experience of each physician and his point of view. Merely to set a reasonable limitation to the lecture, only those cases will be considered who have suffered from pulmonary tuberculosis for five, or more than five, years, the maximum limit reached by one of the list of patients being 39 years, and from this list it will be possible for each of you to set your own limits as to what may be called ultra-chronic pulmonary tuberculosis.

Another question arises as to what criteria should be adopted as proof of pulmonary tuberculosis. In the first place, it is desirable that actual tuberculosis should be established: following modern developments, only those cases will be referred to in which the expectoration has been found to contain tubercle bacilli. This organism was discovered by Robert Koch 28 years ago, but many of these cases have revealed what has later proved to be pulmonary tuberculosis, years before such tests as examination for tubercle bacilli in the sputum were applied to them. The earliest case in the list to be tested in this way is one originally under the care of Dr. Percy Kidd, who fixed the nature of the patient's malady by finding the organism in the expectoration in 1892. During the last four or five years each one of the patients whose reports are now submitted for examination has been proved to be tuberculous in this way. In some cases the only objective sign of pulmonary mischief

[s] I use the term "modern side" merely to indicate schools where practical teaching and laboratory work are carried on. I am aware of the fact that in some of these schools a certain amount of classical work is done by the boys in their forms even though their chief work is the study of sciences.

was the presence of these organisms in the sputum. The result is that out of a total of 9428 patients who presented themselves to me for treatment up to Dec. 10th of this year, 1532 have been found to expectorate tubercle bacilli. It is, of course, possible that more than this number are tuberculous. Rightly or wrongly, use has been made only of the cases of those patients who recently or years ago presented themselves for symptoms or signs maybe merely suggestive of tuberculosis, and who during the last four or five years, when sputum examination has been made a routine practice, have been found to yield expectoration charged with tubercle bacilli. No doubt the objection will be raised that it is not right to argue that such cases were tuberculous from the beginning; possibly they suffered from non-tuberculous bronchitis to begin with and tuberculosis was superadded at a later date, maybe as a result of sitting for hours in the waiting-room amongst patients who were tuberculous. Rightly or wrongly again, this objection has been put aside and a patient who years ago may have suffered from "pleurisy," "hæmoptysis," "pneumonia," "inflammation" or "congestion of the lungs" of some weeks' standing, or even of "fistula in ano," or may have had "chronic cough" or "bronchitis" and subsequently has been found to bring up sputum containing tubercle bacilli is considered to have had tuberculosis for at least as many years as such symptoms have existed. Further, patients who presented "signs" of pulmonary disease years ago, such as apical râles, basal dulness, and weak breath sounds (unilateral in most part), and who in the last four or five years have been shown to be tuberculous by bacteriological examination of the sputum, are also considered to have suffered from tuberculosis from the date at which such signs were discovered. To those who sympathise with such views this lecture may appear acceptable; to those who do not the considerations brought forward will appear fallacious. Experience shows, however, that despite the fact that a considerable number of physicians still hold that the above symptoms and signs may be non-tuberculous in their inception, more probably they were tuberculous; parents who have suffered for years from a simple "winter" cough or from bronchitis and emphysema will be shown to present family histories which indicate what havoc has been made of their children, who have died from tuberculosis of the lungs, meninges, &c., even when they have been suckled at the breast or have been fed on cow's milk which has always been boiled before use. In view of these facts, it is wiser, not only from the point of view of the immediate companions of such people but from the point of view of the public, to consider that the above signs or symptoms are indicative of present tuberculosis. It is believed that human beings may have tuberculous lesions which are shut off from the rest of the system; they carry the organism, but apparently beyond having a localised focus of disease they are not sufferers so far as symptoms are concerned; they constitute a form of "carriers of tubercle bacilli"; their expectoration, if they have any, may contain tubercle bacilli. It may also be advanced as possible that healthy people have tubercle bacilli deposited in some part of the respiratory tract, but without producing any lesion, constituting a more true form of "tubercle carrier." Such cases have been reported as occurring amongst physicians who work in institutions where many tuberculous patients congregate. The fear that such a possibility may weaken the interest aroused by a consideration of the duration of life of some of the patients presently to be considered may be set aside, to a very great extent, for in those cases actual cough, with the discharge of sputum, has been a feature of each case; not only have tubercle bacilli been found in the sputum of these cases, but signs are present which justify the belief that they are suffering from genuine tuberculosis of the lungs, and that it is not a question merely of accidental occurrence of tubercle bacilli in the sputum of people who are non-tuberculous. It may be said that no patient upon whom a necropsy has been performed in this hospital during the last 18 months, and in whose sputum tubercle bacilli had during life been demonstrated, has been found to be free from tuberculosis of the lungs.

### ANALYSIS OF CASES.

Of the 1532 patients who have been discovered at the last visit to the hospital to show tubercle bacilli in the sputum, and to have present signs indicative of pulmonary disease 303 are found to have had the disease for five or more than five years. But in this number it must be admitted that there are included some whose tuberculosis for some years existed, so far as can be ascertained, only in some part of the body other than the lungs—e.g., they may have first of all suffered from tuberculous dactylitis, adenitis, or tuberculous hip disease. This lecture is based upon facts which form part of a project to show the duration of pulmonary tuberculosis under the influence of out-patient treatment only. The number of 303 cases includes some who have had the benefit of in-patient and sanatorium treatment. Excluding these latter and also those whose tuberculosis expressed itself first in some system other than the pulmonary one, 212 cases are left, and from this number of patients observations are presented which will show how chronic may be the course of pulmonary tuberculosis subjected to the very trifling help, so far as the direct treatment is concerned, afforded in out-patient practice. These patients have succeeded in many cases in maintaining families, and, as their occupations will show, under conditions which are the very reverse of those which would be chosen to help arrest the disease.

Opinions will differ as to which cases may be called ultra-chronic cases, but the figures of Table I. will allow of individual opinion being exercised.

TABLE I.—*Analysis of 212 Cases of Pulmonary Tuberculosis of a Duration of Five Years and Over, showing the Number of Cases for each Year up to 39 Years.*

| Duration in years. | Number of cases. | Duration in years. | Number of cases. | Duration in years. | Number of cases. | Duration in years. | Number of cases. | Duration in years. | Number of cases. | Duration in years. | Number of cases |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 25 | 10 | 18 | 15 | 11 | 20 | 9 | 25 | 5 | 30 | 2 |
| 6 | 23 | 11 | 12 | 16 | 5 | 21 | 2 | 26 | 1 | 31 | 1 |
| 7 | 22 | 12 | 7 | 17 | 5 | 22 | 2 | 27 | 2 | 34½ | 1 |
| 8 | 14 | 13 | 9 | 18 | 7 | 23 | 2 | 28 | 2 | 39 | 1 |
| 9 | 13 | 14 | 7 | 19 | 2 | 24 | 1 | 29 | 1 | | |

Obviously no claim may be made in this lecture to originality as regards the established fact that pulmonary tuberculosis may be a very chronic malady, but the generality of us are obliged to be content with the observation that such chronicity is indicated by the term of two to four years or thereabouts which has been found by past workers to express the average duration of chronic cases of consumption. Table I., however, shows that something like one-seventh of all cases of pulmonary tuberculosis, using a more preferable term and one which is not at all synonymous with "consumption" or "phthisis," may live for more than five years, even as many as 39, without any more effective remedies than those used in the out-patient department of this hospital, each of which is but symptomatic in design. It is necessary to call attention to the fact that only in some cases do the figures expressing the duration of life indicate the period elapsing between the onset of the symptoms and death. In a large number of the cases life has lasted longer than the last time each patient appeared for relief at this hospital. In some cases this last appearance was eight years ago, and in others during this present month, but in all cases life had lasted at least as long as the years indicated in the column headed "duration of life." There is a considerable falling off of the figures indicating a survival of more than 15 years, and probably no one would object to call all those cases which have survived this limit examples of ultra-chronic pulmonary tuberculosis; there are 53 of these cases representing about one-thirtieth of the total number of 1532 cases. Locked up in this comparatively small number are all the secrets which underlie the cure of pulmonary tuberculosis, for it may reasonably be said that processes which can secure to the individual such a long survival of infection of the lungs by the tubercle bacillus are exactly the ones which medicine should endeavour to secure as therapeutic agents.

On looking through Table II. some interesting points will be observed. The patient who survived his first illness, which is now held to be a suggestion of pulmonary tuberculosis, viz., "pleurisy," was able to present himself this year at the hospital—i.e., about 34½ years from the date of the pleurisy; his occupation is that of a "packer." Another patient, who is a bookkeeper, survived "pleurisy" 30 years; and another patient, who was a needlewoman, survived the same malady for the same number of years. A salesman, whose first

TABLE II.—*Fifty-three Cases of Pulmonary Tuberculosis (Tubercle Bacilli having been found in the Expectoration) Surviving during Fifteen Years and more, as Determined by the History Provided by the Patient.*

| Evidence of pulmonary tuberculosis at the beginning of the period cited in the third column. | Register number and occupation. | | Duration in years of pulmonary tuberculosis when last seen. | Number of lobes involved when last examined. |
|---|---|---|---|---|
| Cough ... ... ... | 11,917 | Clerk. | 15 | 5 |
| | 7,585 | Photo-etcher. | 15 | 5 |
| | 2,580 | Coal-porter. | 28 | 5 |
| Pneumonia ... ... | 11,354 | Porter. | 15 | 2 |
| | 11,348 | Labourer in creosote work. | 17 | 4 |
| | 10,144 | Storekeeper. | 20 | 2 |
| | 9,823 | Lamplighter. | 20 | 3 |
| | 8,632 | Housewife. | 24 | 2 |
| Congestion of lungs | 7,981 | Billiard-table maker. | 20 | 3 |
| Inflammation of lungs ... ... ... | 7,607 | Cab-maker. | 20 | 2 |
| | 4,993 | Clerk. | 31 | 4 |
| Pleurisy ... ... ... | 9,396 | Storekeeper. | 15 | 4 |
| | 8,807 | Cigarette coverer. | 15 | 4 |
| | 4,913 | Housewife. | 15 | 3 |
| | 4,869 | ,, | 15 | 4 |
| | 4,545 | Compositor. | 15 | 2 |
| | 1,449 | Book-folder. | 15 | 4 |
| | 9,735 | Shop assistant. | 16 | 2 |
| | 6,623 | Housewife. | 16 | 4 |
| | 6,130 | Painter. | 16 | 4 |
| | 9,848 | Warehouseman. | 17 | 2 |
| | 12,621 | Labourer. | 17 | 3 |
| | 10,326 | Housewife. | 18 | 5 |
| | 9,347 | ,, | 18 | 4 |
| | 2,282 | ,, | 18 | 5 |
| | 10,081 | Hawker. | 18 | 4 |
| | 8,488 | Shop assistant. | 19 | 4 |
| | 5,514 | Machinist. | 20 | 3 |
| | 4,708 | Housewife. | 20 | 5 |
| | 340 | Photographer. | 20 | 4 |
| | 12,043 | Flesher in tanyard. | 21 | 4 |
| | 5,637 | 'Bus conductor. | 22 | 4 |
| | 8,603 | Housekeeper. | 23 | 5 |
| | 12,293 | Housewife. | 25 | 4 |
| | 12,259 | Labourer. | 26 | 5 |
| | 9,454 | Reporter. | 27 | 5 |
| | 11,457 | Hawker. | 27 | 5 |
| | 5,604 | Cellarman. | 28 | 4 |
| | 4,104 | Housewife. | 30 | 1 |
| | 8,433 | Bookkeeper. | 30 | 5 |
| | 11,523 | Packer. | 34½ | 5 |
| Hæmoptysis ... ... | 9,634 | Painter. | 16 | 4 |
| | 4,611 | Telegraphist. | 19 | 4 |
| | 11,866 | Servant. | 20 | ? 1 |
| | 4,348 | Coal-weigher. | 22 | 5 |
| | 579 | Housewife. | 25 | 5 |
| | 9,778 | Needlewoman. | 25 | 4 |
| | 272 | Housewife. | 39 | 3 |
| Laryngitis and "first stage of consumption" ... | 8,574 | ,, | 17 | 4 |
| ? Lung trouble ... | 11,748 | ,, | 18 | 4 |
| | 10,981 | Buyer. | 25 | 3 |
| Death of a daughter, aged 21 years, from tuberculosis; wife found to be healthy ... ... ... | 1,631 | Instrument-maker. | 21 | 3 |
| Fistula in ano... ... | 10,566 | Salesman. | 15 | 4 |

departure from health was the development of a "fistula in ano," survived pulmonary tuberculosis for 15 years, and probably had this latter complaint at the time of development of the fistula. Quite the most remarkable of the whole list is the case of No. 272, a housewife. Her first visit was made to the hospital in the year 1891, at the age of 40 years, and she came under the care of Dr. Percy Kidd. She gave the history that during the previous 20 years she had had cough and also during the same period hæmoptysis. Expiration was prolonged at both apices, and there were dulness and crepitations over the middle lobe of the right lung. Tubercle bacilli were detected in the sputum in 1892. Similar signs were found by Dr. S H. Habershon in 1896, and they were more advanced in 1898. In 1903 the same signs were made out, but in addition there were friction sounds heard at the left base; tubercle bacilli were again present in the expectoration. The patient, now 61 years of age, was invited to come to this lecture for the purposes of demonstration, but wrote to say that she was unable to come as she was confined to her room with a severe cold; "until quite recently her health had been fairly satisfactory." Judging by the history she had had symptoms of pulmonary tuberculosis for at least 39 years, signs of the disease had been present 19 years, and tubercle bacilli were found in the expectoration 18 and 7 years ago.

The occupation of these patients shows that indoor employment does not necessarily preclude survival with the disease during a considerable number of years, because all but 8 of the 53 patients followed vocations within doors.

From the economic point of view this table is of value, for it shows that there need be less hesitation in allowing patients who have undergone special treatment in sanatoriums or hospitals to return to the work they have followed prior to admission, although such work entails spending their time indoors. It is possible, and indeed probable, that these patients effected considerable harm amongst those with whom they lived during so many years of unrecognised disease. One marked example was met with in No. 1631. This man had had a family of 13 children, of whom only three survived; five children had died from definite tuberculosis, including a daughter aged 21 years, who died from pulmonary tuberculosis. It is impossible to ascertain what the remaining five children died from, but quite probably tuberculosis was a factor. The presumption is that this man had infected the various members of his family who had succumbed to tuberculosis, as his wife was free from symptoms and signs of the disease.

To those of our profession who hesitate to accept that these 53 patients had suffered from pulmonary tuberculosis from the time in which they stated they first had pulmonary symptoms, the list will appear unsatisfactory. In order to satisfy them a table (No. III.) is now submitted of five patients who have survived pulmonary tuberculosis for 15 and more years, as shown by the signs figured on their out-patient papers by my predecessors who in former years had charge of them. During the last four or five years these patients have been shown to be tuberculous by the discovery of tubercle bacilli in the expectoration.

TABLE III.—*A List of Five Cases of Ultra-chronic Pulmonary Tuberculosis who have Survived 15 or more Years after the Discovery of Clinical Signs of the Disease, the Evidence of Tuberculous Signs being Documentary.*

| Register number. | Occupation. | Year in which first signs were detected and observer. | Year in which corroborative signs were last noted and extent. | Duration in years of physical signs. |
|---|---|---|---|---|
| 501 | Housewife. | Râles at both apices (Dr. Percy Kidd), 1888. | 1903; three lobes involved. | 15 |
| 8931 | ,, | "Scattered sibili" (Dr. Percy Kidd), 1891. | 1907; four lobes involved. | 16 |
| 2648 | Electric car conductor. | Left pleural effusion (Dr. Percy Kidd), 1890. | 1908; two lobes involved. | 18 |
| 4167 | Talloress. | "Hæmoptysis" and doubtful signs (Sir J. Kingston Fowler), 1881. | 1905; one lobe involved. | 24 |
| 10591 | Ironmonger. | Dulness left base (Sir J. Kingston Fowler), 1885. | 1910; four lobes involved. | 25 |

This small series of five cases, with the possible exception of No. 4167, shows that tuberculosis of the lungs may reveal signs at the beginning and end of periods of 15 to 25 years. Each patient had pursued an indoor occupation, except No. 2648, who had probably been advised to take up the work of a 'bus conductor in order to get open air.

This lecture must be concluded with an expression of the hope that others will be found who will supply evidence of as great or greater chronicity in patients suffering from pulmonary tuberculosis. The more such evidence is accumulated the better it will be for the subject of the treatment of the malady, for it will give support to those who, whilst giving fullest credence to the benefits to be derived from sanatorium treatment, feel that after hygienic rules have been learnt, the patient may in suitable cases carry out the cure of the disease in his or her ordinary surroundings and whilst carrying out the duty of a wage-earner.

# SOME OF THE MORE RARE CAUSES OF THE ACUTE ABDOMEN.[1]

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AT intervals we meet with cases presenting acute abdominal symptoms, which resemble rather closely some of those manifested by the more common examples of perforation of the hollow viscera, so that a diagnosis of one of these accidents may be wrongly arrived at. When the abdomen is opened, however, the lesion expected is not found, and we have to search for changes which may indicate that a more unusual and perhaps unsuspected disease is present.

*Acute Hæmorrhagic Pancreatitis.*

In this disease, which is most difficult to diagnose, the symptoms are referred to the upper abdomen, and, as they are very urgent and accompanied with much pain, early operation is generally permitted if suggested to the patient. Yet on opening the peritoneal cavity there may be nothing abnormal presented at first sight, whilst the blood-stained fluid usually present, being small in quantity, may be overlooked as a sign of disease. And in the early stage of this illness not only may the effusion of blood be of small quantity and possibly unnoticed, but there may be no fat necrosis, the only sign which can absolutely be relied on at the time. A good illustrative case was the following.

A widow, aged 57, was sent to me at St. Thomas's Hospital by Dr. G. Brebner Scott, of Brixton, for an acute abdominal illness on Feb. 23rd, 1909. At 6 P.M. on the previous day she had complained of great pain in the abdomen. She said that it began on the right side and spread rapidly to the left, and also extended upwards to the right lower ribs. Vomiting came on at once, and she could keep nothing down subsequently. Her bowels had acted naturally the previous morning. There was no history of biliary colic or of injury, and she had been quite well until this illness. She was a well-nourished woman, who still complained (at 6 P.M. on Feb. 23rd) of abdominal pain. This was now general, all over the abdomen. She looked ill, had a pulse of 110, and a temperature of 101° F. The abdomen was distended, generally hard to the touch, and very tender, but not specially so in the iliac fossa. On percussion there was patchy dulness, both in front and on the lateral aspects of the abdomen, but not in the flanks. No abnormal swelling could be felt, but the wall of the abdomen was fat. Her tongue was dry; the bowels were not acting. Operation was decided upon, and an incision made on the right side through the rectus muscle. When the peritoneum was opened a good deal of blood-stained fluid escaped. There was no lymph on the peritoneum, but the omentum appeared somewhat thick and infiltrated, whilst in two or three places there was fat necrosis. The pancreas appeared harder than usual and enlarged. The gall-bladder was normal; no stone could be felt either in it or in the biliary passages. The small intestine on the right side was distended. The peritoneum was washed out with normal saline solution and the incision was closed. The abdomen was closed because the amount of fluid did not appear to increase during the operation, and the peritoneum was quite clean. She was relieved by the operation, but on the following evening her temperature rose again to 100° and pulse to 136, so the incision was reopened, more fluid evacuated, and a drainage-tube put in. The following day Cammidge's test (*c*) was reported as positive. The patient was very ill for some days, and at one time appeared very flushed, weak, and despondent. Drainage was continued until March 10th, about a fortnight, after which she gradually improved. It is not necessary here to give any further details of the case. She left hospital on April 20th, and has since had good health, having quite recovered.

This case is encouraging inasmuch as it was a successful one; unfortunately, successes are not numerous in the practice of any one surgeon, however large his experience. There have been five cases under my care within recent years, all of which were submitted to operation, but this is the only one in which a full success can be claimed. But even when operation does not save life, it relieves of the agonising pain which is so very distressing in most. The history of alcoholism was not obtained in all. As a rule, the movements of the body were more free than they are after acute perforations of intestinal ulcers. In one case the patient (a female lunatic) was found to be lying on her side, and that position is not assumed in many acute abdominal conditions.

Fitz wrote of acute pancreatitis a few lines to which I may draw attention: "Acute pancreatitis is to be suspected when a previously healthy person or a sufferer from occasional indigestion is suddenly seized with violent pain in the epigastrium followed by vomiting and collapse, and in the course of 24 hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight rise of temperature." I should say that the patient is commonly an adult of more than 40 years of age, well nourished, and even fat, apparently in good health until seized with a sudden attack of severe abdominal pain. Dr. C. R. Box has pointed out to me that the majority are females, and that this corresponds to some extent with the greater frequency of gall-stones in women.

On examination I have found that the abdomen has been more resistant generally than it should have been, but not rigid. There has been a diffused superficial tenderness, especially on unexpected light palpation; the general resonance over the abdomen has been rather patchy in character without evidence of free fluid, whilst the movements during respiration have been good. In all the pulse has been rapid, there has been anxiety, and not infrequently a flushed face, whilst there has been a rise of temperature. As Dr. A. Elliot reminds us in his interesting paper on this subject[2] (to which I am indebted), the cause of the rapidly fatal ending in acute hæmorrhagic pancreatitis is not always easy to determine. It has been put down to hæmorrhage, but many cases cannot be so explained, for in a considerable number the amount of extravasated blood has been comparatively small. Nor is it probable that the sudden disturbance of the whole or part of the pancreas is a sufficient explanation. Some have ascribed the fatal result to shock.

The other acute abdominal conditions which most clearly resemble it clinically are: (1) perforations of the stomach or duodenum; (2) perforations of the appendix; (3) acute intestinal obstruction; (4) acute cholecystitis with perforation of the gall-bladder; (5) acute irritant poisoning; and (6) very rare conditions, such as embolism of the mesenteric artery, rupture of a liver abscess or hydatid, &c. Of these it is most commonly put down to *perforation of the stomach*, but in the *anterior* perforation, although we have the sudden onset of intense pain, there is rigidity of the rectus muscles in the epigastric region, loss of liver dulness, with the rapid effusion of free fluid down the right side of the abdomen. When a *posterior* perforation of the stomach has occurred the symptoms are mostly referred to the lesser sac, so that they may be more difficult to differentiate. In gastric perforations the vomiting may, but does not usually, continue, and may indeed be absent, whilst there is a history of gastric symptoms pointing to chronic disease of the stomach or duodenum.

In *acute appendicitis*, although the pain is referred to the umbilicus at the beginning of the attack, within a short time there is tenderness in the iliac fossa and the pain moves to that part. The muscles become rigid over the iliac fossa,

[1] Abstract of a paper read before the Derby Medical Society on Nov. 8th, 1910.

[2] Transactions of the West London Medico-Chirurgical Society, October, 1910.

and localised dulness on percussion may be demonstrated, whilst if the appendix is placed unusually high on the right side, although the resemblance to acute hæmorrhagic pancreatitis is more close, there is still the differentiating rigidity and localised dulness.

In *acute intestinal obstruction* high up, possibly from a band, the pain is paroxysmal, vomiting very urgent, and the initial shock marked. Fæcal vomiting occurs early and obstruction is complete, no flatus being passed. Abdominal distension is but slight if any is present.

*Gall-stone colic and cholecystitis* are not infrequently diagnosed, more especially as there is so often the history of gall-stone colic in the past life. In the more acute cases of perforation of the gall-bladder a tender swelling may have been noticed in the gall-bladder region for some time—perhaps for days—before the onset of urgent symptoms.

Cases of *poisoning* rarely lead to any real difficulty. In acute metallic poisoning the purging is a prominent feature, and the discovery of the poison in the vomit places the diagnosis beyond doubt. In ordinary food poisoning there is usually more than one patient affected; diarrhœa is present as well as the vomiting, and cramp-like pains are a frequent accompaniment.

In acute hæmorrhagic pancreatitis if the abdomen is opened within 24 hours the amount of blood-stained fluid will be small, and may be supposed to have run from the external wound into the peritoneum; again, at this stage, it may be difficult to find any of the yellow points of fat necrosis. In any case in the adult where nothing is found in the more usual places to account for acute abdominal symptoms, search should be made for these areas, which are of small size, somewhat irregular outline, and yellowish-white in colour. I have been struck with the sodden state of the great omentum in some early cases, even when there have been very few points of fat necrosis visible. It has been of a greyish appearance, and has lost elasticity. There may be no evident swelling of the pancreas. If nothing is found which explains the sudden acute attack, it will be best to put in a drainage-tube for a few hours—for I can but think that some of the cases of abdominal section which have been closed "because nothing was found," have been of this nature, and without free drainage for a time the result of interference in most of them is worse than useless. A discharge which at first is of a reddish colour and varying amount will generally come away through the tube; this becomes of a yellow tint, and possesses a peculiar mawkish smell, and must not be permitted to accumulate within the peritoneal cavity, however small in quantity it may be. These patients are rarely good subjects for abdominal section, and I believe better results will be got on the average from simple drainage than from a more elaborate operation, such as incision of the pancreas, &c., possibly with drainage of the gall-bladder. Most of them will not stand the additional manipulations required, with the prolongation of the period of anæsthesia; it is possible, however, to do more if the patient is seen early in the attack, is in fair condition, and not too fat. The ideal operation is to incise the pancreas, with due regard to the duct and main vessels, and establish a direct route for the drainage preventing the escape of fluid into the surrounding peritoneal cavity, as in cases of rupture of the organ. Unfortunately the action of the secretion from the gland, if much escapes, is very destructive on the tissues with which it comes in contact, and if the flow is profuse you will find it difficult, or even impossible, to prevent actual digestion of parts.

### *Acute Dilatation of the Stomach.*

This is a rare condition, the origin of which is sometimes doubtful; it may follow an operation involving the peritoneum. An attack starts with copious fluid vomiting, epigastric pain and distension, which becomes diffused; the action of the bowels is irregular; signs of extreme collapse are present. Towards the end of a severe case complete atony of the stomach may lead to cessation of the vomiting. Of physical signs, the most valuable, when it is present, is succussion, but it is important to remember the possibility of the occurrence of such a condition in the acute abdomen. Unless relieved by evacuation of the stomach contents it usually proves rapidly fatal. The extreme distension of the abdomen and generally severe condition may lead to a diagnosis of acute peritonitis, or if there is constipation intestinal obstruction may be thought to be present. I will give two contrasting examples, one occurring in the course of an acute pulmonary attack, the other secondary to an abdominal operation and associated with general intestinal distension.

(I.) On Jan. 21st, 1903, I was asked to see, with Dr. Michael J. Bulger, a patient aged 15 years. The history of the case was as follows. Dr. Bulger was called to see her on the 19th, when she complained of pain under the left breast on breathing, which was increased by taking a deep breath; there was slight expectoration tinged with blood. Over the painful area there was some dulness, increased vocal resonance, and crepitation on respiration. On the 20th the patient was much easier. Temperature, 102° F.; pulse, 96; could take food easily, bowels acting. She was the subject of angular curvature of the dorsal spine, the result of old tuberculous disease. On the 21st she began to vomit at about 7 A.M., the vomited material being of a bilious character and yellow in colour. The bowels acted at 8 A.M. The pain in the side was much better, but the constant vomiting masked all other symptoms. Temperature, 99°; pulse, 80. Nothing relieved the sickness. The abdomen was retracted, dull all over, and without tenderness on pressure. At 6 P.M. she was rather collapsed, the vomiting continued, and now she was bringing up a black, tenacious fluid. She had complained of no pain since the vomiting came on, but the abdomen was becoming distended. About 11.30 P.M., when I saw her with Dr. Bulger, the abdomen was somewhat distended, but not markedly so, dull on percussion all over the front and down the left flank to Poupart's ligament. No dulness was present in the right flank. A well-marked thrill of fluid could be felt in the lower part and to the left. There was no rigidity. The pulse was rapid, face pale and sunken, tongue black and dry, whilst there was frequent vomiting of a black, tarry fluid. An incision in the middle line showed a greatly distended stomach, the lower margin of which passed down to the pubes; it was bluish in appearance and flattened. All the intestines were empty. There was no free fluid. Distension apparently ceased at the third part of the duodenum, and no pressure could empty the contents of the stomach along this part. A tube was put in, and the opening sutured to the abdominal wall. Much fluid was drained off from the stomach by this tube, and vomiting ceased; but very little relief was afforded, and the patient died on the following day, apparently from exhaustion.

(II.) This is the other example. A woman, aged 27 years, came under my care at St. Thomas's Hospital, sent to me by the late Dr. Heath of St. Leonards-on-Sea, on Nov. 7th, 1901, for a swelling in the abdomen, which had been noticed nine years, and was said to be increasing. On the 12th cœliotomy was performed, the diagnosis of ovarian cyst confirmed, and the tumour removed in the usual manner. On the first and second days after the operation the patient's pulse was about 110, and the temperature rose from 101° to 103° F. The abdomen became increasingly distended; there was no vomiting beyond that directly following the anæsthetic. A week after the operation there was evidence of slight suppuration in the abdominal wound, and pus was evacuated with a director. There continued to be great distension of the abdomen and much discomfort. On the 21st Dr. C. R. Box saw the case with me. The epigastric area was then very prominent and a ringing coin sound could be obtained over this area and extending downwards to the iliac crests; marked succussion was elicited on shaking the patient; there was no vomiting. Lavage of the stomach was commenced and carried out twice daily from this time. 26 days from the operation parotitis developed, associated with a septicæmic temperature and severe diarrhœa, and for some time this was uncontrollable. Anti-streptococcic serum was given; a marked rash followed two days after its administration, but it was without apparent effect on the disease. The distension of the abdomen did not appreciably diminish, and with a high temperature and the diarrhœa it continued for about three months; much œdema of both legs and the lower part of the abdominal wall supervened. Some peristalsis in the region of the umbilicus was occasionally seen, and the stomach still showed the physical signs of dilatation. On August 12th, 1902, the patient left the hospital. The gastro-intestinal functions had become normal, but the œdema in the lower part of the body, due (presumably) to thrombosis of the inferior vena cava, was still present. Seen again in January, 1903, her general health was good, though evidence of thrombosis persisted, there being some œdema of the ankles, with dilatation of the veins over the lower part of the abdomen.

The subsequent history of the second case is very interesting. The patient was readmitted to St. Thomas's Hospital under my care on Nov. 19th, 1907, for another abdominal swelling. It was stated that her general health had been good until a fortnight before, but that during that time she had suffered from pain in the stomach and swelling, but no vomiting. The abdomen was a good deal distended and tense on admission, the superficial veins dilated, chiefly in the lower part, and there were numerous lineæ albicantes in the same region. A dull rounded area was present reaching almost to the umbilicus from the pelvis. This was fluctuating and tender, whilst around it the intestines were distended and tympanitic. Her temperature was slightly raised. She was kept in bed for some time in order to give the inflammatory state a chance of quieting down, but the distension did not appreciably diminish. On Dec. 4th an incision to the left of the mid-line was made, and an inflamed ovarian cyst was removed. The pedicle was long and had been twisted three times from left to right, this rotation probably resulting from the movements of the over-distended pelvic colon. The cyst was very adherent to the omentum, but not suppurating. It was an ordinary multilocular cyst. The gut was very much distended, the sigmoid being about 5 inches in diameter when examined in the wound. The intestine was not punctured, as the condition was regarded as temporary in character. Much flatulent distension of the abdomen continued, not involving the stomach; many remedies were tried, but until the employment of the interrupted current late in December no definite effect appeared to have been produced by them, but the distension suddenly subsided on the 25th of that month. There was no suppuration or rise of temperature after the operation. The unusual amount of distension of the intestines present at the time of the second admission and the difficulty in getting rid of it after operation are especially interesting in a patient with this history. On this occasion there was no suppuration either before or after the operation, yet the distension was extreme, and suggested that the nervous element was an important factor in its causation. The rapid recovery on the use of the interrupted current confirms this view. We know how marked the "reflex" effect may be sometimes of an injury to the abdomen unattended with obvious lesion, also the great distension of the abdomen which may ensue on the mere application of a ligature to the neck of a hernial sac in the operation for radical cure. In a patient once under my care a condition of rapid distension of the abdomen with pain, vomiting, and a temperature of 103·6° F. ensued, with a collapse which excited alarm. Appropriate remedies soon produced a change for the better and the case ran the usual aseptic course without further symptoms.

The cases narrated above are both of them examples of acute dilatation of the stomach but present many points of contrast. In the first case the stomach had become a mere fluid-containing sac with a thin wall, which at the time of the operation was lying over the front of the intestines and gave a dull note on percussion across the middle line, an area which is resonant in all other conditions of the acute abdomen. There was most certainly no gaseous accumulation, and until quite the last stage there was no distension of the abdomen. It is difficult to account for the distension unless we accept that it was a paralysis due to some toxic condition associated with the patch of inflammation of the left lung found by Dr. Bulger when he first saw the patient. Spinal deformity has been noticed in other cases of acute dilatation, but when not associated with the application of a plaster jacket it is difficult to understand how it could have much influence on the production of such an acute and fatal affection.

Dr. W. B. Laffer collected a series of 217 reported cases, and of these 38·2 per cent. followed operations, usually one on the abdomen. The earlier notes of Case 2 were published by Dr. Box and myself in THE LANCET on account of its rarity, and as an encouragement in the treatment of such desperate conditions. We are inclined to put its occurrence down to some toxic absorption from the wound, although the amount of suppuration was neither acute nor extensive. It is probable that she owed her recovery to the fact that the distension was general and not absolutely confined to the stomach and duodenum. Dr. Laffer, from an analysis of his series of cases, writes: "The pathology and *modus operandi* of acute dilatation of the stomach and gastro-mesenteric ileus is not definitely known, but the experimental, clinical, and pathological evidence points to a primary innervation disturbance affecting the gastric nerves or their centres in the brain or cord. It has not been proved that the compression of the duodenum by the root of the mesentery is the primary cause of the so-called arterio-mesenteric ileus." Thus agreeing with Dr. Box and Mr. C. S. Wallace in their opinion.[3]

*Some Neuroses which may Cause Symptoms of Urgency.*

*Hæmorrhage from the stomach.*—No surgeon has any doubt that operative treatment is sometimes absolutely necessary in hæmorrhage from gastric or duodenal ulcers. It may be the only means of saving life, but the indications for its performance should be clear and definite. In some cases it may be possible to find and deal with the exact cause of the hæmorrhage; in others it will only be possible to treat the distension of the stomach (by gastro-enterostomy) on which the occurrence of the bleeding so frequently depends. It may be the wiser plan, when possible, to perform the operation of gastro-enterostomy, although the local trouble has also been directly treated.

In dealing with these cases it may be advisable to remember the possibility of the hæmatemesis being of hysterical origin, for such a condition is always amenable to medical treatment, and in my opinion should not be submitted to operation under any circumstances. The history of the case here given not only supports this statement but shows in a marked degree the ills that may follow ill-advised interference.

A woman, aged 29 years, was sent to me by Mr. Frank Boxall of Rudgwick in September, 1902, for varicose veins of the left leg which were causing her pain when standing. She was admitted to St. Thomas's Hospital (Mr. T. Guthrie was house surgeon), and Trendelenburg's operation with excision of some of the more prominent veins in the calf was performed. In her past history it was stated that she had been in another hospital a short time before for symptoms which were regarded as indicating the presence of a gastric ulcer. One night she developed acute symptoms, which were supposed to have been due to perforation of the ulcer, and an exploratory incision was made in the epigastric region by a surgeon, who found nothing but a normal state of the stomach; there had been no perforation. From the history this attack was supposed to have been hysterical. During her stay in hospital this opinion was confirmed by the fact that in the earlier days after her admission, when she was looking somewhat anxious in the face, she again gave an exhibition of perforation. She complained of acute pain in the epigastrium, the upper abdomen became suddenly distended, and the muscles appeared tense. There was, however, no change in her appearance, the pulse-rate, or temperature, and other symptoms were not in agreement with perforation; we had also the history to go upon, and the condition quickly improved when no special treatment was given. This patient left St. Thomas's about a fortnight after the operation for the veins, but returned in 1904 on account of hæmatemesis. She was vomiting daily, without any relationship to food, large quantities of fluid, in which there was a good deal of blood of dark colour, evenly diffused. In spite of the fact that this continued for a month without cessation, she showed no signs of anæmia, and always presented a smiling face to the world. No particular drug was given to arrest the bleeding, which was regarded as of hysterical origin. When the hæmatemesis had ceased for a few days and she had become bright and cheerful she was sent home. In about three months' time she was sent back to the hospital with another attack of hæmatemesis of similar character, from which she recovered in from three to four weeks, and returned to her home quite well. It was some months before anything further was heard of her, and then it appeared that she had again developed hæmatemesis when the influence of the hospital had passed off, and this time her friends sent her to a hospital "where there was a surgeon who would operate." Her next admission to St. Thomas's was on July 19th, 1905, when she was found to have a fæcal fistula, which communicated with the transverse colon and was situated at the lower part of a scar, through which, it was stated, her

[3] THE LANCET, vol. ii., 1901, p. 1259.

stomach had been operated on. We were informed by letter that although no ulcer or cause for the hæmorrhage was found at the examination, it was "thought" by the surgeon that there was an ulcer in the duodenum. She said that after the operation she did very well until the tenth day, when it was found that the milk which she was taking came through into her dressings. A second operation was done and the milk no longer came through the wound, but in ten days' time fæcal matter appeared when she took medicine, and fæcal fluid came through if she had an enema administered. The abdomen was opened in the middle line below the old scar and a lateral anastomosis of the large bowel above and below the fistula done. There were many adhesions. Recovery from this operation was quite uneventful, the fistula was allowed to close and, when she left the hospital, it was of about the size of a wooden match. She left at her own request. Readmission was sought in January, 1906, because she said that the escape of gas from the fistula was troublesome and caused offence to patients when she was nursing them. There was now a fistula of about the size of a cedar pencil, and as the bowels were acting well there appeared no reason why this should not be permitted to close. Accordingly a dressing was placed over it, and secured in position by means of broad strips of rubber strapping. The fistula closed to some extent, but we could not feel sure that it was not kept open in some way by mechanical means at the command of the patient. A smaller dressing was then applied, and this was covered and held in position by means of collodion. After this was applied she complained of excruciating pain and said that she could not possibly bear the agony of it. It was not, however, removed for a week, when the fistula had completely closed. I may perhaps mention that the fistula was found to have become distinctly larger after she had had a bath without the presence of a nurse; this was before the collodion was applied.

We were for a time under the impression that the case was now completed, but in March, 1909, the patient again came into the hospital during the cleaning of a charitable institution to which she had gained admission. A fæcal fistula had formed at the site of the former one, and she refused to have anything done with a view to closing it. When questioned as to the formation of this fistula she said that an abscess had come and had burst, leaving the fistula behind it, but there is a strong possibility that it did not form in this manner. If it had been closed, and this would soon have occurred under simple treatment, for there was a free normal passage for the fæces, she would no longer have been eligible for the institution in which she had now been received. I may add that her expression was that of a neurotic, and the diagnosis of hysteria was confirmed in many ways.

It was surely unnecessary to perform a gastrotomy for the relief of hæmatemesis in a case with this history. Gardini[4] has given the account of a case of similar origin. A girl, aged 22 years, had suffered from gastric symptoms for six years, and almost daily vomiting of blood for five months or more; in that instance the mucous membrane of the stomach is said to have been tinged, hypertrophic, and of a red colour, but there was no evident cause for the hæmorrhage. The patient was apparently cured by the operation. Gastric hæmorrhage has sometimes a purely nervous origin; sometimes it is simply a form of vicarious menstruation and has a relationship to the menstrual periods, as well as to emotional and constitutional disturbances and injury.[5]

Those of us who are engaged in doing much operative work must recognise what is almost a disease amongst a certain class of patients, chiefly those with abdominal symptoms—the desire for operations. It is not very unusual to see many scars on the abdomen and yet a continuance of symptoms.

*Enterospasm.*—By this term is now recognised a condition in which there is a spastic contraction of the muscular wall of some part of the intestines; there is no obvious structural change in the bowel, and the phenomena are usually regarded as being dependent upon some abnormal action of the nervous mechanism. The spasm may give rise to symptoms of varying intensity, from those of chronic constipation to such as simulate acute intestinal obstruction. Dr. H. P. Hawkins drew attention to the condition in 1906,[6] and I will quote from some of the conclusions he then set down. "Symptoms usually manifest themselves in patients during the active period of life; they appear with about equal frequency in the two sexes. The individuals affected are usually of a neurotic type and often of sedentary habits." Opportunity for direct observation of the spasm of the bowel does not often occur, but Dr. Hawkins thinks that the colon is more often affected than the small intestine. The pain in the subacute cases is sometimes localised in the right iliac region, and so appendicitis may be simulated.

I need here only consider the severe cases giving rise to symptoms which suggest the necessity of immediate operative interference. Sometimes the resemblance of the condition to intestinal obstruction of organic origin, or even to general peritonitis, may be so close that the mind of the observer is left in doubt as to the right diagnosis, and exploration of the abdomen will be the only sound course to pursue. Points which will be helpful in arriving at a decision are the presence of the trouble in highly strung, nervous individuals, and a history of previous attacks of abdominal pain similar in character and which have passed off without operation.

In a recent case operated on for me by the resident assistant surgeon, Mr. L. E. C. Norbury, the patient was a woman aged 40 years, for whom I had removed gall-stones about two years previously. Her symptoms were those of acute intestinal obstruction, and the spasmodic contraction affected much of the small intestine. She is a typical neurotic in appearance. I have met with the condition as a mere localised affection of the splenic flexure in more than one instance; here the patients have been overworked and anxious men of over 45 years of age.

Harley-street, W.

[4] Clinica Moderna, May, 1905; Brit. Med. Jour. Epitome, August, 1905.

[5] Loc. cit.

[6] Brit. Med. Jour., Jan. 13th, 1906.

A CASE OF

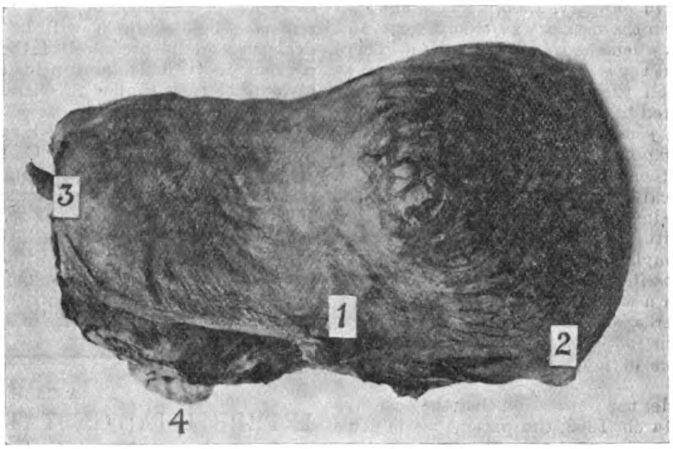
# INTERSTITIAL GESTATION AT THE THIRD OR FOURTH MONTH WHERE THE SAC WAS REMOVED UNRUPTURED WITH THE BODY OF THE UTERUS BY ABDOMINAL HYSTERECTOMY.

BY ARTHUR H. N. LEWERS, M.D. LOND., F.R.C.P. LOND.,
SENIOR OBSTETRIC PHYSICIAN TO THE LONDON HOSPITAL.

THE patient, a married woman, 29 years of age, was admitted into the London Hospital on July 17th, 1910. She had been married for three years, and had had one child 11 months previously and one miscarriage three months after marriage. She had suckled the baby up to a fortnight before her admission. Soon after the confinement there was an interval of amenorrhœa lasting six weeks, but after that the periods came on and continued to occur regularly (although she was suckling) up to the middle of April, 1910. Since that date she had "seen nothing." Ten days before admission to hospital she had noticed a lump in the lower abdomen on the left side. Three days before admission she was seized during the night with sudden attacks of severe pain in the region of the lump. When she was brought up to the hospital she was evidently acutely ill, but as the cause of her illness was uncertain till a careful history had been obtained she was admitted in the first instance on the surgical side. When the circumstances were more fully investigated the case was thought to be probably obstetric, and it was therefore transferred to the obstetric wards in the early morning of July 18th, where I saw her at about 2 A.M. The pulse was then 120 and the temperature 97·5° F. She was suffering from very acute pain in the lower abdomen, but she was not anæmic, nor was there any vaginal bleeding. The mass in the left iliac region was felt, but could not be very thoroughly examined as there was great tenderness, and the muscles were rigid. On vaginal examination the cervix was soft, and the mass to the left appeared to be closely connected with the uterus (which was enlarged) and perhaps part of it. The history of

three months' amenorrhœa and the condition of the cervix with some enlargement of the uterus made it very probable that she was pregnant; while the absence of any vaginal bleeding, and the character of the pain, with such marked tenderness, were against regarding the condition as one of miscarriage. I thought probably the condition was one of ectopic pregnancy, although the fact that the patient was not anæmic showed there could not have been any serious internal hæmorrhage. It appeared to me that an exploratory laparotomy was the best course, and accordingly I at once proceeded to operate. On opening the abdomen just a little free blood was seen. The body of the uterus was enlarged, and to the left of it, and separated only by a shallow groove, was a rounded swelling larger than the body of the uterus itself, about the size of two fists. The left Fallopian tube, which was normal, could be traced up to this, and the condition was then recognised as one of interstitial gestation. Supra-vaginal hysterectomy was then performed in the usual way, the body of the uterus being removed together with the unruptured gestation sac. The various steps of the operation were a good deal hindered by the fact that the intestines were much distended. Both sets of uterine appendages appeared to be normal and were not removed. The patient suffered a good deal from shock during the first 24 hours after the operation. She then rallied well and made an uninterrupted recovery.

FIG. 1.



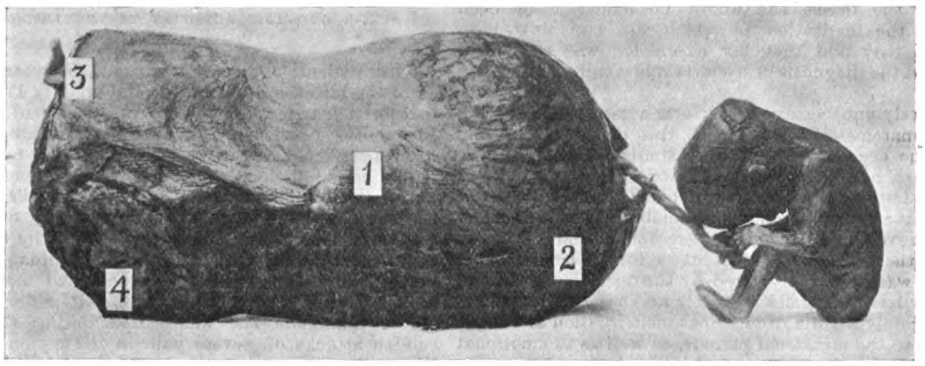

Anterior aspect. A large ectopic sac is seen at the left cornu. The hypertrophied round ligament (1) is inserted directly on to the sac. To the outer side at (2) is seen the stump of the left tube and the ovarian vessels. (3) The normal right round ligament. (4) Decidual lining projecting through internal os at the level of amputation.

*Description of the parts removed.*—The specimen consists of the body of the uterus and an adjacent pregnant sac, and has the appearance of a bilobed tumour. The two lobes are of unequal size, and are separated from one another by a shallow groove. The smaller of the two lobes is the enlarged empty body of the uterus, lying below and to the right; the larger, lying above and to the left, is the ectopic sac. From the cavity of the uterus at the level of amputation projects a rich decidual lining (marked 4 in the photograph). The ectopic sac is globular, and is 4 inches in diameter. Over the whole of its peritoneal surface large veins are seen ramifying, especially in the neighbourhood of the left tubal stump, and close to the contiguous left border of the uterus. At the lower and inner pole of the gestation sac, and a little external to the above-mentioned groove, is seen the thick hypertrophied left round ligament (1) inserted directly into the sac, and in marked contrast to the small round ligament on the right side (3); a distance of 4 inches separates the two round ligaments. At the upper and outer pole of the gestation sac is seen (2) the stump of the left tube and ovarian vessels ligatured close to the sac and thus preserving the ovary. Anteriorly no breach of surface is seen on the convex glistening peritoneal aspect of the sac, but posteriorly there are one or two faintly eroded areas where the peritoneum has lost its lustre, and serum exudes through at these areas on pressure. This has evidently been the source of the small amount of blood found free in the peritoneal cavity when the abdomen was opened.

These anatomical relations show that the case is certainly one of interstitial pregnancy on the left side of the uterus, since the left round ligament is inserted directly on to the sac on its anterior aspect, and the normal unaltered Fallopian tube lies well to the outer side of the gestation sac.

On opening the sac subsequently after hardening, the wall of the sac at its highest point is seen to be very attenuated in thickness. A "window" cut out here passes through a thin slice of placental tissue, and exposes a normal fœtus of three months' development, or perhaps rather more, connected by its umbilical cord to the placenta, which occupies the bulk of the inner surface of the sac. Sections taken through the sac wall demonstrate the presence of muscle and early placenta.

FIG. 2.




Anterior aspect. The gestation sac has been opened at its thinned-out apex, traversing placental tissue. A well-developed fœtus (third to fourth month gestation) connected by its umbilical cord to the placenta on the inner surface of the sac is seen outside an artificial opening made in the sac. The sac was about the size of two fists.

I am indebted to Dr. R. D. Maxwell, obstetric registrar at the London Hospital, for the above description of the specimen, and for superintending the preparation of the photographs herewith reproduced.

*Remarks*.—Interstitial ectopic pregnancy is much the rarest variety of tubal gestation. It is also one of the most

dangerous, because, owing to the walls of the sac being formed of uterine tissue, pregnancy proceeds generally to a more advanced date than is the case in the other varieties of tubal gestation. When, therefore, the sac does rupture a large and often fatal amount of blood is rapidly lost owing to the relatively large size of the vessels. Thus, in this variety of ectopic pregnancy, once rupture has occurred there is much less chance of having the opportunity to operate in time to save the patient. It is, of course, quite true that in the commoner kinds of tubal pregnancy—the isthmic and the ampullar—a fatal quantity of blood may be lost; the loss, however, owing to the smaller size of the vessels concerned, takes place more slowly, and, if the case is seen fairly soon, the probability is that the operation will be successful. It is obvious how important it is, therefore, in cases of interstitial pregnancy, to recognise its presence as soon as possible and to operate without delay. In the case narrated above the diagnosis was not absolutely made before the abdomen was opened. It was evident, however, that the patient was seriously ill and in great pain, and that there was an abnormal swelling to the left of the uterus and closely connected to it. In the presence of such conditions it is undoubtedly the best thing to perform laparotomy, and ascertain exactly what is wrong. A point of some interest in the history of cases of interstitial gestation is that usually there is persistent amenorrhœa up to the time when the case comes under observation, whereas in other forms of tubal pregnancy more or less irregular hæmorrhage is found to have occurred in the great majority of the cases. A point requiring consideration during the operation in interstitial pregnancy is as to whether it is possible to excise the sac, or whether it is better to perform hysterectomy. No doubt in some cases, where the sac is small, it may be safely excised. When, however, the sac is as large as it was in the case just recorded, I feel sure the safest plan is to perform hysterectomy.

Upper Brook-street, W.

## A NOTE ON THE CARDIAC DIASTOLIC SOUND AND IMPULSE.

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COMMON though a diastolic sound audible at the apex of the heart is, there seems to be some confusion in the minds of many as to its significance. When sufficiently loud to attract the attention of the comparatively inexperienced auscultator mitral stenosis is frequently diagnosed. Not long ago I met with a striking illustration of this. It fell to my lot to examine a considerable number of children in whom disease of the heart had been diagnosed at some previous period, generally a year or longer before, and in several of the children a presystolic murmur, thought to indicate the presence of mitral stenosis, had been noted. When I listened it was evident that in many of the cases in which a presystolic murmur had been heard no organic disease was present. In these cases the so-called "presystolic murmur" no doubt had been a diastolic sound which had disappeared.

A murmur which is heard at one time by a medical man and not heard at a later period by another is generally assumed to have been a so-called "functional" systolic murmur or possibly an exocardial sound. It probably is true that in the majority of instances a murmur which attracts attention and then disappears is systolic in time. A diastolic sound, however, is also a sound which may be present for only a short period, and consequently when we are informed that a murmur has been previously heard which we fail to detect, it seems to me that the possibility of a diastolic sound having been at one time present and assumed to be a murmur should not be forgotten.

The hearing of most of us, no doubt within certain limits, differs in its power to note the occurrence of sounds of various grades of intensity or of pitch. Some probably are comparatively sensitive to high-pitched sounds, others to those of low pitch. Exocardial sounds, for example, may easily attract the attention of some, while a dull diastolic sound will appeal more readily to others. To me a diastolic sound of faint character is so commonly heard that I might almost describe it as a normal sound of the heart. Even a sound which should be sufficiently well marked to be heard by the majority seems to me to be not infrequently heard over the hearts of people in the very best of health. While, however, this appears to me to be true, it is scarcely necessary to remark that the diastolic sound is most distinct in various abnormal conditions. But these conditions are often only passing. The presence of a well-marked diastolic sound audible over the heart towards the end of some cases of typhoid fever and its disappearance during convalescence is well known. But during ailments of slighter character this sound, although not uncommonly present, may not so often attract attention. An ill-defined febrile attack of a few days' duration may in a child be quite sufficient to lead to the appearance of the sound, and it is frequently heard in comparatively chronic conditions of ill-health, such as dyspepsia or anæmia. The listlessness and unusual inactivity of a temporarily debilitated child may lead to the suspicion on the part of the relatives that something may be wrong with the heart, and there is a danger probably that the discovery of a diastolic sound may lead the medical practitioner to share this view. Less commonly restlessness rather than inactivity may give rise to concern in the mind of the parent, and over the heart when restlessness is a sign of temporary ill-health a diastolic sound may also be heard.

Here it may be mentioned that when a diastolic sound is well-marked a diastolic impulse is also present which can be felt by the hand placed over the heart. A tracing can be taken with a cardiograph or with Dudgeon's sphygmograph of such an impulse. The pressure employed, however, should be slight. Under too great pressure the wave due to the diastolic impulse does not appear on the tracing. This ease with which the wave may be obliterated renders its impulse to be felt much more easily by the hand than recorded by a tracing. Fig. 1 represents a tracing taken from over the

FIG. 1.

A cardiographic tracing taken with Dudgeon's sphygmograph showing a diastolic wave preceding the rise due to systole.

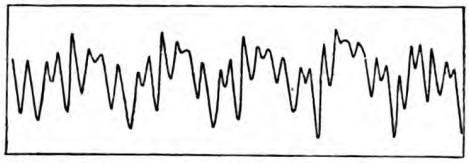
heart of a boy, aged 11 years, who had never suffered from rheumatism or from pains in the joints. He was brought to be examined by his mother on account of restlessness. He appeared to be intelligent but nervous. On auscultation a dull but very distinct diastolic sound was audible at the apex of the heart. Associated with the sound was an impulse of which a tracing was taken. Five years later the boy was again seen. He was then a healthy, well grown lad working on a farm. No trace of anything abnormal could be detected in his heart.

Although a diastolic sound is commonly present in association with temporary ill-health in which the heart probably suffers, it is perhaps most marked in cases of organic disease, but in those cases the sound may be strangely inconstant. That is to say, it may be distinctly audible one hour and not the next. The character of the impulse and the character of a cardiographic tracing, as might be expected, change with the alteration of the sounds. Over the heart of a man suffering from alcoholic disease of the heart within the space of half an hour I have obtained two tracings, one a normal cardiographic tracing, and the other showing a well-marked abnormal rise in association with the presence of a diastolic sound. In mitral stenosis the presence of a diastolic sound

distinct from the presystolic murmur is frequently observed. The sound need not, however, be limited to the apex like the true presystolic murmur, but may be widely heard over the heart.

In a discussion as to the probable causation of this diastolic sound I do not propose to enter, but it may be mentioned that the sound apparently may arise either in the left or in the right ventricle. When the sound is best heard at the apex it probably arises in the left ventricle. When more widely heard it may arise in both ventricles or in the right only. Over the right ventricle, as at the apex, the distinctness with which it is audible varies from time to time. Over the right ventricle the diastolic sound is not uncommonly best heard, and sometimes heard only at the moment that expiration ceases and inspiration begins. This is the moment at which an intermission of the pulse is frequently noted to occur in children. Although, as has previously been mentioned, it is not intended to discuss the

FIG. 2.



Tracing of a heart-impulse taken with Dudgeon's sphygmograph when a diastolic sound, part of a bruit de galop, was present. The sharply pointed wave preceding the notched systolic wave represents the position of the diastolic sound in the cardiac cycle. Respiratory undulations are also recorded in the tracing.

causation of a diastolic sound, possibly the fact that it frequently occurs when inspiration is commencing to lend its aid to diastole of the ventricles may be considered to support the view that a diastolic sound is in some way connected with active diastole. A fact which may also be urged in support of such a view is the occurrence of a diastolic sound in association with hypertrophy of the heart. The presence of the sound in the large heart of Bright's disease has frequently been the subject of comment. Another variety of hypertrophy in which the sound occurs is the hypertrophy associated with adherent pericardium in children. Here the sound may sometimes be so prolonged as to

FIG. 3.

Tracing taken from the same heart-impulse with Marey's cardiograph, showing the rise of the apex in diastole during intermissions. When this tracing was taken no diastolic sound was audible, and the wave before the systolic wave is absent.

be readily mistaken for a presystolic murmur. Fig. 2 shows a tracing taken from over the heart of a boy, aged 14 years, who died with a very large heart associated with adherent pericardium. During life a well-marked diastolic sound, in this case of bruit de galop rhythm, was audible. It may be interesting to compare the tracing taken over the heart when a diastolic sound was present with one taken when the heart was intermitting, but no diastolic sound was audible (see Fig. 3). In the second tracing there is absence of the sharp pointed wave preceding the systolic wave, a slow rise being present in its place before the systolic wave which follows an intermission.

The above remarks are intended chiefly to refer to the possibility of the sound being incorrectly thought to indicate the presence of valvular disease. The sound, however, always seems to me to be possessed of more than ordinary interest, and when one considers its frequency it is perhaps surprising that it has not been more often a subject for careful investigation.

# BRITISH HEALTH RESORTS FOR FOREIGN INVALIDS.[1]

BY NEVILLE WOOD, M.D. DURH.,
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AT the very threshold of my somewhat novel topic I am met by the necessity of surveying the subject as a whole rather than dealing, as I might otherwise have done, with certain of its more important details. This is due to the fact that even propositions apparently so elementary as that our British health resorts offer substantial benefits to foreign invalids or would gain anything from their presence will require some argument in their support. The policy, indeed, of most of the municipalities concerned would seem to exhaust itself in efforts to keep the Briton from foreign countries, rather than to bring the foreigner to ours. And while on this topic, I cannot refrain from protest against the appeals—short-sighted, if patriotic—issued presumably by responsible authorities, against our sending patients abroad rather than to this or that British resort. Considerations of dignity apart, do not such urgencies suggest an admission of weakness, an admission for which there is certainly no occasion? Much better—even for the ends in view—would be a frank recognition of the conditions under which a certain proportion of the invalids of any country do benefit by being sent out of it. By stating categorically the classes of patients unsuitable for home resorts, these writers would, it seems to me, improve their own position, as they would thereby strengthen the hands of practitioners in allotting to British stations the vast remainder of patients, who would be rightly sent there. Certainly, no well-informed British physician could conscientiously endeavour to dissuade all, or nearly all, his patients from seeking health in other lands, and I suggest that the proper way to redress an adverse balance is to take measures to attract those foreign invalids for whom it can be shown that the therapeutic resources of our country are peculiarly well adapted.

I have contended elsewhere (and towards the acceptance of this view at home and abroad the considerations urged in this paper are an additional contribution) that continental health resorts should not be regarded as competing with British health resorts, nor British with continental. They are, and that for immutable reasons, complementary to each other. And it is my conviction that when we succeed in making the inhabitants of the European mainland as well aware of the specific advantages of our stations as we are of the indications for theirs, there will be a free interchange of invalids, instead of, as now, a movement practically in one direction, and that away from our shores.

Let me illustrate by a single example the absurdity of the present position. In one of the most distant of the continental spas coming within the orbit of expatriated British invalids it is shown by statistics that 1 patient in every 30 hails from Great Britain, whereas at one of our leading spas it is estimated that less than 1 per 1000 comes from all the countries of the Continent put together. This is a state of things likely to continue as long as the literature dealing with our health resorts is written in English only, and as long as it passes over in silence the advantages, actual and potential, of our stations to foreigners in search of health and recreation. It will, in fact, continue just as long as we are content to allow foreign physicians and laymen to suppose that there exist in our islands no spas or climatic stations of the highest rank. In a well-known German manual describing the health resorts of Europe there is no mention of any in England. Again, in a similar French publication, in its forty-ninth year of issue, whereas six pages are allotted to Spain, two are considered appropriate for Great Britain, while various errors and omissions sufficiently indicate the absence of competent revision. It has, however, recently come to my knowledge that the editor of one of these books endeavoured, but without success, to procure

[1] A paper read before the Balneological and Climatological Section of the Royal Society of Medicine on Dec. 14th, 1910.

in London an authentic account of British spas. That, at least, was a manifestation of interest, and when I met with another in a request for a sketch of our seaside resorts as an addendum to the German translation of my little book "Spa Treatment," and received, further, the generous offer of a French translation of a work on British spas, it seemed to me the time had come to bring the whole subject before the council of this section, and to offer a paper, both to elicit criticism from the general body of our members and to enlist their active assistance in the task of making widely known abroad the climatic and balneary resources of Great Britain. Criticism is advisedly placed first; for it is not unlikely that I may, on the one hand, have overlooked strong points in, so to speak, the case for Great Britain; while, on the other hand, if the medical men practising in any of our health resorts are of opinion that there is no room for the introduction of foreigners, I should be disposed, in anything written for continental journals, to lay little stress on the particular stations considered suitable only for patients of our own nationality.

I think, however, that there can be but few of our professional health resorts which would not find the presence of a cosmopolitan element beneficial. In addition to the cash brought to its coffers (though possibly an almost negligible quantity for some years) an advantage to the station would be that the prospect of a steady increase in the number of patients from a fresh source would stimulate the zeal of the local authorities in effecting improvements, for I believe that in some instances these authorities would be more inclined to give heed to foreign than to native criticism, lay or medical. And, be it said, it is the absence of those amenities which are demanded by foreigners that forms one of the excuses of Britons for their annual pilgrimage abroad. The medical men, collectively, would be conscious of the incentive afforded by wider scope in the fields of scientific investigation and of practical therapeutics. But the watchword for practitioners, no less than for spas, is prestige, and a full measure of prestige will never be gained until British mineral water stations have added international fame to national repute.

Turning now to another aspect, I think that the writer who desires to trace the lines on which we may proceed to place before the foreigner the advantages of the British Isles for some invalids—and their disadvantages for others—best fulfils his task by abstaining from over-much refinement and by confining himself as far as possible to statements likely to meet with general acceptance. That must be my excuse for adhering, on the whole, to the conventional and inclining to the methods of dogmatism. I will begin, then, with the general proposition that when health fails in one set of surroundings common sense suggests an entire change; while in its application to my immediate purpose I think attention may justly be called to the fact that in many ways our island differs more from all the continental countries than do they from each other. It follows, therefore, that in the numerous instances when change of environment is demanded, whether for its own sake or as an adjunct to treatment, balneary or climatic, the health resorts of Albion merit the attention of clinicians in very many lands. And since our foreign *confrères*, like ourselves, sometimes fail to obtain sufficient control over patients who remain within motor distance of home or business, it may be suggested that the plan of placing a strip of water between an invalid and his cares is not less advantageous for dwellers on one side of the Channel than on the other.

Passing from the general to the specific, and dealing with the limitations as well as the merits of British spas, it may be taken as certain that not many patients will be sent to them from the European mainland for an intensive bathing course alone, our cool climate not serving as an auxiliary to that form of treatment. Nor will large numbers come solely for a drinking course, since we possess no waters of types which are not well represented on the Continent. Regarded purely from the climatic standpoint, however, every part of Britain has the decisive advantage of being at its best for a special purpose just when most of the continental stations, and certainly all the spas (unless perhaps St. Moritz), are at their worst. That purpose is active exercise in the fresh air, and that season includes the greater portion of July with the whole of August—the most crowded months of the summer season. Now it might be supposed that the point I have just made does not deserve so much emphasis, for in England we commonly overlook this aspect of spa treatment. But in Germany and Switzerland conditions exist which compel physicians, not infrequently, to have recourse to the manœuvre suggested; and I have some reason for thinking that France must shortly follow suit. It is true that foreign spas offer to the enfeebled superior incentives to the less severe forms of physical exertion, but a long and really brisk walk becomes a trying ordeal therein the hotter months even for persons in the best of health. The cooler climate of Britain, on the other hand, favours all kinds of outdoor exercise, including, of course, the best of all—the Royal and ancient game of golf.

Taking all these considerations together, we at once perceive that the categories of foreign invalids for whom our spas are typically suitable include those who thrive in a relatively cool climate and are able to walk well; those who in association with complete change derive benefit from baths which are neither very hot nor taken in close succession, and, of course, those whose maladies are held to be tributary to the waters we possess—that is to say, the muriated, sulphuretted, indifferent, earthy, and alkaline sulphated. Such waters, as everyone here knows, are well represented respectively at Llandrindod, Harrogate with Strathpeffer, Buxton, Bath, and Cheltenham; while there are iron springs at many spas, strong salt water at Woodhall, and brine at Droitwich. All of these resorts are sufficiently well-equipped balneologically, and in their different ways compare not unfavourably with the corresponding continental spas.

There is a charge which has so often been levelled at our spas that it cannot be left unnoticed. Stated bluntly, it is that they are intolerably dull. Denial, admission or apology, must be left to other writers. Comment sufficient for my purpose is that, taking together all continental spas, there are not more than five which can definitely be described as gay. In a large proportion of the remainder tranquillity reigns. Yet these essentially restful resorts are visited annually by thousands of invalids—by invalids who do not desire the amusements of a great city or the excitement of Monte Carlo. It is from this sufficiently large army of health-seekers that recruits may be drawn for a pacific invasion of our island.

Uncertainty of weather, or, in other words, excessive rainfall, is an apparently more formidable objection, but I would point out that on the European mainland also a spa season may be spoilt by persistent downpour. Such was the case this year throughout the continent, and last year in the northern stations. It must be admitted that the month of June is more often wet and cold with us than abroad; but in July and August less rain falls in the eastern division of England than at some of the stations of Western Europe. In the West of England the rainfall is no doubt considerable, but in summer it is not quite the drawback that might be supposed, for during the showers the patient can sit or promenade on a veranda, while even if driven indoors he need not, and should not, close the windows. If proper open-air galleries were erected at British spas patients coming for a serious cure would be rendered practically independent of rain; the existing structures, known as winter gardens, might well be called summer penances.

As a concluding observation on the subject of British spas from the international point of view, I suggest that whereas for Britons they may be regarded as mineral water stations, with climatic advantages, for foreigners their rôle is rather that of climatic stations, with the advantage of mineral waters.

I trust that enough has now been said to establish my contention that our spas can render important services for a goodly number of patients from beyond the seas. When the sketch comes to be filled in, and the specific merits of the separate stations are properly defined, it will, I think, be found that their utility stands out in still more marked relief. For these purposes a volume is now under consideration, with authoritative monographs written locally, and the whole collated by whatever chapters may appear to be necessary. Entire candour will, I hope, be the key-note of this work, for spa literature without that quality is fit only for the scrap heap.

Passing on now to our seaside resorts, I believe them to possess for foreigners many advantages which, if not so well defined, are even wider in range; these resorts may, in fact, be regarded as alternatives for some continental spas, as well as for climatic stations, inland and maritime. It has been shown by Frankenhäuser that many of the inhabitants of

central Europe, and especially those who are anæmic, nervous, or scrofulous, suffer in the height of summer from the extreme dryness of the air which persistently overworks the evaporative function of the skin. He explains that the benefit derived by such persons from a course of spa treatment is largely due to the re-hydration effected by a series of immersions in mineral water baths. During the bath, and after it, the hygroscopic salts pass into the superficial layers of the epidermis and remain lodged there; and thus, as he expresses it, the patient becomes clothed in a gossamer mantle of deliquescent salts, which, by checking evaporation from the skin and neutralising the effects of abrupt changes of temperature, places the overstrung organism in a state of relative physiological repose. This action is supplemented by the air at most of the German spas, rendered relatively moist by afforestation and other factors, while it is carried a stage further by the still greater humidity of the seaside resorts.

Anyone reflecting on Frankenhäuser's carefully reasoned argument, which I regret could only be given in the merest outline here, will, I think, admit that we are entitled to supply as a missing corollary that the climate of our island, from its greater humidity and equability, provides even more effectively the atmospheric conditions required by the categories of patients to which he refers. It is arguable also that if immersion in mineral water has the influence claimed for it sea bathing must be even more potent, for the organic matter in sea-water renders it peculiarly adherent to the skin. One of the reasons for the increase in the number of Germans visiting the coasts of their own country and Belgium may be the perception of the fact that greater hydration of the skin is effected by the combined influence of sea air and sea water than by mineral-water baths, taken in the drier air of the German spas, even when assisted by inhalation of atomised salt solutions.

It is unnecessary for my present purpose to enter into a detailed discussion on thallasso-therapy, for I find the opinions recorded in French and German literature to be substantially in accordance with our own. But from the indication list of Thilenius, the most concise I have met with, I should like to subtract migraine and rheumatism, which I believe to be seldom indicated, and rickets, which can scarcely be considered a specific indication. I imagine, also, that most English authorities would agree in the addition to the list of convalescence from acute disease; while I think that we should lay stress on the special benefit derivable in our humid climate by patients suffering from the dry form of respiratory catarrh—a condition frequently met with in central Europe. The remaining indications given by the authority mentioned are: the scrofulous diathesis; tuberculous disease of bones, joints, and glands; predisposition to phthisis; emphysema of moderate degree; delicacy of the skin, and especially undue sensitiveness to cold; delayed development in childhood; and last, not least, neurasthenia from mental or physical overstrain.

The indication, predisposition to phthisis, calls for comment, since Dr. J. W. Gordon has drawn attention to the high ratio of phthisis morbidity in places exposed to strong prevalent rain-bearing winds. I suggest, therefore, that until this phenomenon is explained on other grounds we should caution our foreign colleagues against sending patients predisposed to the disease to the more exposed of our westerly stations.

Of the sea coast of Britain it is not too much to say that although it is impossible to point to any part which has not in summer an agreeable climate, yet climatic variety is its leading characteristic. Facing every point of the compass, some with scarcely any shelter from the wind, others well protected in land-locked bays, there are towns and villages presenting from June to September a graduated scale of invigorating climates not to be found on any other European seaboard and surpassed only by the antipodean island of New Zealand. There are, in addition, some adjacent inland stations where the climate under modified marine influence is remarkably well suited for patients who find the coast too stimulating.

The summer climate of our south coast from a point a little to the south of Margate on the east, to Penzance on the west, may roughly be compared with that of the French coast from St.-Pol-sur-Mer to Roscoff, or perhaps le Conquet, but local factors introduce so many modifications that there is little resemblance between the individual resorts. In winter, however, our best sheltered stations, from Bournemouth westward, owing to their southerly orientation, enjoy a milder climate than those of the French coast opposite. There is no maritime climate in France closely comparable with that of the east coast of Britain, from Margate to the north of Scotland, nor with the west coast, from Weston-super-Mare to the Hebrides. On the other hand, we have none in any way resembling that of the French coast from Arcachon to Hendaye, and still less that of the Côte d'Azur; but these regions, and especially the latter, scarcely come into the count as summer stations, at any rate for northern peoples.

Regarded from almost every other standpoint, the seaside resorts of the two countries lend themselves rather to contrast than comparison. For persons seeking the brightness and particular kind of gaiety of Trouville we have nothing to offer. They might as well ask for the Alps at Enghien or the Quartier Latin at Paramé. I do not know, moreover, in England of any little nooks of a type not uncommon in France, and well represented by Pourville. Places of that size are with us usually rough fishing hamlets, and hotels in any way equal to those in France are not to be found. For foreign invalids the most suitable of our seaside stations are those of moderate size. They are described by visitors who like them as dignified, well administered, and offering no form of excitement likely to distract attention from the pursuit of health; by those to whom they do not appeal, and who, of course, should never have been sent there, as insufferably dull. Eschewed in England by the "fast set," they attract the more sedate of the aristocracy and the steadier members of the professional and commercial classes, and so may well prove intolerable on the one hand, or congenial on the other, to corresponding sections of French society.

Between the long and indented coast line of Britain and the shorter and less varied German littoral not many comparisons can be drawn. Still, it is useful to remember that the mean summer temperature of the southern part of our east coast is about the same as that of the North Sea island of Borkum, while that of the northern portion finds its counterpart in the island of Keitum. These localities have other features nearly in common, the daily range of temperature on our east coast being only fractionally less and the hours of bright sunshine rather fewer, while the relative humidity is a little greater. I have not been able to procure the rainfall figures for all the stations, but between two that are sometimes compared I have found a rather surprising difference. In summer, when they come into rivalry, the rainfall of Margate, the most southerly of our east coast stations, is much less than that of Borkum; during the three summer months the mean rainfall for Margate being 112 mm. and for Borkum 212 mm.; while August, the driest month in the year at Margate, with 24·9 mm., is, at Borkum, the wettest, with 89 mm.

Of the Baltic resorts I have come across meteorological statistics only for Swinemünde, and it is interesting to note that the figures of mean summer temperature, and mean relative humidity, agree closely with those of Bournemouth.

In comparison with those of Germany, our coast towns have been longer resorted to for health and pleasure, and so have the advantages of age—with its disadvantages. Some of them are much larger, and the greater preponderance of a population permanently resident lends them a more sedate air. Laid out, originally, on no definite plan the minor streets are sometimes unduly narrow, and those towns which had their great rise during the worst period of English architecture are, it must be owned, frankly hideous. Thus is painted first the darkest side of the picture—the æsthetic. On the other hand, we can state as very solid advantages that their sanitation and water-supply are always unimpeachable, and that they are usually as neatly kept as the very best of continental spas. Along the sea front of the more important towns there are many miles of concreted walks, usually provided with rain-shelters, and also carriage roads of easy gradient. It is, indeed, the stereotyped repetition of a sea-front promenade, designed apparently to illustrate Euclid's definition of a line, that gives the British seaside town its distinctive *cachet*. It constitutes a feature of psychic as well as physical import, for not even the attraction of bands and minstrels can bring together, at the same time and in a limited area, a concourse of people sufficient to create a scene of animation such as we see in

foreign health resorts. At the hôtels, even when a *chef* presides, cookery is modified to suit insular taste, and the made dishes resemble somewhat those served at the *tables de régime* of continental spas.

More space than is taken up by the whole of this paper would be required for a study of the medical climatology of our east, west, and south coasts. That is a task which I hope to see attempted in the near future, and I would merely point out that whoever undertakes it, if he endeavours to view the subject through foreign glasses, will, necessarily, give some indications which would not hold true for English people. I have observed, when treating foreigners in London, that usually the sick-room temperature must be kept from one to three degrees Centigrade higher than would be tolerable to English patients. The explanation of this difference is, I suppose, that the winters on the Continent being longer and colder more efficient methods of domestic heating have been adopted, while the summers being uniformly warmer the body is exposed during the greater part of the year to a higher mean temperature. For that reason I believe that some of our winter stations will be found to be typically suitable in the height of summer for many continental invalids, the more delicate being directed to the south coast, though if delicacy is associated with a fair degree of physical activity the west coast should be given the preference. Thus the word "relaxing," hitherto dreaded as a death sentence, may prove a passport to renewed prosperity. When the foregoing principles come to be applied in practice, it will be found that foreign invalids may, with advantage to themselves, be sent to some of our stations just at the time when Britons are accustomed to desert them—a fortunate circumstance—for during the official season there is often little room for additional visitors.

The western section of the south coast would seem to me to be well adapted for patients suffering from simple catarrh of the air passages, after a course of intensive treatment at Ems or Mont-Dore. It would be on the safe side to represent the east coast as a summer playground for the fairly robust, or, using the word in a wide sense, as a "preventorium." Certainly there is no better preparation for the rigours of a winter in northern Europe than a month in autumn spent on almost any part of our east coast.

Since the coast line of Britain presents an almost continuous chain of summer health resorts, reasons might be offered for mentioning the greater number of them for the purpose indicated by the title of my paper, but even from a severely restricted selection I submit that the following, taken in geographical order, could not well be omitted: Cromer, Felixstowe, Margate, Hastings, Eastbourne, Ventnor, Bournemouth, Sidmouth, Torquay, and Tenby. Happy is the writer or speaker who is not called upon for full enumeration or to distinguish between the claims of so many famous places, for so fiercely burns the flame of local patriotism that whereas by commendation few friends are gained, by criticism a harvest of enmity is reaped.

I have left insufficient space for characterisation of the inland climatic stations—and you will readily forgive the omission. But if this communication should fall into the hands of any of our foreign colleagues I will ask them to accept the assurance that in Britain, from John o' Groat's to Land's End, it would be difficult to find an ugly district or one not typically healthy in summer; and that at the same season for the ideal of air, bracing yet not devoid of sedative qualities, there are few places in the world superior to Hindhead, Crowborough, Church Stretton, Ben Rhydding, and Okehampton in England; Braemar and countless others in Scotland. Strict regard for truth compels me to add that in these places amusements in the continental sense of the word are non-existent. No foreigner should go there who does not speak English well; he should take with him golf clubs and faithful friends.

In writing this short sketch I am well aware that I have but touched the fringe of a great subject. I shall be satisfied if by anything I have said the interest of foreigners is stimulated in our island as a health resort and summer playground, and still more if British physicians are induced, filling the wide gaps I have left, to present to the world in a fresh light the splendid climatic and mineral water stations of their own country.

Elvaston-place, S.W.

# THE USE OF IODINE AS A DISINFECTANT OF THE SKIN BEFORE OPERATIONS.

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WITHIN the last five years many articles have appeared in the medical journals on the value of iodine as an antiseptic in preparing the skin of the patient for operation, and sufficient time has now elapsed to enable those who have employed it to express decided opinions as to its value. The first advocate of its use in this country was Mr. H. F. Waterhouse, and with his conclusions as a whole probably all those who have used it will agree. But there are a few points in connexion with the use of iodine on which I should like to express my opinion.

I may say at the beginning that I think very highly of this method of sterilising the skin. It is simple and thorough; it causes less discomfort to the patient and has a less harmful effect on the skin; and when it is employed stitch abscess is decidedly less rare than when the ordinary antiseptic compress has been employed. The application of iodine is certainly liable to cause some irritation to the eyes and nose of those who apply it, though there are great individual differences in this respect. I should like to endorse what Mr. Waterhouse said in his article in THE LANCET[1]—namely, that the irritation to the surgeon and his assistants is much less if the iodine is dissolved in rectified spirit than if methylated spirit be the solvent employed. Chassevant used chloroform as a solvent, 30 parts of it dissolving 1 part of iodine, and I am inclined to think that this solvent would have some advantages. It is hardly necessary to say that it is essential that the part should not be washed before the iodine is employed, or if it is considered that washing is really necessary several hours should be allowed to elapse between the washing and the application of the iodine.

Mr. Waterhouse applies the iodine twice: first, two hours before the operation and then again immediately preceding the operation. I have thought it advisable to adopt this method in certain cases where the skin was in a very septic condition and many septic foci were present; but I have not found it necessary in the average "clean" operation, in which tissues are incised where no obvious sepsis is to be found, and I have been perfectly satisfied with the results. It is often, in my opinion, useful to wipe over the surface of the wound immediately after the operation, though if any lotion or even saline solution has been employed during the operation the iodine will have little penetrating power when subsequently applied.

The strength of the iodine solution requires, I think, a little further consideration; in some of my earlier cases I used a 4 per cent. solution, but it seemed to me that it had a very definitely harmful effect on the edges of the wound, and it exerted a slight retarding action on healing, and the same result was seen, though to a less extent, with a solution of iodine of the strength of the official tincture—namely, 2½ per cent. Later I used a solution weaker still—that is to say, half tincture strength, 1 in 80, or 1·25 per cent. I am sure this is amply strong for all ordinary cases.

A rather important question is how should the site of operation be shaved if iodine is to be used for the antiseptic. It is clear that ordinary soap cannot be used, otherwise the skin will be left in a condition exactly resembling that produced by washing, and the iodine solution will not be able to penetrate the epidermis. The use of solvent pastes which are much employed in America for removing the hair previous to operations is open to the same objection as ordinary soap and water, for the skin becomes sodden and will not permit the passage of the iodine. The method that seems to me to be the most convenient is to cut the hairs short with scissors and then to shave the part dry with a very sharp safety razor. By this means it is possible to get a very smooth surface without the use of any moisture. It is essential that the razor blade should be extremely sharp. It may be objected to this method that it is somewhat painful, but it need not be used until the patient is under the anæsthetic immediately before the iodine is

[1] THE LANCET, April 16th, 1910, p. 1063.

applied. Some surgeons have the part shaved several hours before the operation, so that there is time for the sodden condition of the epidermis to pass off before the application of the iodine, but this requires at least six hours or even 12 hours, and in this time some growth of hair will occur. Still, it is not a matter of much importance so long as an attempt is not made to apply iodine within a short time of shaving the part in the ordinary way.

Perhaps it is worth while to say a few words about colourless iodine. In all the various external applications of iodine attempts are often made to employ one of the "colourless iodines," and I only mention the point here in order to draw attention to the fact that colourless iodine has very little antiseptic power. Iodine is decolourised in several ways: by the use of any of the alkalies, by carbolic acid, by sodium thiosulphate, and by sodium sulphite, but in every one of these methods the iodine enters into combination, and thereby loses all or the greater part of the antiseptic power for which it is chiefly employed. For instance, if caustic potash is used potassium iodide and potassium iodate are formed and no free iodine is left, and it need hardly be said that neither the iodide nor the iodate of potassium has any great antiseptic power. Therefore, these "colourless iodines" are useless for sterilising the skin, and, in fact, they are of very little value for any purpose.

Harley-street, W.

# PULMONARY TUBERCULOSIS TREATED BY CONTINUOUS ANTISEPTIC INHALATION.

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IN the issue of THE LANCET of Nov. 19th, 1910, p. 1505, in commenting on an interesting article by Dr. David B. Lees on the above subject published in that number, you remark: "It would be interesting to know whether other physicians obtain the same results." In compliance with this suggestion I venture to send you an account of my own observations made some years ago on this method of treatment. So long ago as August, 1876, I read a paper at the annual meeting of the British Medical Association at Sheffield, in which I called attention to the value of antiseptic inhalations in the treatment of phthisis. I was then on the staff of the Brompton Consumption Hospital. In that paper I mentioned the curious circumstance that Dr. J. Copland had reported the case of "a young man who had repeatedly come under his observation in an advanced stage of phthisis and had recovered completely his health after he had been for a considerable period employed in the manufacture of creasote." Here there must have been an approach to "continuous inhalation." That excellent observer, Dr. A. E. Sansom, had also testified to the "real value of the dry inhalation of carbolised acid in phthisis." To refer again to Dr. Copland, in his "Historical Sketch of the Treatment of Pulmonary Consumption," he observes: "The inhalation of the fumes of tar or of creasote, or of the terebinthinates very weakly diffused in the atmosphere breathed by the patient, is in some cases beneficial in impeding the advance of tuberculosis, or the formation of cavities, and in healing the surfaces of cavities which have been formed"

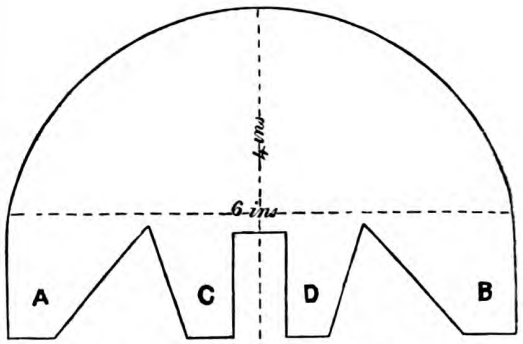
About that period Dr. (afterwards Sir) W. Roberts of Manchester described[1] a little respirator inhaler which he had devised for the inhalation of volatile antiseptics, and he testified that he had noticed benefit follow the use of these inhalants. He mentions cases of hæmoptysis in which the hæmorrhage ceased immediately on the use of inhalation of turpentine; also cases of phthisis with disease in both lungs and with very profuse purulent expectoration, in which the inhalation of creasote and iodine was of great apparent benefit; of laryngeal phthisis in which great relief followed the inhalation of equal parts of chloroform and olive oil. He had also found inhalations of the oil of eucalyptus of much value in relieving the cough and profuse expectoration in advanced phthisis.

[1] Brit. Med. Jour., Feb. 3rd, 1877.

In 1882 I again called attention to this subject in two clinical lectures I gave in King's College Hospital on "The Contagiousness of Pulmonary Consumption and its Antiseptic Treatment." These were subsequently published in a small volume which has been long out of print. Therefore, I may perhaps be permitted to quote from it here. After referring to Professor Jaccoud's treatise on the "Curability and Treatment of Pulmonary Phthisis," in which he testifies to the good effects of the internal use of creasote and the inhalation of a spray of carbolic acid, I describe a respirator inhaler for the continuous inhalation of antiseptic vapours which I had found to be extremely handy, light and convenient to wear, and very cheap. I described how they could be readily made.

You take a piece of paper about six inches long and four wide; you fold it along the middle, and cut it with a pair of scissors into this form. This is your pattern. (Fig. 1.) You place this on a piece of perforated

FIG. 1.




zinc, which costs about sixpence a square foot, and then, with a pair of stout scissors, you cut out a piece of zinc of the same size and form as the paper. By a little manipulation, for this zinc is very pliable, you can bring the two outer ends (A and B) together, so as to slightly overlap; and then, fixing them together with a twist of fine wire passed through the holes of the zinc, you get a suitable mouth-piece, or rather nose and mouth-piece, for it is important, I consider, to cover both nose and mouth. This can be bent to fit comfortably any face.

The two middle pieces (C, D,) now stick out behind, and, by gradually bending first one of these down, and then the other over it, you construct a little cage behind the mouth-piece which will hold a small bit of sponge, or a bit of tow or cotton-wool, or any suitable material for retaining the antiseptic vaporisable fluid. It is desirable to cover the rough edge of the mouth and nose-piece with some protecting material; a loop of elastic on each side serves to attach it behind the ears.

Messrs. Squire, of 413, Oxford-street, have now for many years made this little respirator inhaler, and in the form shown in the following figure (Fig. 2). This was immediately copied

FIG. 2.

The respirator in position.

in America in a slightly modified form by Messrs. Wyeth of Philadelphia, and it is described by Professor S. Solis Cohen in Hare's "System of Practical Therapeutics" as "one of the most useful as it is one of the simplest devices for the inspiration of medicinal vapours."

I go on to say that there are many antiseptic substances

the vapour of which may thus be continuously, or almost continuously, diffused into the air that is breathed.

Your choice may depend somewhat on the fancy of the patient, or you may change the applications, from time to time, until you find out in each case which is most useful.

Some simply keep the sponge moistened with carbolic acid, others prefer creasote, and others use spirits of turpentine. I have used all these alone as well as in combination. I have also used eucalyptol, thymol, terebene, oleum pini sylvestris, solution of tar in rectified spirit, tincture of benzoin, tincture of iodine, &c. Of all these I prefer creasote, but I also frequently use carbolic acid and eucalyptol. Turpentine is a useful addition as an astringent where there is profuse secretion or a tendency to hæmorrhage. I have also found it a very convenient plan to mix these substances, such as creasote, carbolic acid, eucalyptol, or turpentine, with equal parts of spirits of chloroform. It helps to diffuse and vaporise these substances and it is itself somewhat of an antiseptic, and it has also a soothing effect on the often irritable laryngeal and bronchial mucous membrane. A patient tormented with cough at night and unable to get any sound sleep will often obtain relief from this distressing symptom by using at bedtime one of these inhalations in an instrument of this kind. The quantity required for this purpose is often quite inconsiderable; it is rarely necessary to use more than twenty minims at a time of a mixture of equal parts of creasote and spirits of chloroform dropped on the sponge, and renewed occasionally as it becomes exhausted; and it is often desirable to begin with very small quantities, until the patient gets used to the vapour. One of the advantages of this little inhaler I have described is that, being perforated all over, the access of air is unimpeded, while the vapour diffuses itself freely into the immediately surrounding atmosphere.

I have adopted this plan of treatment in a number of cases, and in nearly all of them it has been attended with conspicuous benefit. Even in somewhat advanced cases it allays the cough, lessens the amount of expectoration, and diminishes the fever.

There is a young girl, 12 years of age, in the hospital now, an orphan with no obtainable family history, who was admitted three months ago in a wretched general condition, and apparently sinking from rapid phthisis. There was dulness all over the left side, with co-extensive moist crepitant and coarse râles; there was diminished resonance over the upper half on the right side, with diffused bronchial râles. The temperature was high and fluctuating, constant cough, much dyspnœa, loss of appetite, and great emaciation. She has been kept inhaling a mixture of equal parts of eucalyptol and spirits of chloroform; and, considering the miserable state in which she was on her admission, she has mended wonderfully. She coughs now very little, her appetite is good, she has gained flesh, and become quite cheerful. The moist sounds have completely disappeared from the right side, where the resonance is now good, and on the left side the catarrhal sounds have, to a great extent, disappeared, and the dulness is now limited to the upper lobe. She continues, however, to present a subfebrile fluctuating temperature.

I could enumerate a great many cases which have come under my care in which remarkable results have followed this method of treatment when it has been honestly and faithfully carried out. I wish to call your attention to the particulars of one such cure, in which, I must say, I have never seen better immediate results from this or from any other kind of treatment.

The patient was a married lady, 28 years of age, living in a low, damp locality, who had lost two brothers from consumption, one at 19 and the other at 23 years of age. She had had a cough for two years and had been losing flesh. She had been worse since her last confinement. Night sweats were constant, cough was troublesome, and expectoration abundant. Her voice began to be hoarse a fortnight ago, and was now nearly lost. Her appetite was bad. Pulse 112; respirations 20; temperature 101° F. She was considerably emaciated. There was some dulness over the left apex in front and behind, with moist clicks at the end of inspiration and some diffused largish crepitations on coughing. On the right side subcrepitant râles were heard over a spot just below the angle of the scapula, where there was also a patch of dulness. She was ordered to wear as constantly as possible one of my inhalation-respirators, charged with from 5 to 20 drops at a time of a mixture of equal parts of creasote and spirits of chloroform, so as to breathe an atmosphere only as strongly impregnated with the antiseptic as was quite comfortable to her. It was also agreed that she should remove to an isolated farm-house built on a hill 300 feet above the sea, between 30 and 40 miles from London, on the borders of Hampshire and Surrey, where there were pine woods and open heather country. She came to see me again after about three weeks, and she had improved immensely. The temperature had become normal; the night sweats entirely disappeared after a week of the treatment; her voice had returned after ten days; the cough and expectoration were greatly lessened. The dulness of the left apex was much less evident, but respiration there was feeble, and there was a distinct pleuritic creak in the left supraspinous fossa, a notable sign of past mischief in that region; all the moist sounds had disappeared. Her general condition had completely altered.

I had never seen a more striking improvement in so short a time under any plan of treatment or in any locality. But this patient had been unusually obedient to the instructions that had been given her. She had devoted herself at once and unhesitatingly to all the details of the treatment. She had removed immediately to an aseptic, if not an antiseptic, atmosphere; she had passed a great part of her time in a hammock suspended between fir-trees, in the situation I have mentioned, and she had perseveringly worn her inhaler as I had directed.

Dr. J. G. Sinclair Coghill, who was at that time physician to the Royal National Hospital for Consumption at Ventnor and had quite exceptional opportunities of testing this method of treatment of consumption, became a warm advocate of its adoption and devised a special respirator for the use of his patients, but it had the defect of only covering the mouth. He states that he had found "carbolic acid, creasote, and iodine, in combination with sulphuric ether and rectified spirits of wine, the most efficacious and satisfactory inhalant." In my "Manual of Medical Treatment" (Vol. II., Chap. IV.) I have given the names of many authorities who have testified in favour of this treatment, including Wilson Fox, McCall Anderson, Oertel, Solis Cohen, Dreschfeld, Semmola, Shingleton Smith, Mayo Robson, and others, and I have there given a detailed account of the method. I have been much gratified to see that it has now found so able and experienced an advocate as Dr. David B. Lees.

At one time, when I was on the staff of the Brompton Consumption Hospital, during which period more than 27,000 patients came under my care, I had very exceptional opportunities of applying and watching the various methods which had been advocated in the treatment of this widely spread malady; and I had formed, as I have said, a most favourable opinion of this method. But after the termination of my connexion with the Brompton Hospital these opportunities disappeared, and my studies in clinical therapeutics took and retained a more general character.

Cadogan-place, S.W.

## PERITHELIOMA (ANGIO-SARCOMA) OF THE GREAT OMENTUM; EXCISION.

BY W. GIFFORD NASH, F.R.C.S. ENG.,
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THE patient, a nurse, aged 43 years, on Jan. 1st, 1909, whilst lifting an old lady, felt something give way in her abdomen. On the 7th she came to see me complaining of pain and discomfort in the abdomen which had continued since the strain. She was a short stout woman, and examination of the abdomen showed nothing except some tenderness below and to the left of the umbilicus. I thought she had strained her left rectus muscle. On the 12th she had discomfort and flatulence. On the 16th I found the abdomen prominent, with evidence of a fluid swelling in the central portion. There was resonance in both flanks and along the transverse colon. The local condition suggested torsion of an ovarian cyst, with rapid increase of size. She was admitted to hospital on the 17th and next day the abdomen was opened in the middle line below the umbilicus. Eight pints of dark bloody fluid were evacuated. The pelvis contained several subperitoneal uterine fibroids, the largest of which was removed. Higher in the abdomen was found a soft fleshy mass which felt exactly like a placenta. This proved to be the great omentum, infiltrated with blood and oozing on the surface. There were no adhesions. The omentum was clamped in sections, ligatured with catgut, and removed from its attachment to the transverse colon. The stump left behind was thick and infiltrated with blood, and near the splenic flexure the peritoneum covering the colon presented an ecchymosed appearance. The wound was closed, and the patient quickly got over the effect of the operation. A week later a dose of castor oil was followed by hæmorrhage from the bowel. The stitches were removed on Jan. 27th, and on Feb. 4th the patient left her bed. On the 27th slight phlebitis occurred in the calf of the right leg, and on March 5th the same occurred in the left calf. On the 8th she complained of abdominal pain, and the recurrence of ascites led to a further operation on the 13th. The abdomen was opened above the umbilicus and a large quantity of blood-stained fluid was evacuated. The gastro-hepatic omentum was found to be in the same condition as that noticed in the great omentum at the previous operation. It could not be removed, and as blood was freely oozing the bleeding area was packed with gauze and the incision was partly closed. Death occurred on the 14th from continued hæmorrhage into the abdomen.

*Necropsy.*—At the post-mortem examination the abdominal cavity was found to contain a considerable amount of blood-stained fluid. There were numerous adhesions between the colon, liver, and stomach. The liver contained several nodules of growth scattered over its under surface. In the left lobe was a large growth. There were nodules on the descending colon, small intestine, diaphragm, right parietal pleura, and in both lungs. The gastro-hepatic omentum was

of a reddish colour and much thickened. The uterus contained numerous fibroids. The other organs were healthy.

The omentum removed at the first operation was exhibited at a meeting of the Obstetrical Section of the Royal Society of Medicine on March 11th, 1909, and referred to the Pathological Committee for examination. The report was that it contained a malignant growth of a peritheliomatous nature.

*Remarks.*—At the first operation I took the condition to be due to an accidental hæmorrhage into the great omentum caused by a strain. Acting under this impression, I showed the specimen at the before-mentioned meeting of the Obstetrical Section. No one present had seen anything like it, and it was not suggested that a malignant growth was present. It was, however, decided to submit the specimen to the Pathological Committee of the section. Before the committee met the patient underwent the second operation, and a post-mortem examination had revealed the secondary growths.

Primary sarcoma of the great omentum appears to be a very rare disease—in fact, text-books contain very little information on diseases and injuries of the omentum.

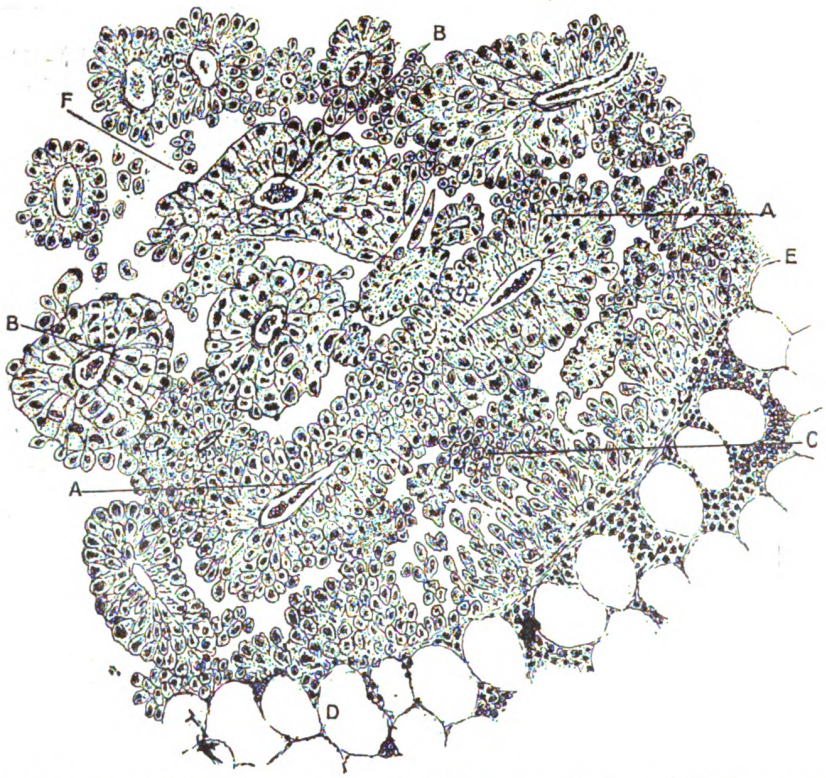
Dr. Farrar Cobb of Boston, Massachusetts, has reported a very similar case.[1] In his case the diagnosis was intestinal obstruction from malignant disease in the large intestine, presumably the sigmoid flexure. When the abdomen was opened bloody fluid gushed out, and a large, flat, spongy hæmorrhagic tumour presented itself in the wound. The incision was enlarged, and it became evident that the whole of the great omentum was much thickened and infiltrated with blood, its appearance being like that of a red bath sponge about one inch thick. A piece of omentum was excised, and nothing further was done. The patient lived for five weeks after the operation. The pathological report was: "A small piece of hæmorrhagic, necrotic-looking tissue, which was found to be composed of a solid mass of large round cells of varying size, among which were many mitotic figures. The blood-vessels were simply spaces hollowed out in the cellular growth. Large round-celled sarcoma." Dr. Cobb says:—

> The number of cases reported that have been accurately studied is very few, yet certain statements can be made as to the constant diagnostic symptoms and signs. There is no conclusive sign other than a palpable, flat, moveable tumour with or without signs of fluid in the abdominal cavity. From a study of the few similar cases reported, the symptoms and signs vary within wide limits, yet are mostly suggestive of chronic intestinal obstruction. In nearly all the onset of the disease was so slow that the tumour was felt as a flat or vaguely rounded mass before abdominal distension and constipation became extreme.
>
> In the majority of cases there is a long period of gastric symptoms, with malaise, loss of weight, vomiting, increasing constipation, alternating with diarrhœa and vague abdominal pain; then a tumour is felt in mid-abdomen, often a year or two before death. Fluid is then detected. In two cases bloody or dark stools are mentioned as having been seen.

When we consider my case, which was of the same nature as that recorded by Dr. Cobb, we must notice the absence of symptoms on which to found a diagnosis. There was dyspepsia for three months, then a distinct history of a strain which may have started bleeding from the omentum, already the seat of a malignant growth, followed by the comparatively early effusion into the peritoneum. No tumour could ever be felt through the thick abdominal wall. The patient did not lose flesh and was able to work until the day before the first operation. The condition of the omentum—soft, red, and oozing when touched, apparently infiltrated with blood—did not suggest a growth. This resemblance to a flat sponge full of blood I had never read of, and therefore did not recognise. The case ran an unusually rapid course, but the end was probably hastened by the operation, as relief of pressure allowed free oozing of blood from the growth.

The drawing of the microscopical appearance of the growth, for which I am extremely indebted to Dr. G. Harvey Goldsmith of Bedford, shows the typical radial arrangement of cells around the lumen of the blood-vessels. The omental fat is in places infiltrated with small round cells with darkly stained nuclei.

I can find very few references to perithelioma. Adami[2]




AA, Vessel cut longitudinally. BB, Vessel cut transversely. C, Closely packed masses of cells. D, Fat, infiltrated in places by darkly staining small round cells. E, Mesentery. F, Small isolated groups of cells.

[1] Annals of Surgery, 1906, vol. xliv., p. 16.

[2] Principles of Pathology, vol. i., p. 758.

says "that it is a striking form of tumour exhibiting capillary channels cut in various directions and lined by recognisable endothelium, around each of which capillaries is a collection of cells, many layers deep, arranged radially. The general opinion is that these cells gain their origin from the lymphoid endothelium of the perivascular space, that thus these tumours form one variety of lymphangio-endothelioma."

Bland-Sutton [3] has published an illustration of a case, and says that perithelioma is a sub-variety of the endotheliomata. Osler and McCrae [4] mention, amongst primary malignant tumours of the peritoneum, the occurrence of perithelioma (angio-sarcoma). They state that in some endotheliomata the microscopic appearances are confusing, in some parts resembling sarcoma and in others carcinoma.

Bedford.

## THE RELATION OF ACUTE PHOSPHORUS POISONING TO ACIDOSIS.

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IN this article I wish to emphasise the connexion of the secondary stage of acute phosphorus poisoning with acidosis. A distinction can be drawn between acidosis and acute acid intoxication, but this will not be discussed. The symptoms of acute phosphorus poisoning may be given briefly as follows:—

1. *Primary symptoms.*—Immediately on swallowing there is a disagreeable taste of garlic. Before the onset of symptoms there is a latent period with a duration of a quarter of an hour to upwards of two hours. Vomiting, with garlicky eructations, then commences. The vomit may be luminous. Purging usually occurs. There is no pyrexia. The usual symptoms of gastro-enteritis are present, and collapse and death may follow in a few hours from cardiac failure. If this rapid termination does not occur, the vomiting and purging subside, and about the third day the patient appears to be on the high road to recovery. There are cases on record in which the primary stage has been absent or very slight.

2. *Secondary symptoms.*—About the fourth day a fresh train of symptoms appear, the similarity of which to those of acute yellow atrophy of the liver has long been noticed. Vomiting is frequent. There is intense thirst. The pulse becomes small and feeble. Jaundice is early visible. In a short time the liver enlarges and is often extremely painful. This enlargement may, however, be absent. A tendency to hæmorrhage is present. The urine becomes scanty, and usually contains acetone and diacetic acid. Leucin and tyrosin may be present. There is great weakness, and delirium and loss of consciousness precede death, which in this stage is almost invariable.

*Post-mortem examination.*—When death occurs in the primary stage the stomach and intestines show signs of inflammation, and ulceration may be found. A peculiar smell is noticed and the contents of the stomach may be luminous, or even the whole body. No other changes are generally present which can be ascribed to phosphorus. No sign of phosphorus is usually found in the body on analysis when death has occurred more than three days after taking the poison. When death has occurred in the secondary stage all tissues of the body show extreme fatty degeneration. The liver shows changes similar to those found in acute yellow atrophy. It may, however, be enlarged. Leucin and tyrosin can be obtained from it. The stomach and intestines show but slight change beyond fatty degeneration. Hæmorrhages and petechiæ are common, as in all cases of advanced jaundice.

*Nature of the secondary symptoms.*—The primary symptoms may be ascribed to the irritant action of phosphorus and will not be further referred to. The secondary symptoms are not uncommonly stated to be a "recurrence" of the primary stage. The vomiting which occurs at the beginning of both stages may have established this view. The most prominent secondary symptoms are vomiting, epigastric pain, thirst, jaundice, and the presence of acetone and diacetic acid in the urine.

From a consideration of these in association with the post-mortem appearances the condition can be attributed to acidosis, of which the phosphorus is either the cause or the *causa causans*. It may be noted that diabetic coma is ushered in by epigastric pain, anorexia, and nausea. There is a marked similarity between delayed chloroform poisoning and the secondary stage of phosphorus poisoning. Thus there is a period of several days before the onset, and the symptoms and post-mortem appearances are similar. For these reasons one is justified in attributing the two conditions to a similar pathological state of the tissues, and we may classify together the second stage of phosphorus poisoning, acute yellow atrophy, delayed chloroform poisoning, the toxæmic vomiting of pregnancy, and other conditions undoubtedly associated with acidosis.

*The action of phosphorus.*—The toxic powers of phosphorus were formerly considered to be due to the withdrawal of oxygen from the tissues. The amount of oxygen necessary to oxidise a fatal dose is, however, very small, and this view is no longer held. The result of the process of oxidation is the important point. Phosphoric acid is very powerful and is nearly as strong as hydrochloric acid. The oxidation of phosphorus after absorption would result in the presence of this acid in the blood and tissues. Hutchison found that sodium di-hydrogen phosphate was the most powerful practical drug for acidifying the urine. I have been unable to find any instance of poisoning with phosphoric acid or symptoms resulting from an overdose.

*Treatment of the secondary stage of phosphorus poisoning.*—The measures employed in treatment of acidosis should be adopted. The injection of normal saline solution and the administration of alkalies should be commenced as soon as the vomiting and purging of the primary stage subside.

The presence of excess of acids in the tissues in the later stages of phosphorus poisoning has, of course, been previously noticed. Thus Meyer found the alkalinity of the blood to be diminished, and ascribed this to the excess of lactic acid in the body resulting from insufficient oxidation. Munzer in 1891 and 1892 examined the urine in ten cases of acute phosphorus poisoning, and found a high percentage of ammonia-nitrogen. In two cases he gave sodium bicarbonate and noted the reduction in this percentage, as must, of course, necessarily occur. The treatment was apparently tried for experimental purposes, in order to observe its effect on the excretion of ammonia. It was not persisted with, nor was it employed in a subsequent case. This was before much attention had been given to acidosis. Possibly other cases have been treated with alkalies, but I have not been able to find any record of such.

A close connexion between poisoning by phosphorus and arsenic is often assumed to exist. In acute arsenical poisoning there is no occurrence of a secondary stage, and post mortem no changes are found in the liver resembling acute yellow atrophy or phosphorus poisoning. There is no evidence that fatty degeneration occurs to any extent, except in the alimentary canal, in cases of uncomplicated poisoning with arsenic. Thus there is no reason to believe that acute arsenical poisoning has any relation to acidosis, and no evidence that chronic forms are connected with it.

Harley-street, W.

[3] Cancer Clinically Considered, p. 20.
[4] System of Medicine, vol. v., p. 591.

## NOTE ON A CASE OF DIGITALIS HEART-BLOCK.

BY E. E. LASLETT, M.D. VICT., B.SC. LOND.

FROM experimental work it is well known that digitalis depresses conductivity in heart muscle. The demonstration of this effect in man is due to Mackenzie.[1] It is occasionally noticed that after digitalis has been administered for some days the pulse becomes irregular and shows intermissions. The intermissions have been shown to be due to the falling out of ventricular contractions owing to the failure of conduction of the stimulus from the auricle. Mackenzie states that this action of digitalis is obtained only when there is already some delay in conduction (which may be only slight) as shown by a lengthening of the *a.-c.* interval in the jugular venous pulse. This occurs particularly in subjects who have

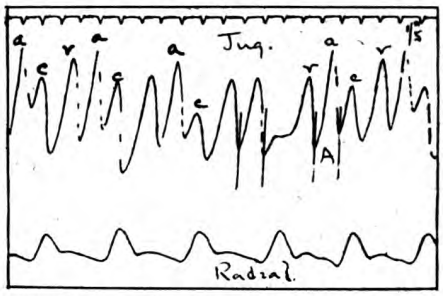
[1] Deutsche Medizinische Wochenshrift, 1904, No. 24.

had rheumatic fever. In patients with normal conductivity and intact *a.-v.* bundle digitalis remains without effect on the conductivity. This difference from experimental results is probably due to the fact that the amount of digitalis given to human beings is comparatively small, and its exhibition cannot be pushed beyond a certain stage by reason of its irritating effect on the alimentary canal.

It is not yet precisely known in what way digitalis acts on the function of conductivity in heart muscle, whether through the medium of the vagus nerve or directly on the muscle fibre itself. It undoubtedly produces one of its effects by its action on the inhibitory centre. It is in this way that it is able to diminish the frequency of the heart-beat. Mackenzie [2] reports a notable case of mitral stenosis in which digitalis, besides slowing the heart in the usual way, produced very long pauses—on one occasion for nearly four seconds—in which the whole heart was arrested. In this case, although there was damage to the *a.-v.* bundle and delayed conductivity, this was not further affected by the action of digitalis; in fact, the *a.-c.* interval was diminished after the long pauses.

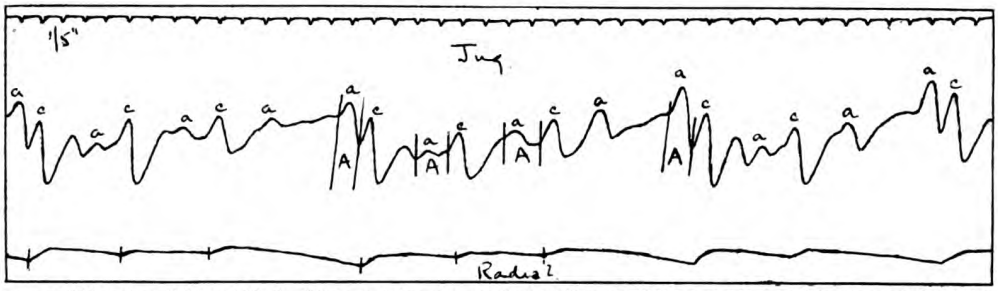
I have had under my care a patient in whom I produced partial heart-block by the administration of digitalin, and certain observations made during this period tend to show that in this case at least the heart-block was produced through the medium of the vagus nerve and not by direct action on the muscle. The patient was a woman, aged 40 years, who had mitral regurgitation as a result probably of an attack of rheumatic fever at the age of 20. The lesion appeared to be fairly well compensated, but there were attacks of violent palpitation. There was some degree of anæmia, and probably as a result partly of this and partly of the valvular lesion the field of cardiac response was somewhat limited. A jugular venous tracing taken in October, 1908, showed a large auricular wave indicating, perhaps, some loss of cardiac tone. The *a.-c.* interval at this time was slightly more than one-fifth of a second, with a pulse-rate of about 75 per minute (Fig. 1). There was thus a slight delay in conductivity. Digitalin granules were prescribed, one to be taken twice daily. No particular effect was noted until the eleventh day, when it was found that the pulse was intermittent, a beat being dropped after every second or third period, usually after every second. It will be seen from Fig. 2 that there is a gradual lengthening of the *a.-c.* interval until conduction fails altogether and a ventricular contraction falls out (Fig. 2). If now the patient swallowed once there were four normal pulse periods before an intermission occurred. If two or possibly three swallowing acts were performed in quick succession the intermissions temporarily disappeared. The pulse remained regular for nine periods of a slightly increased frequency (a rise from 75 to 82 per minute). Then two intermissions occurred in succession, and the previous rhythm was resumed. The appearance of two intermissions in succession (a 2 : 1 rhythm) was also noticed on several occasions after a single swallowing act. The venous tracing (Fig. 3) is somewhat marred by the muscular movements, but it shows fairly clearly that during the period of increased frequency caused by swallowing, conductivity is somewhat improved, as shown by the *a.-c.* interval, and that it is not until just at the end of the period that the interval lengthens and then the intermissions follow.

FIG. 1.



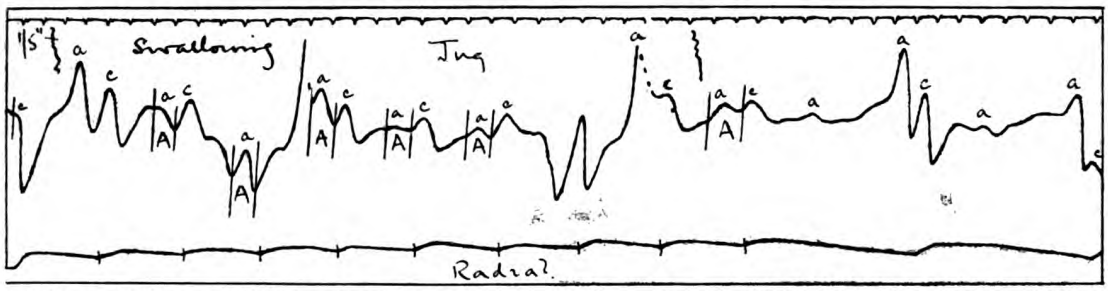

The normal venous pulse. The *a.-c.* interval is slightly more than one-fifth second.

FIG. 2.




Shows a condition of partial heart-block. The *a.-c.* interval gradually lengthens until it is equal to two-fifths of a second and then the ventricular contraction fails.

FIG. 3.




During swallowing, conductivity is somewhat improved, as shown by the *a.-c.* interval which does not lengthen until the end of the period of increased frequency.

Such a result seems to indicate that in depressing conductivity in the *a.-v.* bundle the digitalin is acting through the medium of the vagus nerve. It is well known that sipping quickens the heart beat, probably by a reflex diminution of vagal tone. Hence it would seem that the depression of conductivity, and consequent dropping out of ventricular contractions, is dependent upon increased vagus tone due to

[2] Diseases of the Heart (London, 1908), p. 342.

the action of digitalin. Indeed, if the action in this case were really on the muscle fibres themselves one would expect that an increased auricular rate would lead to an increased grade of heart-block because the conducting fibres would then have less time to recover than before. The occurrence of a temporary 2 : 1 rhythm after both a single and successive swallowing acts is of importance. It indicates a temporary depression of conductivity to a greater degree than before, and must be due to a subsequent increased vagal tone.

Mackenzie [3] has published the case of a man with mitral and tricuspid murmurs, in whom there was a depression of the function of conductivity. In this patient digitalin produced mild heart-block. A few days after the digitalin was withdrawn the pulse became regular, but swallowing caused ventricular silences after three normal beats. This condition continued for a week. Mackenzie believes that it arose through reflex stimulation of the vagus nerve, and from the analogy between the effects of digitalin and swallowing it indicates that the drug acts through the medium of the inhibitory centre and not directly on the heart muscle. I have tracings taken from an anæmic woman in whom I was able to produce partial heart-block by tincture of digitalis. In this case a day or two after the drug was withdrawn, and when the pulse had become regular, two or three swallowing acts performed in succession caused the pulse to intermit, but only after a temporary increase of rate. A single act of swallowing was inefficient. There was no history of rheumatism, and the peculiar sensitiveness of the heart to the action of digitalis may have been due to malnutrition. Since that time, although there has been little general improvement in the patient, I have never again been able to produce heart-block.

Hull.

## THE TECHNIQUE OF INTRAVENOUS INJECTION OF EHRLICH-HATA PREPARATION "606."

BY OTTO GRÜNBAUM, M.D. CANTAB., D.SC. LOND., F.R.C.P. LOND.,

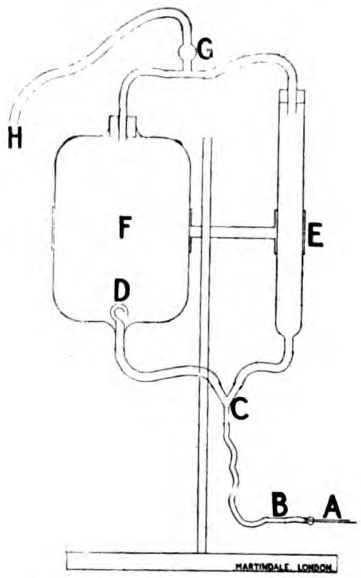
ASSISTANT PHYSICIAN TO THE LONDON HOSPITAL, ETC.

THROUGH the kindness of Professor Ehrlich I have been afforded opportunity of studying the effects of the preparation "606." My interest lies in diseases produced by the spirochæta pallida other than chancres and skin lesions, and it is chiefly to cases suffering from disease of the central nervous system that I have administered the drug. Professor Ehrlich's warning must be obeyed, and only very early cases treated. It is not my intention to take this opportunity of recording my results, but to give details of one of the methods of introducing the preparation into the body. My experience was similar to that of other observers, in that neurasthenic patients complained of pain for many weeks after the injection when this was made into the gluteal muscles. This was one of the reasons for my adopting intravenous administration of the drug which is painless.

The apparatus which I have used consists of a transfusion needle (A), connected by a short piece of rubber tubing to a piece of glass tubing (B), this in turn by a long piece of tubing to a three-way tube (C). An ordinary clip is placed between B and C. The other arms of the three-way tube are connected to the two vessels (E and F). F is of 400 c.c. capacity and should be calibrated. The outlet from the lower end of the vessel (F) should be similar to that in the diagram, in order that any small heavy particles, such as minute fragments of glass, cannot pass out of it. This, it is true, leads to the waste of a few cubic centimetres of the solution; in the apparatus I use this amounts to three cubic centimetres. E is a smaller narrower vessel. Clips are placed between C and F, and between C and E. The vessels are closed above by rubber corks, through which tubes pass to connect to the three-way tube (G). In G there is a filter of cotton-wool, and from it passes a tube connected to small hand-bellows. The object of this somewhat complicated apparatus is to permit of the injection of a small quantity of normal saline solution first, in order to be certain that the needle is in the vein.

[3] Brit. Med. Jour., 1906, vol. ii., p. 1110.

The details are as follows. The whole apparatus, including tubes, &c., is boiled. On removing it from the steriliser the vessels are corked and clips are placed upon the tubes, and the apparatus is kept until wanted. Hot normal saline solution is poured into the vessels. Clips C D and C E are removed, and the needle (A) is held as high up as the tubing will permit. Clip C B is removed, and the needle is




gradually lowered until saline solution runs through it; all the clips are then fixed. This ensures the tubes being emptied of air. In spite of this it is advisable to keep an eye on B during the injection, and to stop it should any bubble of air appear.

The solution is then prepared: the outside of a tube of "606" is sterilised after having notched it with a file. The contents are shaken into a sterile stoppered bottle of 60 c.c. capacity. If the contents of the tube appear to have formed into granules, and do not present the appearance of a fine yellow powder, it will probably prove to be useless for intravenous injection. The powder is dissolved in 20 c.c. of warm sterile distilled water. When solution is complete a half-normal solution of pure sodium hydrate is added drop by drop. A precipitate is thrown down, which dissolves on the addition of more sodium hydrate. However carefully the soda solution is added, the resulting solution is more alkaline than absolutely necessary. A sterile 10 per cent. solution of glacial acetic acid is added until a faint haze appears, and then a drop or two of a sterile tenth-normal solution of sodium hydrate until the solution is quite clear.

This solution is poured into the vessel F, in which there is not less than 250 c.c. of normal saline solution. All solutions should be made with distilled water; this, of course, applies to the normal saline solution. Occasionally on pouring the solution into the saline solution a cloudiness appears, which may disappear on the addition of a drop of the dilute sodium hydrate solution. If the precipitate persists the solution is useless and must not be used.

The skin of the patient in the region of the bend of the elbow is purified, and a bandage is passed once round the upper arm and twisted tight. When the veins are distended the needle is passed into one of them and the bandage removed immediately. Clips C E and B C are removed, and then the level of the fluid in E is seen to fall. If there be no swelling in the region of the point of the needle it is obvious that the needle is in the vein, and the injection of the drug may be proceeded with. Clip C E is fixed, and clip C D is removed. If the flow is too slow the air pressure in F may be slightly increased by compressing the hand bellows once or twice. When the vessel is almost empty clip C D is fixed, and clip C E is removed in order to wash out the vein with normal saline solution. The needle is removed, and the puncture is dressed with collodion and gauze.

The patient should remain quiet in bed for 24 hours.

During this time vomiting and diarrhœa may occur, but usually are of short duration. The patient is able to return to work 48 hours after the injection.

Portland-place, W.

## RAW MEAT AND RAW MEAT JUICE IN THE TREATMENT OF CONSUMPTIVE DISEASES (ZOMOTHERAPY).

BY J. HERICOURT, M.D.,

MEDICAL SUPERINTENDENT OF THE PARIS MUNICIPAL ANTI-TUBERCULOUS DISPENSARY AT JOUYE-TANIÈS.

IT is now some years since Professor Ch. Richet and the writer called attention to the remarkable effects of a diet of raw meat in enabling animals that had been inoculated with tubercle to resist infection, and in spite of the technical difficulties inherent in the administration of raw meat in any form to human beings the method has been tried and our conclusions confirmed by numerous observers; in fact, raw meat has become a recognised and important factor in the treatment of pulmonary and other forms of tuberculosis, as well as in anæmia, chlorosis, and similar states of *misère physiologique*.

As soon, however, as we endeavour to administer raw meat to human beings we are confronted with various difficulties, for the meat must be perfectly fresh or the pulp will be offensive, and the preparation of the pulp entails the expenditure of much time and trouble. Then, too, the amount that must be ingested in order to obtain the therapeutical effects is rather large, though satisfactory results have followed a minimum of half-a-pound a day. Lastly, many patients are unable, or at any rate unwilling, to take raw meat in any form, so that the treatment becomes inapplicable; moreover, the habitual ingestion of raw meat entails a certain liability to tænia, although, as a matter of fact, the risk is small, and if the worst comes to the worst the parasite is easily dislodged.

Subsequent researches, undertaken in conjunction with Professor Richet for the purpose of ascertaining which was the active constituent in muscle tissue, showed the specific elements to be contained exclusively in the muscle juice. We found, for example, that the solid components of flesh had no therapeutical action; indeed, tuberculised animals fed on flesh from which the muscle plasma had been expressed died in approximately the same lapse of time as the control animals, whereas the administration of the expressed juice to similarly tuberculised animals prevented infection taking place, for not only did they not fall ill, but they remained in particularly robust health, there being a substantial increase in weight after an interval of several weeks. Moreover, when the muscle juice was given to animals actually under the empire of tuberculous infection the emaciation ceased and they were restored to health, while the control animals died. It is obvious, therefore, that the efficacy of raw meat resides in the muscle serum—i.e., the meat juice—and it is equally clear that the effects are in no wise due to mere overfeeding because the proportion of nitrogen contained in 1000 grammes of muscle plasma only amounts to 4 grammes, roughly corresponding to 25 grammes of albuminoids. It follows that the recovery of dogs fed on a daily allowance of from 50 to 100 cubic centimetres of muscle juice could not be due to hyperalimentation, since by far the greater part of the nutritive principles remained in the expressed meat which proved unavailing in any quantity to prevent, or even delay, the fatal termination. To this method of treatment, based on the administration of raw meat juice as a remedial agent rather than as a food, we applied the name *zomotherapy*, from Ζωμός, meat juice.

Cooking destroys the organic principles to which the action of raw meat is due, and forced feeding with cooked meat has no action in delaying the course of the infection. This must be clearly borne in mind, because the various products described as "liquid meat," "meat juice," "meat extracts," &c., are all prepared from cooked meat, and, however valuable as foods, possess none of the therapeutical properties which we have shown to be inherent to raw meat.

A further advantage attending the use of raw meat juice is that it is free from the drawbacks which have been mentioned in connexion with the administration of the meat itself. The juice is easy to take and the amount to be ingested is comparatively small. Moreover, the taste is not unpleasant, is easily masked, and the risk of tænia is non-existent.

There remains, it is true, the technical difficulty of preparing raw meat juice economically and perfectly fresh. The first can be in great measure overcome by the employment of sufficiently powerful presses by means of which the proportion of expressed juice can be raised from 25 per cent. (which is the average yield with ordinary domestic presses) to 40 and even 50 per cent. There remains the difficulty of obtaining perfectly fresh meat, and this is one of the greatest importance, because meat juice is eminently unstable, so much so that its appearance changes within an hour of its separation, and it soon develops toxic properties which render it unfit for human consumption. To begin with, the juice must be expressed as soon as possible after the animal has been slaughtered—two or three hours in summer and four hours in winter. Then, too, the juice must be collected in a vessel surrounded by ice and consumed as soon as possible. No doubt these requirements make the treatment a troublesome one, and it is also somewhat expensive, but *qui veut la fin veut les moyens*, and its efficacy is such that it is very largely employed.

Our original researches were undertaken for the purpose of discovering a means of arresting tuberculosis, and the experimental and clinical results of the employment of *raw* meat and *raw* meat juice are as constant as they are remarkable. It is probably no exaggeration to say that the raw meat treatment of pulmonary phthisis yields results not approached by any other means at present available. Nevertheless, the benefits of zomotherapy are by no means limited to tuberculosis. Raw meat juice is of the greatest service in the various forms of anæmia and chlorosis, in typhoid fever, neurasthenia, rickets, and scurvy rickets, during convalescence, after hæmorrhage—in fact, whenever it is desired to reinforce the defensive apparatus of the organism and repair the ravages of disease.

There is, of course, no reason why the administration of raw meat pulp as a highly nutritious and digestible food should not be associated with the therapeutical employment of a muscle plasma; indeed, by adopting this plan we obtain the maximum advantages attending this method of treatment. It must, however, be borne in mind that to be efficacious the zomotherapeutic treatment entails the daily ingestion of at least the amount of muscle juice contained in 300 grammes of beef in mild cases and of 500 grammes and upwards in bad cases. Smaller quantities are no doubt productive of benefit, but cannot be relied upon to yield characteristic results. The inconclusive results reported here and there have been due to neglect of this cardinal principle, though it is only fair to add that one does meet with a few cases, usually those associated with secondary infections, which prove refractory.

The employment of raw meat juice for therapeutical purposes is based on purely empirical data, and we are not in a position to offer any scientific explanation of its action. At the time when we carried out our early experiments the theory of antitoxins had just been elaborated, and naturally enough the quasi-specific action of muscle plasma in tuberculosis was attributed to the presence of some antitoxic substance. Bearing on this hypothesis is the fact that tuberculosis never invades muscle fibre, and the well-marked muscular atrophy that occurs in phthisical subjects suggests the possibility of the muscles having been sacrificed in the defence of the organism. On the other hand, the presence in the raw juice of enzymes, ferments, and diastases which play such an important part in nutrition and in the struggle against infections may conceivably account for the activity of muscle plasma. It may be, of course, that muscle juice acts merely as a special stimulant of the nervous system. The slight but quite characteristic exhilaration that follows the ingestion of somewhat large amounts of muscle plasma militates in favour of the theory of nervous stimulation, and the good effects of zomotherapy in affections other than tuberculosis, neurasthenia, for instance, admits of a similar explanation.

Dr. Henry Percy Potter, medical superintendent of the Kensington Infirmary, has been presented by the staff with a silver coffee service on the completion of 30 years of office

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### NOTE ON A CASE OF MUMPS IN WHICH ATTACKS OF EPIDIDYMITIS OCCURRED ON EACH SIDE IN TURN, EACH ATTACK BEING ACCOMPANIED BY SYMPTOMS PROFOUNDLY INVOLVING THE NERVOUS SYSTEM.

BY SIDNEY PHILLIPS, M.D. LOND., F.R.C.P. LOND.,
SENIOR PHYSICIAN, ST. MARY'S HOSPITAL AND LONDON FEVER HOSPITAL; PHYSICIAN, LOCK HOSPITAL.

A MAN, aged 23 years, an army officer, was attacked by mumps in March, 1905. The left parotid gland was affected, and while the pain and swelling in it were subsiding the left epididymis became painful and enlarged. At the same time there was a rigor, the temperature rising to 104° F., and the patient became violently delirious, shouting and endeavouring to get out of bed. I saw him the next day; the delirium had passed off, but he had lapsed into a condition of deep stupor, seemingly quite deaf. He was not quite unconscious, showing signs of irritability when efforts were made to rouse him. There was retention of urine. His pulse was very rapid and small, his breathing laboured. The tongue and lips were very dry, and his breath was horribly fœtid. The skin was clammy; the extremities were cold; the temperature was 103°, but he seemed much collapsed.

The family were naturally alarmed, but remembering Trousseau's description of somewhat similar cases I was able to reassure his father—a medical man. The patient was given some calomel and a hypodermic injection of strychnine. On the next day he was better and he continued to improve. But five days later I was called again to see him for a recurrence of the symptoms. The right parotid had swelled up and his delirium, fever, and tendency to stupor had returned. I found that the right epididymis had now begun to be swelled and painful. After a few days all his symptoms lessened and he eventually got quite well.

*Remarks.*—Trousseau[1] narrates two cases illustrating the alarming symptoms which may accompany epididymitis following on mumps—one of a man, aged 35 years, who with the onset of the epididymitis became alarmingly ill, "with a countenance of inexpressible anxiety, face pale and pinched, pulse small, rapid, and irregular, and extremities cold"; the second case was that of a youth, aged 17 years, who was seized with acute symptoms "resembling those of the bad days in the third week of putrid fever." Trousseau also alludes to cases previously recorded by Boisieri.

My friend Mr. Mitchell showed me his notes of his case, and I have thought the record of my case might be of interest side by side with his. They both exemplify the very severe nervous disturbances which may arise with epididymitis after mumps. In his case an additional point of interest was the occurrence of epididymitis in an undescended testis; and in my case there was noteworthy: (1) the involvement of each epididymis in turn, on the same side as the parotid was affected; and (2) the separate attacks of delirium and stupor concurrently with each attack of epididymitis.

Upper Brook-street, W.

### A CASE OF ACUTE ORCHITIS OCCURRING IN AN UNDESCENDED TESTIS AFTER AN ATTACK OF EPIDEMIC PAROTITIS, AND ASSOCIATED WITH ACUTE DELIRIUM.

BY W. S. MITCHELL, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE ACTING GOVERNMENT MEDICAL OFFICER, GRENADA, B.W.I.

WHILE acting as medical officer of No. 2 District in Grenada, British West Indies, I was called up one night to sign up a patient who was supposed to have gone mad. The patient, a negro labourer, aged about 33 years, was in an acutely maniacal condition. He was lying in bed, restrained by three powerful men. I had the greatest difficulty in approaching him, as he bit, fought, and spat at me in a most terrifying manner. The only history I could obtain from his friends was that he had been in that condition for three days, previous to which he was apparently quite well, except for an "attack of the mumps" the week before, and that he had a "little fever." He had followed his usual occupation, which was of an extremely arduous nature. He had vomited once the previous day, and his bowels were "fairly regular," but he was dirty in his habits. He declined to take any nourishment. I found it impossible to approach him for some time, and owing to his extreme violence the hovel was in great danger of collapsing upon us, as it began to sway to and fro in a most ominous and threatening manner. After about an hour he quieted down a little, and I found his pulse was rapid but regular, and of moderate tension. The temperature in the axilla was 104° F. The lips were tremulous and dry, the eyes were bright and staring, and the pupils were dilated but reacting to light. The patient would not speak or put out his tongue. The heart was dilated and the lungs were normal. The abdomen was flat. The spleen was not enlarged. The left rectus was rigid and some tenderness was present on pressure below and to the left of the umbilicus. The right rectus was quite flaccid. Nothing could be felt in the left inguinal canal, but the patient resented this examination most forcibly, whereas he did not object to the right canal being examined. There was no discharge from the penis. On examination of the scrotum I found that the left testicle was undescended and could not be felt; the right was present and normal. The latter part of the examination was carried out under great difficulty, owing to the pugilistic efforts of the patient.

Morphia (½ grain) was administered hypodermically, and this quietened the patient, so that it was found possible to get him to take a little milk, in which was a powder consisting of calomel, gr. v., and pulv. jalap co., ℥ss. Hot poultices were ordered to the abdomen. On my visit the next day the patient was very much better, and no longer needed restraining. He told me he had some pain in the lower part of his abdomen, and that his memory was "not too good," but otherwise he felt fairly well. His temperature was 100°, the pulse 110, and his tongue was dry and furred. The left rectus was less rigid, but there was still tenderness on examination of the left canal. The patient could give no history of any injury. The hot poultices were continued, and a quinine mixture was ordered. His diet consisted of milk and eggs. On the fourth day I found the patient walking about in front of his hut, apparently in the best of health, and he informed me he intended turning out to work on the following day. I subsequently made inquiries and was told that he did go out to work, and that he had since enjoyed good health.

*Remarks.*—There are several points of interest in this case. The occurrence of orchitis in mumps is a well-recognised complication, but for the condition to occur in an undescended testicle must be almost unique. It will be noted that there was an interval of about a week between the parotid affection and the testicular complaint; this is in accordance with the usual sequence of events when the testis is affected. This interval rendered the diagnosis less obvious in the case under consideration. The fever, severe pain, rigidity of the left side of the abdomen, and vomiting might readily have led to the diagnosis of some acute inflammatory affection of the abdomen if the position of the testis and the history of the illness had not been taken into consideration. This rare condition must therefore be added to the list of affections requiring differential diagnosis in cases presenting acute abdominal symptoms. The occurrence of delirium in mumps is an occasional happening, but acute mania following the disease must be excessively rare. As far as the writer knows only one case has previously been recorded (that is, the one referred to in Osler and Macrae's "System of Medicine"). The swelling and pain in the testicle when affected in mumps usually last four or five days. In this case the patient was quite well within a week from the onset of the acute symptoms.

Grenada, British West Indies.

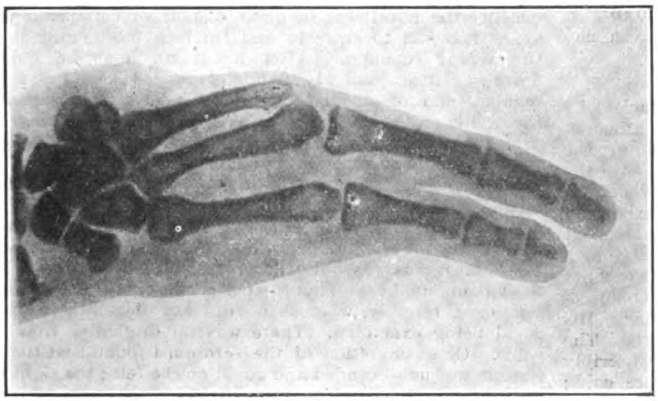
[1] Lectures on Clinical Medicine, Sydenham Society's Transactions, vol. ii., p. 277.

## CLOVEN FEET AND HANDS.

BY JOHN BELL, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H., SUPERINTENDENT, GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

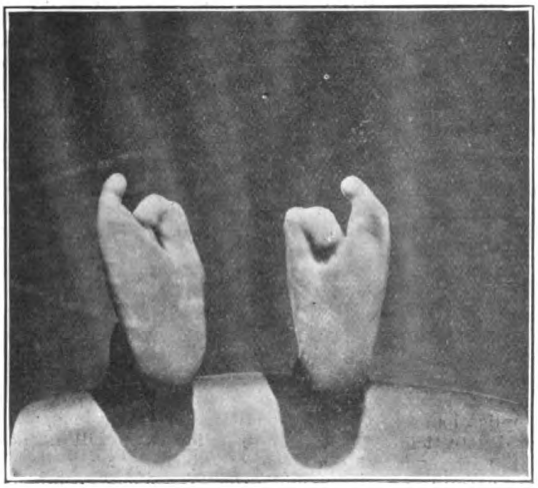
THE accompanying pictures illustrate what I believe to be a rare congenital malformation, and they may therefore be of interest. The subject was a Chinaman, aged 26, who was sent to us at the Civil Hospital, Hong-Kong, as a curiosity. Except for his hands and feet he was normal in all ways,

FIG. 1.



Reproduction of skiagram of right hand; the skiagram of the left hand showed similar deformity.

FIG. 2.



Reproduction of photograph of feet, the hooked halluces bein very marked.

and, indeed, a good specimen of his class. No family history as to similar or other deformities could be obtained. He was able to use his chopsticks between his fingers in a most dexterous manner.

Hong-Kong.

## THE TREATMENT OF BASIC MENINGITIS BY THE INUNCTION OF IODOFORM OINTMENT.

BY HAROLD MOWAT, M.D. EDIN.

I WAS interested in reading up the subject of meningitis to find a reference in THE LANCET of Sept. 30th, 1905, by Mr. H. C. Wilson to the value of inunction of iodoform ointment into the neck in a case of tubercular meningitis. The writer claimed that he had treated a case of this deadly disease successfully by this means, and, while admitting that the diagnosis of "tubercular" might possibly be incorrect, stated that all the symptoms of the case pointed to such an origin. It occurred to me that it would be useful to try the inunction in cases of ordinary basic meningitis of the toxæmic variety, as our ordinary remedies have never proved very efficacious, the mortality from the disease being extremely high. Within the last few months I have been successful in two cases, and believe that the satisfactory results were largely due to the inunction.

The first case was that of a boy, aged 9 years, who contracted measles. When the rash had disappeared a temperature of 103° F. remained, and the boy complained of severe frontal headache and stiffness of the neck. His neighbours were kept awake during the night by his shrieks, which were of the typical meningeal type. These passed off in two days and were replaced by constant moaning. He took no notice of his surroundings, except when sharply spoken to, when he replied to questions in a dazed fashion. He was very sick. *Tache cérébrale* was well marked, the muscles of the neck were rigid, while Kernig's sign was also present. As soon as I was told of the screaming I suspected the onset of meningitis and made up an ointment containing 15 grains of iodoform to the ounce of vaseline, which I instructed the parents to rub thoroughly into the back of his neck and posterior part of his scalp night and morning. I also gave him small doses of potassium iodide and bromide. Within the week his symptoms were greatly relieved and his temperature had fallen. Since then he has been in perfectly normal health.

The second case was that of a girl 3 years old, whom I treated quite recently. She was taken ill with severe diarrhœa and vomiting, attributable to the eating of a sausage on the previous day. Under treatment the diarrhœa soon disappeared but the sickness continued. She uttered the meningeal cry and afterwards moaned. She took no notice of anyone except when she was spoken to. Her temperature rose to 102° F. Her tongue was clean. *Tache cérébrale* was present. Kernig's sign was apparent on the fourth day. She squinted and showed marked extensor reflex of the big toes. On the sixth day she sank into a comatose state. I treated her in the same manner as the former case, but when the state of coma was reached I was compelled to tell her parents that I considered the case hopeless. On the eighth day she woke as from a natural sleep, spoke to her parents, and showed every sign of recovery. Since then she has had no relapse. Although I told her mother to apply the iodoform ointment twice a day she afterwards informed me that she had done so four times within each 24 hours.

Personally I have now a good deal of confidence in this method of treatment, and believe if it were more largely used our mortality from meningitis would be lessened.

Bromley-road, S.E.

## A CASE OF FISTULA OF THE LACRYMAL SAC.

BY S. CHURCHILL, M.A., M.B., B.C. CANTAB., HOUSE SURGEON TO THE ROYAL ISLE OF WIGHT COUNTY HOSPITAL, RYDE; LATE HOUSE PHYSICIAN TO ST. THOMAS'S HOSPITAL, LONDON.

THE accompanying illustration shows a unilateral fistulous opening whereby the right lacrymal sac communicates with the exterior by a channel other than those afforded by the canaliculi and the naso-lacrymal canal.

The patient is a married woman, aged 26 years, who was sent to the ophthalmic department as a case of lacrymal obstruction. Mr. H. J. May examined her. He was unable to squeeze any mucus or pus from the sac through either punctum and asked me to confirm this by syringing the canaliculi. This I did and noticed that the fluid issued as a jet from the region of the lacrymal sac. At first I thought this was due to the presence of obstruction causing the fluid to return through the upper punctum. But on closer examination I found a minute opening in the skin over the lacrymal sac, skirted by a semilunar fold and admitting the point of a Nettleship's canaliculus dilator. A piece of

horse-hair pushed into the opening (as in illustration) passed for a length of 3 inches down into the nose. Fluid injected by either the upper or the lower canaliculus is partly voided from the nose and throat and partly from this opening.

Referring to J. H. Parsons's "Pathology of the Eye," vol. iii., Part I., p. 906, the following words on the subject of fistulæ occur: "They have been attributed to arrest of

development, and minimal failure of the fissura facialis to close (Harman). This may be true of some cases, but they are probably more often of inflammatory origin. There is usually blennorrhœa of the sac. Adler attributes the fistula to arrested development and the blennorrhœa to fœtal inflammation, an unnecessary complication." As there is no evidence in this case of blennorrhœa, I conclude that this is a presentation of the morphological variety.

Ryde.

# Medical Societies.

## UNITED SERVICES MEDICAL SOCIETY.

*The Development of the Army Medical Service.—Pruritus Ani.*

A MEETING of this society was held at the Royal Army Medical College on Dec. 14th, 1910, Surgeon-General W. BABTIE, V.C., C.M.G., being in the chair.

Lieutenant-Colonel M. W. H. RUSSELL, R.A.M.C., opened a discussion on Recent Tendencies in the Development of Army Medical Services. He pointed out that under modern conditions it had become impossible for wounded men to be removed from the fighting line till dark, or at any rate till there was a lull in the fire; the wounded at the front could only be collected in "nests" and treated by the regimental *personnel* till this happened, and so there was a general tendency in most armies to increase the efficiency of the regimental aid by improving training and increasing the regimental supply of appliances. He suggested that in our army the water *personnel* should be made available for regimental aid during action, since their duties in connexion with water were in abeyance at that time; also that we might well follow the example of Germany, France, and Austria in making the regimental bearers devote their whole time to their bearer duties, and thus become not only more efficient but entitled to the protection of the Geneva Cross. The speaker then discussed the uses and organisation of collecting stations for lightly wounded, which are established five or six miles behind the firing line, and which occupy themselves not only in attention to lightly wounded men, so relieving the dressing stations, but also in the care of those unfit to go into action and in the collection of improvised transport. Lastly, he drew attention to the very considerable changes in arrangements which were likely to follow the more extended use of mechanical transport in war.—Lieutenant-Colonel C. H. BURTCHAELL, R.A.M.C., thought it would be impossible to combine the duties of water men and first aid. He also thought it impracticable to send lightly wounded direct from the regiments to the collecting station; in the Japanese army these men passed through the dressing station.—Major C. F. WANHILL, R.A.M.C., protested against the diversion of water men from their legitimate duties.—Colonel A. PETERKIN, A.M.S., doubted if one collecting station for a division would be sufficient on account of the distance from the flanks.—Surgeon-General BABTIE called special attention to the alterations necessitated by the employment of mechanical transport.—Surgeon-General G. J. H. EVATT, A.M.S. (retired), Lieutenant-Colonel A. P. BLENKINSOP, R.A.M.C., and Lieutenant-Colonel H. D. ROWAN, R.A.M.C., also took part in the discussion.—Lieutenant-Colonel RUSSELL, in reply, pointed out that in action everything, even sanitation, must be subordinated to the defeat of the enemy, hence his recommendation to utilise the water men for first aid at this time. As the collecting station was five or six miles in the rear there was no need to duplicate these establishments.

Major W. E. MILES, R.A.M.C., T.F., read a paper on Pruritus Ani. He was of opinion that it should more properly be labelled "dermatitis ani." He considered that it was not of nerve origin since most cases yielded to local treatment, but that it usually arose in patients with a gouty or eczematous diathesis, and that of the exciting causes rectal constipation was the most prominent. Treatment consisted in local applications of hot water, sedative and astringent ointments and powders, and in the removal of the exciting cause, especially rectal constipation.

Major T. W. GIBBARD, R.A.M.C., showed a case of Extensive Syphilitic Ulceration of the Head and Face which had resisted the usual treatment but which healed promptly after injection of "606." The demonstration was accompanied by photographs of the condition before and after treatment.

## LIVERPOOL MEDICAL INSTITUTION.

*Miscellaneous Business.—Operations for Varicose Veins.—Ehrlich-Hata Remedy for Syphilis.*

A MEETING of this institution was held on Dec. 22nd, 1910, Dr. T. R. BRADSHAW, the President, being in the chair.

In reply to a communication from the Education Committee addressed to the secretary the following resolution was passed:—

The members of the Liverpool Medical Institution are absolutely opposed to any plan by which school children found on inspection by the school medical officer to be defective receive treatment by the voluntary hospitals. They are also of opinion that the fee proposed by the local education authority for the correction of defective vision is inadequate.

Mr. R. E. KELLY read a note on the Operations for Varicose Veins. He gave an account of the historical evolution of the various methods of operative treatment and then described Mayo's operation, which he had performed recently about 12 times with excellent results.—Mr. K. W. MONSARRAT read a note on the same subject. He considered that no standard operation was suitable to all cases; that as reflux from deep to superficial veins was the main cause of varicosity in the latter, it was of the first importance to ascertain where this reflux was occurring. On this investigation depended the choice of operation. There were three types of operation: (1) simple resection of the internal saphenous close to its termination; (2) resection confined to varicose branches below the knee; and (3) total saphenectomy.—Mr. W. THELWALL THOMAS, Mr. RUSHTON PARKER, and Mr. G. P. NEWBOLT all considered that there were some cases which no operation would cure.—Mr. THOMAS said that usually some modification of the Trendelenburg operation was the best. In Trendelenburg's original description the saphena was ligatured at the junction of the middle and lower third of the thigh or a little lower. Mr. Thomas found that this was not always satisfactory, and in 1896 recommended in the *Liverpool Medico-Chirurgical Journal* that the vein should be tied near to the saphena opening.—Mr. NEWBOLT mentioned the case of a patient in whom the operation promised to be very

successful, and was so for four years, but after that time the varicosities returned in greater degree than ever.

Dr. R. STOPFORD TAYLOR and Dr. R. W. MACKENNA communicated a paper on the Ehrlich-Hata Remedy for Syphilis. They pointed out that the last five years had been full of great advances in their knowledge of syphilis, and referred to the work of Schaudinn, Neisser, Metchnikoff, and Wassermann. They then described the history of the use of the arsenical derivatives in the treatment of syphilis—Donovan's solution, atoxyl, arsacetin, hectine, and arsenophenylglycin, "418." Three years ago Ehrlich pointed out that the arsenic in atoxyl was fixed, not to the amidogen group, but to the benzine nucleus. This was the first step which led to the discovery of "606." The chemical formula of "606" was described, and the great danger of oxidation unless the preparation was mixed immediately before use was mentioned. Dr. Taylor and Dr. MacKenna recommended the method of Michaelis for preparing the powder, but considered that the intravenous injection was incomparably superior to intramuscular injection. They detailed the effects of the remedy on some syphilitic lesions and these were extraordinary. The primary sore became smaller in 48 hours, and the secondary symptoms disappeared in about a week. Mucous patches in the throat disappeared in 36 to 48 hours. Tertiary ulcers of the pharynx and periosteal nodes lost their painfulness in 24 hours after one full dose. The remedy acted by a powerful lethal effect upon the spirochæta, the protoplasm of which contained chemo-receptors which had a special affinity for "606," and also by the liberation of endotoxins from the spirochætes thus destroyed, which brought about the production of antibodies. That antibodies played a part was shown by the fact that syphilitic babies nursed by their mothers got well, but no arsenic was found in the milk. The dangers of the administration were pointed out, but when Ehrlich's directions were followed the mortality had been only 1 in 1000. Optic atrophy had occurred in only 1 out of between 20,000 and 30,000 cases. The remedy might be of use in pachymeningitis and gummatous infiltration. A number of cases treated by Dr. Taylor and Dr. MacKenna, including some under the care of Mr. Arthur Evans, were then referred to. The most remarkable was that of a man, aged 30 years, who developed syphilis in April, 1910. When seen he had numerous mucous patches on the tonsils and soft palate with glandular enlargement and pain on swallowing. He received an injection of 0·6 gramme intravenously. Within 24 hours he could swallow without pain, and in 48 hours the mucous patches had completely disappeared. Another case was that of a man, aged 25 years, with a chancre on the lip and a macular rash, who received 0·45 gramme intramuscularly. In one week both the rash and the chancre had disappeared. Dr. Taylor and Dr. MacKenna concluded with a tribute to the genius of Ehrlich, and expressed the opinion that in the new remedy they had a unique weapon against syphilis.—Mr. ARTHUR J. EVANS then gave details of seven further cases in which he had used the remedy, the result in each case being the rapid disappearance of the signs of the disease. Constitutional symptoms were often marked but transitory.—Several questions were asked and these were replied to.

## LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

*Exhibition of Cases.*

THE first clinical meeting of the session was held on Dec. 16th, 1910, Dr. J. DOBSON being in the chair.

Mr. A. L. WHITEHEAD showed a case of Wound of the Eye, Frontal Sinus, and Cerebrum, caused by a pellet from an air-gun. The eyeball was ruptured and was therefore excised; the fragments of bone splinters were removed from the frontal sinus and the roof of the orbit. A skiagram showed that the pellet had broken into two pieces; one was removed, but the other could not be found. Subsequently an attempt was made to remove this portion, using the X ray screen, but without success, the bullet still remaining in the frontal portion of the cerebrum.

Mr. H. SECKER WALKER showed a case of Electric Cataract caused by severe burning of the face by electricity (3000 volts). Several plastic operations had been done for the relief of the deformity produced by cicatrisation.

Dr. A. G. BARRS showed a woman, aged 26 years, who had suffered from Cerebral Tumour with two years' history of symptoms—headache, vomiting, optic neuritis, and convulsive attacks. Three weeks prior to the operation sight had suddenly failed almost completely. On Oct. 26th a decompression operation was performed; a trephine hole two inches in diameter was made beneath the left temporal muscle; the dura mater was not opened. By Nov. 21st headaches and vomiting and fits had entirely ceased. There was great improvement in vision and the optic neuritis was clearing up. Power of walking, which had been lost, considerably returned. On Dec. 16th improvement was still maintained.

Mr. B. G. A. MOYNIHAN showed a case in which Transgastric Resection of an Ulcer on the posterior wall of the stomach had been performed. The patient, a female, aged 51 years, had suffered from "indigestion" since the age of 16. Pain came on within half to one hour of taking food, and was always worse on the left side along the costal margin and up to the breast; vomiting relieved the pain. An operation was performed on Nov. 18th last. A large ulcer was found on the anterior surface of the stomach, adherent to the anterior abdominal wall. On the posterior surface of the stomach there was a large ulcer adherent to the tail of the pancreas. The anterior ulcer was excised, and through the opening so made the posterior ulcer was excised and the cavity in the pancreas closed by suture.

Mr. WALTER THOMPSON showed: 1. A case of Trigeminal Neuralgia treated by injection of alcohol in a patient aged 62 years. The neuralgia was of four years' duration, following extraction of a left upper molar tooth. Pain was increasing and was paroxysmal in character. The patient had been operated upon on Sept. 19th, under cocaine, alcohol (80 per cent.) being injected into the nerve at the foramen ovale and the infra-orbital foramen. Considerable improvement had resulted. 2. A case in which Hernia of the Small Intestine had occurred into the lesser peritoneal sac. In 1909 gastro-enterostomy was done at another hospital. On April 25th, 1910, the abdomen was opened because of persistent vomiting. A considerable amount of the small intestine had passed through an opening in the posterior layer of transverse mesocolon; the opening would admit the hand. The intestine was reduced, and the margin of the opening stitched to the line of gastro-enterostomy junction. On Sept. 22nd symptoms recurred, and the abdomen was again opened. The upper foot of jejunum was found adherent, kinked, and obstructed. The adhesions were freed and lateral anastomosis was done.

Dr. A. BRONNER showed a case of Glaucoma treated by trephining the sclera at the corneal margin, and by cyclodialysis (Fergus's operation). In this case a previous iridectomy and posterior sclerotomy had failed to relieve the tension, which was now considerably improved.

Dr. E. F. TREVELYAN exhibited: 1. A case of Stationary Muscular Atrophy limited to the hands. The patient, a female aged 24 years, showed considerable wasting and corresponding paralysis of the small hand muscles. Nutrition and power of the forearms and arms were perfect. There were numbness and diminished knee-jerk in the left leg. The present state was the same as when the patient was shown to the society six years ago. 2. A woman aged 32 years with marked habit spasm affecting the head. Improvement had taken place under electrical and exercise treatment.

Mr. J. F. DOBSON showed a boy, aged 19 years, who had sustained a Fractured Base with Cerebral Compression for which an intermusculo-temporal decompression operation was performed. He was admitted into the infirmary on May 2nd, 1910, having fallen from a ladder. Symptoms of fracture of the base of the skull were present, with very severe cerebral compression. At the operation a fracture of the vault running down into the base of the skull was found, with extra-dural and intra-dural hæmorrhage. Removal of clots and drainage of the subdural space were performed. Cerebral irritation was present for some days after the operation. The patient still complained of some headache and dizziness.

Dr. W. H. MAXWELL TELLING showed: 1. A man who had had an Acute Arthritis of one joint from oral sepsis. He was first seen on August 31st, 1910, and then had marked swelling of the right wrist-joint of five weeks' duration, with

much œdema, pain, and thickening affecting the right wrist and carpus. There was no gonorrhœa or previous joint affection. The mouth, which was full of carious stumps and in a very septic condition, was treated antiseptically. Guaiacol carbonate was given internally and the teeth were extracted, with immediate and rapid improvement of the joint condition. By Nov. 9th, all acute inflammation disappeared, only a little stiffness of the joint remaining. 2. A woman, aged 39 years, who had had Pernicious Anæmia of the severest type and who had made a marked recovery. She was admitted into the infirmary on August 6th, 1910, with a history of pernicious anæmia of four years' standing, with relapses. On admission the attack had lasted 14 weeks, and she was extremely ill, being jaundiced, very anæmic, vomiting almost all food, and having retinal hæmorrhages and dilated heart. Blood showed the changes typical of pernicious anæmia. August 8th: Red cells, 1,112,500; hæmoglobin, 40 per cent.; colour index, 2. The patient was treated with arsenic and cacodylate of soda but got worse, and her case was regarded as hopeless. Sept. 15th: It seemed impossible that she could live many days. Blood: red cells, 600,000; hæmoglobin, 30 per cent.; colour index, 2·5. Shortly after this she began to improve markedly. Oct. 5th: Red cells, 2,150,000; hæmoglobin, 50 per cent.; colour index, 1·1. At the convalescent hospital she continued to improve. Dec. 12th: Discharged, being of fair colour, able to walk about, though somewhat weak. Blood: red cells, 3,600,000; hæmoglobin, 85 per cent.; colour index, 1·2; stained film showed nothing abnormal.

Mr. REGINALD WILSON showed a case of Ruptured Intestine and Abdominal Wall. The patient, a youth, sustained an injury in which the intestine was ruptured and extruded through a rent in the abdominal parietes. The skin over the rent alone held; the gut lay immediately under it in a pool of fæces. Enterectomy was performed.

Mr. R. LAWFORD KNAGGS exhibited a series of cases of Fractures into Joints and Fractures Treated by Lane's Plates.

Mr. G. CONSTABLE HAYES and Dr. M. J. STEWART showed a Villous Papilloma of the Naso-pharynx Invading the Nasal Cavities.

Other cases were shown by Dr. L. A. ROWDEN, Dr. T. CHURTON, Mr. H. COLLINSON, Dr. J. GORDON SHARP, and Mr. MICHAEL A. TEALE.

## NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

*Exhibition of Specimens.—Impacted Ureteric Calculus.*

A MEETING of this society was held at Manchester on Dec. 16th, 1910, Dr. W. K. WALLS, the President, being in the chair.

Dr. FRANCES IVENS read notes and showed specimens of the following cases: 1. Localised Adenomyoma in a Tuberculous Fallopian Tube removed from a young married woman complaining of dysmenorrhœa and dyspareunia. The right tube was generally thickened with a nodule at the uterine end. Microscopically the tube showed typical tubercles. The nodule was composed of adenomyomatous tissue also showing giant cells and round-celled proliferation. Reference was made to the two similar cases described by Von Franqué and Parsons and Glendining. 2. Keratinising Adeno-carcinoma of the Uterus removed from a spinster aged 41 years. Dr. Pantland Hick investigated the tumour microscopically and found the growth to present in the older portions the appearance of a squamous carcinoma with cell-rests, but the glandular origin was evident in sections taken from the growing edge. 3. Chorion-epithelioma of the Uterus preceded by vesicular mole, and associated with unusual nervous symptoms. The mole, retained for seven months, was removed from a multipara aged 47 years. Involution took place, but two months later the uterus had enlarged, and profuse hæmorrhage occurred. Rigors and an elevated temperature took place three days before operation. After hysterectomy, on Oct. 3rd, 1909, severe shock was present, the temperature fell to 95° F., and stupor developed, followed by convulsions, ptosis, loss of sphincteric control, and increased tendon reflexes. Gradual recovery took place, but the illness was a blank in the mind of the patient. She went home weak, but otherwise well and able to walk. Two months later contractures developed and death took place in January, 1910. The cause of the cerebral symptoms was undetermined as no necropsy was obtainable. It was possibly toxæmia followed by encephalitis and cerebral softening, as the gradual onset negatived a metastatic embolus and no definite symptoms of cerebral tumour were present.

Dr. A. J. WALLACE showed an Enlarged Uterus removed from a woman aged 67 years. Before operation its upper border reached 10 inches above the pubis, and it measured 9¾ inches transversely. The enlargement had been noticed for three months only. On examining the tumour after removal it was found to be apparently a mere shell of uterine wall containing altered blood. The anterior wall had an average thickness of ¼ inch, the posterior of ¾ inch. Complete section of the "shell" demonstrated a layer of undoubted myomatous tissue of varying thickness in the posterior wall and an apparent thin layer of similar tissue in front. There was no trace of the cavity of the corpus uteri, except near the internal os, where a few flattened glandular elements suggested the remains of endometrical glands. The condition had had its origin from a myoma which had become cystic; hæmorrhage had occurred into the cyst, the resulting distension of which had produced obliteration of the endometrial cavity and enormous enlargement of the senile uterus.

Mr. R. FAVELL reported a case of Impacted Ureteric Calculus which had clinically simulated a uterine fibroid. It was discovered after the body of the uterus, which contained several small fibroids, had been removed. The left ureter was found dilated to the size of the forefinger and an impacted stone could be felt near the entrance to the bladder. The stone was removed and several ounces of purulent fluid allowed to escape from the ureter, which was then ligatured at the level of the pelvic brim. The lower end of the ureter was drained into the vagina by splitting the cervix. The kidney was markedly enlarged and lobulated. The patient made a good recovery, and later no enlargement nor tenderness of the kidney could be detected. The history showed that for three years before the birth of her first child (13 years ago) she had severe pain in the left side; but after the birth of the child the pain ceased, and did not recur until one year ago. Since then it had been steadily increasing, and for a month it had been very severe. There had never been any urinary symptoms beyond the scalding and occasional attacks of increased frequency of micturition.

Dr. W. E. FOTHERGILL exhibited: 1. Pregnancy complicated by Red Degeneration and Infection of a Fibroid. 2. Large Cyst of Uterine Origin with Fibroids.

Dr. T. B. GRIMSDALE showed: 1. Perithelioma of Uterus. 2. Sarcoma of Uterus.

Dr. W. BLAIR BELL exhibited: 1. Lutein Cyst of Ovary. 2. Torsion of Ovarian Cyst and Fallopian Tube.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF MEDICINE.

*Cœliac Axis Aneurysm treated by Operation, Introduction of Wire Tent.—Thrombosis of the Superior Mesenteric Vein.*

A MEETING of this section was held on Dec. 16th, 1910, Sir JOHN W. MOORE, the President, being in the chair.

Dr. JOHN LUMSDEN showed a man, aged 38 years, who had been engaged at a somewhat heavy class of work. There was a history of syphilis 16 years ago. Dyspeptic symptoms had been present since the beginning of the year. Abnormal epigastric pulsation was first noticed last August on his admission to Mercer's Hospital. In September last a tumour of the size of an orange was felt in the epigastrium, extending upwards under the left costal arch. Impulse was of a forcible and expansile character. A bruit was heard below the lump and conveyed along the aorta to both femorals. The femoral pulses were to be felt readily. The heart was normal but for accentuation of the aortic second sound. Blood pressure in radial artery was 110 mm. Hg. No pain. The diagnosis was saccular aneurysm of the aorta, probably from the neighbourhood of the cœliac axis. The patient was placed on large doses of

iodide of potassium, complete rest in the recumbent position with a modified Tufnell's diet being enjoined. No improvement taking place, after consultation with Mr. W. I. de C. Wheeler, operation was decided upon.

Mr. WHEELER described the evolution of surgery of the abdominal aneurysm. The patient exhibited resembled the vast majority in being a male, having a specific history, and having the aneurysm springing from the region of the cœliac axis. Mr. Wheeler had operated seven weeks ago and had introduced into the sac 150 inches of gilded wire in the form of a cage by the method of Colt and D'Arcy Power. For the first few days the aneurysmal pulsation was more tumultuous than before the operation, but since then there had been a distinct diminution of pulsation and hardening of the tumour.—Dr. WALTER G. SMITH and Dr. T. PERCY C. KIRKPATRICK discussed the case.—Dr. H. STOKES inquired as to the collateral circulation set up.

Dr. LUMSDEN, in reply, said that medical treatment of aneurysm in the past had been distinctly unsatisfactory. He had himself had four cases under his care—three men and one woman. The woman died suddenly six months after diagnosis, and no cause of death was discovered. One of the men died suddenly three months after diagnosis.

Mr. WHEELER, in reply, said that death was the result in nearly every case without operative treatment. The post-mortem examination, in cases where operation had been done, showed not a soft clot but a laminated clot, sometimes consolidated altogether, so that he did not see how the operation could be regarded as unscientific. Collateral circulation was well established, though by what means he did not know. No cases published, without operation, showed any cures; while there had been cures in every series with operation, so that he thought the operation was undoubtedly justifiable.

Mr. J. J. BURGESS read an account of a case of Thrombosis of the Superior Mesenteric Vein. The interest in this case was the comparative mildness of the abdominal symptoms and the prominence of those of a cerebral type, so that the finding at the necropsy was a surprise. The very few cases of primary thrombosis of this vein were referred to. The case was acute and terminated fatally in eight days with gangrene of portion of the jejunum. The marked feature was the early development of coma and the partial recovery from, and return to, that state, with symptoms of cerebral compression, evidently toxæmic.—Dr. H. C. DRURY, Dr. SMITH, and the PRESIDENT discussed the case, and Mr. BURGESS replied.

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NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 21st, 1910, Mr. W. Morley Willis, the President, being in the chair.—Dr. Ernest H. M. Milligan read a paper on Cerebro-spinal Fever. He described the signs and symptoms, diagnosis, and treatment, &c., of the disease, giving his observations on over 300 cases seen during the epidemic in Belfast in the City Fever Hospital, Purdysburn. Statistics were given of the frequency of the different signs and symptoms, the mortality rate in relation to age of those affected, the age incidence of the disease, and also the results of treatment by Flexner and Jobling's serum. The diagnosis was carefully gone into, stress being laid on the mode of onset. In all cases lumbar puncture was advised and the estimation of the opsonic index, as in doubtful cases the diagnosis can be settled by these means, the opsonic index being of great use after the sixth day of the disease; the fallacy of the Widal reaction as diagnostic from typhoid fever or typhus fever was noted. The great benefit derived from the use of Flexner and Jobling's serum was described and Dr. Robb's latest returns were given, the death-rate being 27·5 per cent. in 109 cases injected with serum. Dr. Robb's comparison of the death-rates outside hospital without serum with those inside treated with serum was considered of great importance, there being a reduction in the mortality of the difference between 85·2 per cent. and 26·6 per cent. in favour of the serum. Taking everything into account, Dr. Milligan considered that a reduction of the mortality by about 40 per cent. could be obtained by use of the serum. In the course of the paper the following conclusions were arrived at: 1. That owing to the occurrence of mild cases and toxic cases without meningeal symptoms the disease may be unrecognised unless lumbar puncture be done and the blood examined. 2. That the disease is spread largely by carriers and mild cases as well as by acute cases. 3. The search for these carriers and mild cases was advised to prevent spread of the disease. 4. That the intestinal mode of entry of the disease was probable. 5. That Flexner and Jobling's serum was of very marked value and should be given early. 6. The opsonic test was useful in diagnosis after the sixth day. 7. That sudden death after apparent recovery was always a possibility.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A joint meeting of this society and the Bradford division of the British Medical Association was held on Dec. 20th, 1910, Dr. W. Mitchell, the President, being in the chair. The following specimens and cases were shown:—The President: Some cases from the X ray department.—Dr. C. F. M. Althorp: (1) Case of Epithelioma of the Chin and Lower Lip operated upon three years ago; (2) specimen of Polypus of the Small Intestine causing Intussusception; and (3) specimen of Fibroid Uterus removed by abdominal hysterectomy.—Dr. A. Bronner: A case of Choroido-Retinitis simulating Retinitis Pigmentosa in a boy 8 years old with good vision.—Dr. T. Jason Wood: Specimens of (1) Fibroid Uterus and Broad Ligament Cyst removed by abdominal hyterectomy; (2) Calculous Kidney; (3) Malignant Growth of the Upper Jaw (Dr. Bronner's patient); (4) Scirrhus Cancer of the Breast with unusual amount of Ulceration of the Skin; and (5) Extra-uterine Gestation (Kaiserling preparation).—Dr. H. J. Campbell: Liver, Spleen, and Stomach from a case of Ascites in which death occurred suddenly.—Mr. T. Wilmot: Kidneys from a case of Puerperal Eclampsia.—Dr. F. W. Eurich: Cases of (1) Thomsen's Disease; (2) Cardiac Infantilism; (3) Tabes in an old woman; and (4) Psychosis of Peripheral Neuritis. He also demonstrated a Clinical Method for the Detection of Blood.—Dr. A. Little and Mr. Goyder: Three cases after Decompression Operation for Intracranial Tumour: (1) tuberculous tumour in the region of the internal capsule; (2) tumour of pituitary body; and (3) tumour in the posterior cranial fossa.—Mr. Goyder: (1) Five cases after operation for Cleft Palate; (2) Five cases after operation for Hare-lip; (3) specimen of Gangrenous Small Intestine removed from a case of Strangulated Umbilical Hernia; and (4) specimen of Prostate removed by Young's Perineal Method.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Dec. 2nd, 1910, Mr. F. Lace, the President, being in the chair.—Mr. Donald Ackland read a paper on Oral Sepsis, showing that many obscure illnesses and pathological processes are frequently the result of, or are secondary to, septic conditions of the mouth, nose, and nasal sinuses, the gastro-intestinal tract and glands opening into it becoming infected from oral, nasal, and auditory suppurative processes, deformities such as arthritis and tenosynovitis in many instances being but symptoms of the primary trouble—the oral sepsis. Of the conditions included under this heading pyorrhœa alveolaris and its treatment by the vaccine method was more especially discussed.

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THE ROYAL SANITARY INSTITUTE.—A provincial sessional meeting will be held at Bradford on Feb. 3rd and 4th, 1911. The members will meet at the Town-hall, Bradford, at 2.30 P.M., and proceed to visit the open-air school at Thackley. In the evening a discussion will take place in the council chamber of the Town-hall on "School Clinics." The chair will be taken at 7.30 by Dr. Louis C. Parkes, chairman of the council of the Institute, and the debate will be opened by Dr. L. A. Williams, medical superintendent to the Bradford education authority. The following have consented to take part in the discussion: Dr. J. R. Kaye, Dr. S. G. Moore, Dr. E. M. Smith, Dr. A. E. L. Wear, and Dr. Ralph P. Williams. On Feb. 4th members will meet at the Town-hall, Bradford, at 9.45 A.M., to inspect the school clinic, after which a special tramcar will be in readiness to take them to see the municipal dairy at Heaton. In order to prevent disappointment it is essential that those wishing to be present at the visits should notify Dr. W. Arnold Evans, Medical Officer of Health, Health Department, Town-hall, Bradford, or the Secretary of the Institute, not later than Jan. 27th, so that proper arrangements may be made in due time. Tickets for admission of visitors, who are invited to intervene in the debates, may be had on application to the same gentlemen.

# Reviews and Notices of Books.

*A Handbook of the Surgery of Children.* By E. KIRMISSON, Professor of the University of Paris, Surgeon to the Hospital for Sick Children, &c. Translated by J. KEOGH MURPHY, M.C. Cantab., F.R.C.S. Eng., Surgeon to the Miller General Hospital for South-East London, Senior Assistant Surgeon to the Paddington Green Children's Hospital. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 822. Price 20*s.*

BOOKS which give to the student a superficial veneer of knowledge sufficient to enable him to emerge successfully from examinations, and teach no lasting or profitable lesson, whose aim is to include in the smallest bulk the greatest possible amount of material, when they have served their immediate purpose are done with and forgotten. Such treatises, states Professor Kirmisson, suit neither his taste nor his years. We therefore turn expectantly to find within his volume lessons that are really useful both to the medical student who is anxious to acquire sound principles for the practice of his profession and to the practitioner. The author's aim has been to paint a picture in which the principal facts will be found among the high lights, and in the shadows all that is of less importance. The translator has endeavoured faithfully to reproduce the distinguished author's opinions as well as his words, not attempting in any way to alter the text, but adding footnotes where an explanation or addition seemed necessary. And we may say at the outset that the two great subjects which dominate infantile surgery—namely, malformations and diseases of the locomotor system—are very fully treated, and on such conditions as appendicitis, mastoiditis, diseases of the throat, intussusception, &c., a sound practical knowledge of surgery is inculcated, that knowledge which is so much more required in the treatment of these conditions than exceptional skill in operative surgery.

The work is divided into four parts, dealing respectively with surgical affections of congenital origin, injuries in childhood, inflammatory lesions and disorders of nutrition, and tumours. In a short appendix to this, the English edition, Dr. Cecil Hughes has added notes on the production of anæsthesia in children which should be of use both to the surgeon and anæsthetist. Surgical affections of congenital origin are dealt with in regional sequence. Preceding the description of the congenital malformation of each region is a short and lucid account of the development of the part and a statement of the embryological considerations that arise. In cases in which satisfactory results are known to have followed particular surgical procedures the methods are given for surgical cure, but the author does not hesitate to state his disagreement with those who advocate craniectomy for microcephaly, and other proceedings which experience has shown are purely theoretical and futile. All the well-known and accredited plastic operations are fully described, and this part, as well as the rest of the book, is profusely illustrated with drawings of classical types, the object being to make descriptions intelligible rather than depict particular cases. The treatment of club-foot is fully described and illustrated, the author favouring the treatment in two stages as originally recommended by Adams, and for cases of long standing with severe bony malformations he has devised a modification of Phelps's operation of mid-tarsal arthrotomy. For congenital dislocation of the hip the method of Lorenz has now proved itself efficacious and safe in many hands. The author gives a moderately full description of a bloodless method. The technique of the application of the plaster apparatus for fixation of the limbs in full abduction is one which has the most important bearing upon the final result of the operation. It is therefore a surprise to find on p. 272 of the book a figure depicting a plaster sheath which extends above to the level of the ribs and below to midway between the knee and ankle, thus entirely preventing the alternate flexion and extension of the knee-joint each day which is mentioned by the author as being necessary. In those cases in which the patients have passed the age for which the bloodless method is available the author rightly points out the need for care in recommending raising of the foot, which in loose joints is productive of great harm.

Part II. deals with injuries in childhood, which are first considered generally and then in detail. A very full and particular account is given of injuries involving the elbow-joint, and sound principles of treatment are inculcated. Under this heading are included the cicatricial results of burns and foreign bodies in the auditory and respiratory passages. Inflammatory lesions and disorders of nutrition occupy over 400 pages, and are dealt with in 12 chapters as follows: (1) Osteomyelitis; (2) Tubercle of the Bones and Joints; (3) Rickets and Other Defects of Development of the Skeleton; (4) Syphilis of the Bones and Joints; (5) Deformities which are the Result of Affections of the Nervous System; (6) Middle-ear Disease and its Complications; (7) Affections of the Pharynx and Nasal Fossæ; (8) Inflammation of the Cervical Glands; (9) Maladies of the Thorax; (10) Abdominal Affections; (11) Affections of the Anus and Rectum; and (12) Maladies of the Genito-urinary System. It is here, perhaps, more than elsewhere, that an opportunity is afforded the author to place before his readers in a conspicuous manner the practical and useful lessons which he teaches, leaving in shadow the less important facts, thus justifying the aim of his writing. In this we think he has well succeeded, and the reader in search of practical information, sound principles, and reliable guidance in difficulties will find them here. It is not the author's purpose to mention all the forms of treatment in use, but only those which to his personal knowledge have proved satisfactory, and in consequence many well-recognised forms of treatment are unnoticed. Nor is it possible for a single individual to write with equal authority on all departments of surgery. We therefore have found instances in which we disagree with the author in what he considers to be the best means of carrying out the sound principles of treatment which he lays down. Nevertheless, it is a book which we can recommend to the medical man in active practice as one which he will at all times find useful and thoroughly reliable.

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*A Text-book of Pathology for Practitioners and Students.* By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia General Hospital and to the Medico-Chirurgical College, Philadelphia; Director of the Henry Phipps Institute, Philadelphia, &c. Second edition, thoroughly revised. With 437 illustrations, a number in colours. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 856. Price 21*s.* net.

PATHOLOGY has so far extended its boundaries and has come to occupy so important a place in the medical curriculum that it is an ambitious undertaking to endeavour to deal with the whole subject in a single volume: the prevalent tendency is to divide it into general and special pathology and to devote separate volumes to each of these. Professor McFarland states that his work was primarily intended for students working for the degree of Doctor of Medicine, and that he desired to explain the principles of pathology rather than to deal with controversial questions. No doubt

there is an advantage in collecting all the necessary information in a single volume, especially in facilitating reference, but the result is a bulky volume in rather small print, with some of the less important sections in still smaller type. But our fault-finding stops there. The book is a very useful one—the subjects are dealt with clearly and nothing essential is omitted. The arrangement of the subject matter is good; facts are given rather than discursive presentations of ill-digested observations and theories. Although the type is small the book is well printed, the headings are set out in thick type, and the illustrations are numerous and well chosen.

In the section of general pathology the etiology of disease is considered from the pathological standpoint, and then the defects of development with the various malformations and anomalies resulting are described. A chapter follows on the pathology of nutrition, in which derangements of digestion, assimilation, secretion, and excretion are briefly reviewed. Abnormal conditions of the circulation are described, but in somewhat less detail than one might expect in a work of this importance. An interesting chapter on the characteristics of cell life includes a brief though clearly written account of the fundamental characteristics, both structural and physiological, of cells. Regenerative and retrogressive tissue changes are next described, and the accounts given of the individual degenerations and infiltrations may be mentioned as being concise and clearly defined. This chapter is one which is worthy of special commendation. Under the heading of progressive tissue changes hypertrophy and tumour formation are included. Tumours are discussed at some length, and the classification adopted is that of Professor Adami into lepidic and hylic, but certain modifications are introduced in some details. A chapter is devoted to a general consideration of parasitism, in which the more important vegetable and animal parasites are classified and briefly described. The descriptions given of the parasites of malarial fevers, of piroplasmosis, and of the various forms of trypanosomiasis are very good and well illustrated.

The difficult subject of immunity is dismissed with rather ess consideration than its importance and intricacy demand. A short description of Ehrlich's side-chain theory is given, but it is so brief that it is doubtful whether a student would be able to derive a clear conception from it of this far-reaching hypothesis. The general pathology of infection and of the infectious diseases is next considered. Under this heading the phenomena of inflammation are included. Professor McFarland gives a useful description of this process, though he appears to minimise the part played in it by the tissue cells. The general characters of the specific or infective granulomata are next given. These are dealt with more fully, and descriptions will be found here of the general characters of the lesions of tuberculosis, leprosy, glanders, actinomycosis, mycetoma, cattle farcy, rhinoscleroma, mycosis fungoides, aspergillosis, and syphilis. These accounts are copiously illustrated by figures representing the macroscopic and microscopic characters of the typical lesions of these conditions.

The second part of the book is devoted to special pathology and follows conventional lines, the diseases of special organs or systems being considered in separate chapters. The pathology of the blood is first dealt with, the variations in its characters under different conditions being clearly outlined. The general characters of the individual primary and secondary anæmias are then given, and the blood picture in each is differentiated, being also well illustrated by coloured reproductions of the appearances of stained blood films. Some of the less common blood conditions such as purpura are only very briefly referred to. The chapter on diseases of the cardio-vascular system commences with a short account of congenital malformations. The morbid changes occurring in the pericardium and myocardium are then dealt with, and endocarditis with its results is discussed. A bald discussion of the physiology of the circulation under abnormal conditions is included. In connexion with diseases of the blood-vessels, the condition of arterio-sclerosis and its results are clearly described, but the characters of syphilitic mesaortitis are not defined as clearly as might be.

Diseases of the digestive system are well classified, and the descriptions given of all of the important morbid changes are good. The chapter devoted to these conditions extends to 87 pages, and within this compass is included a great deal of useful and carefully weighed information. Diseases of the respiratory system are adequately described. The account given of pulmonary tuberculosis, though brief, contains all the essentials, and the description of empyema may be mentioned as worthy of special note. Diseases of the skin are dealt with in sufficient detail, and the chief characters of the various eruptions, including those of the exanthemata, are dwelt upon.

Diseases of the spleen, lymphatic nodes, thymus gland and bone marrow are considered together, and the chief morbid conditions affecting them are enumerated and briefly discussed. In the chapter on diseases of the motor apparatus, the abnormal conditions affecting the bones and joints are carefully described, though acute rheumatism, rheumatoid arthritis, and gout might perhaps have been treated at greater length with advantage. Diseases of the nervous system are classified and discussed on ordinary principles, and some good reproductions of sections prepared to show degenerations are included. The remaining chapters are occupied by diseases of the reproductive system and of the urinary system respectively, and call for no special comment.

The book as a whole may be recommended as a useful text-book for students and as a work to which the practitioner may refer for general information in regard to pathology. There is a good index, which should facilitate its use for this latter purpose. The writer has obviously had considerable experience of teaching, and has presented his subject-matter clearly and from a practical standpoint. There are a few mistakes in spelling which have escaped correction. Thus the trypanosome of sleeping sickness is referred to as "trypanosoma gambensi" on page 289, and as "trypanosoma gambiensi" on page 305. "Ali nasi," on page 381, and "epuli," on page 471, are other examples. In regard to the digestion of proteins, the new nomenclature is not adopted, and these bodies are referred to under the old name of "proteids."

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*A Manual of Surgical Anatomy.* By CHARLES R. WHITTAKER, F.R.C.S. Edin., Senior Demonstrator of Anatomy, Surgeons' Hall, Edinburgh. With 48 illustrations in the text. Edinburgh: E. and S. Livingstone. 1910. Pp. 248. Price 5*s.* net.

THIS book, which is offered to the student as providing him with the outlines of the subject, is compiled from the notes of the author's lectures delivered at the Surgeons' Hall, Edinburgh. As a series of lecture notes upon surgical anatomy the book fulfils its function well, for it is brief and dogmatic, fairly well up to date, and much of its information is tabulated. Such tables as those which give the lymphatic supply of various organs are especially useful, and they will help the student in the revision of his subject for examination purposes. The book makes no pretence at giving an exhaustive system of surface markings, but in the case of the more surgically important regions the most noteworthy lines are mentioned. Some of these are not to be recommended. The directions given for trephining for the posterior branch of the middle meningeal artery (p. 12) at 1¾ inches behind

the external angular process and ¼ inch above Reid's base line, would land the operator in most cases in serious difficulty. The statement that the symphysis pubis cannot be palpated in the male because it is masked by the root of the penis and the penile muscles (p. 183) requires some qualification, as does also the dogmatic assertion that there is no anatomical middle lobe to the prostate (p. 176), and that the uvula does not reach to the dorsum of the tongue (p. 48). Of the clerical slips needing alteration we notice that the term "superficial fascia" is used when the author obviously means the superficial layer of the deep fascia (p. 76), and that the lymphatic glands described as the "supraclavicular" set all lie below the level of the clavicle (p. 93). The habit of dissecting the sole of the foot reversed from its natural position has also led the author into using the word "downwards" instead of the correct "upwards" in describing the arterial supply of the sole (p. 235). There are several minor blemishes about the book, but all are easily corrected in any subsequent edition, and when the book appears again it is to be hoped that the author will include more references to the anatomy of the female body than the mere description of the mamma, which is the sole representative of female anatomy in the present work.

The illustrations to the book are for the most part original and are diagrammatic. There are very few improvements made in the perfecting of various industrial methods that do not bring some drawback in their train; and the cheapening of line reproduction processes has proved the undoing of the meagre draftsmanship of modern anatomy. That an illustration is intended only to be diagrammatic is too often taken as an excuse for its careless drawing, and it is hard not to regret that process work is so cheap that the illustrator need not think twice before sending a very inferior piece of work for reproduction. Had reproduction been more laborious and costly, we are inclined to think that Mr. Whittaker would have hesitated to submit some of his figures to the process of block-making. Fig. 2 is an example of careless draftsmanship. The figure is intended to give the surgical guides to the middle meningeal artery: the pterion is abnormally represented, no indication of the great wing of the sphenoid is given on the surface of the skull, and the temporal bone appears to articulate with the malar; in addition to this, there is the appearance of an extra suture across the occipital bone. Fig. 4 is again a very poor piece of work and cannot prove of any real use as a surgical guide. More care might have been expended also on the naming of the illustrations, for "T.S. middle left leg" and "T.S. penis" might be expanded with some advantage. These are evidences of hurried work which should not be permitted to creep in and spoil the effect of a manual intended to teach the precise application of anatomy to the science of surgery, and having good claims to do so.

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*The Principles and Practice of Medical Jurisprudence.* By the late ALFRED SWAINE TAYLOR, M.D., F.R.C.P., F.R.S. Sixth edition. Edited, revised, and brought up to date by FRED. J. SMITH, M.A., M.D. Oxon., F.R.C.P. Lond., F.R.C.S. Eng., Physician to, and Lecturer on Medical Jurisprudence at, the London Hospital. In two volumes. London: J. and A. Churchill. 1910. Vol. I., pp. 950; Vol. II., pp. 887. Price £2 2*s*.

THE general scope and nature of this excellent text-book are too well known to require any words of explanation from us. The editor explains in his preface that the chief changes introduced into the sixth edition are a further reduction in the number of woodcuts, thus leaving more room for letterpress without increase of bulk, some reduction in the space occupied by the criminal aspects of wounding, and a considerable reduction in the pages devoted to lunacy. These omissions have been counterbalanced by large additions to the discussion on the legal relationships of anæsthesia and an expansion of the treatment of assurance, rendered necessary by the prominent position which actions under the Workmen's Compensation Act of 1906 are now assuming in legal medicine.

Dr. Smith has very properly devoted considerable space to the various points which may occur in cases brought into court under the Act just mentioned. The question of what is an accident has now assumed complexities and proportions unthought of some years ago, and medical practitioners are now frequently confronted with the legal aspects of injury to workmen in some form or another. Dr. Smith divides the subject into four divisions: (1) The defining of an accident apart from its results; (2) the relation of an accident to pre-existent disease; (3) the relation of an accident to subsequent disease; and (4) trade diseases directly due to the nature of employment. Numerous cases are quoted to show the problems which may come before the courts when damages are claimed for an injury received by a man in the course of his employment, and by close attention to the remarks and study of the cases which are related a large amount of valuable information may be acquired. Our columns have shown persistently since the Act became law how difficult are many of the questions involved, and Dr. Smith deals with many of them skilfully.

The administration of anæsthetics has of late been much and vigorously discussed, and Dr. Smith's remarks on the subject are specially interesting as they are expressed boldly and are evidently the result of careful thought and cogitation. There is certainly need for legislation considering the enormous number of anæsthetics that are administered. His suggestions as to the broad lines upon which a Bill should be promoted are as follows:—(1) That only properly qualified persons should administer an anæsthetic and receive the protection of the law; (2) that it shall be possible for a public inquiry to be held on a fatal case; (3) that a public inquiry should not necessarily follow on a death unless the person giving the anæsthetic was unqualified; (4) that the option of initiating an inquiry shall rest with any of the persons concerned who may feel dissatisfied with the result without an inquiry—i.e., the surgeon, the anæsthetist, or the nearest relative, guardian, or executor of the deceased, or with the lay committee of the institution in which the death occurred; (5) that the form of public inquiry shall take some other form than a coroner's inquest as at present constituted—i.e., a special jury of some kind; (6) that practical and theoretical instruction in the administration of all the anæsthetics in common use shall be demanded of every candidate for a medical qualification, and also of every candidate for a dental diploma. A Bill passed on these lines would to a certain extent cover the ground of the Bill now under consideration, but legislation exactly in accordance with the suggestions made is not very probable. We are strongly of opinion that the coroner's court is not the right place to inquire into fatalities under anæsthesia; but Dr. Smith's suggestions for a Bill include matters of education which can be, and will be, dealt with by the General Medical Council.

We once again congratulate the editor, Dr. F. J. Smith, on the result of his labours, which are heavy and responsible. Taylor's "Principles and Practice of Medical Jurisprudence" still holds a permanent place in text-books dealing with the subject and will be found of the first value to members of the legal profession as well as to medical practitioners.

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## LIBRARY TABLE.

*Medical Service in Campaign. A Handbook for Medical Officers in the Field.* By Major PAUL FREDERICK STRAUB, Medical Corps (General Staff), United States Army. Illustrated. Philadelphia: P. Blakiston's Son and Co. 1910.

Price $1.50 net.—This neat little handbook, which has been prepared by Major Straub under the direction of the Surgeon-General of the United States Army and published by authority of the War Department, contains the substance of a series of lectures delivered by the author at the medical department camp of instruction at Antietam. While primarily written for medical officers of the regular army and National Guard, it should prove most useful not only to other officers but also to students of military subjects at service schools in the United States of America, who must necessarily give some consideration to the disposition of the medical service in all of the larger tactical problems. During recent years the military forces of the United States have been largely reorganised, and the medical department has shared in this improvement. Particular care is taken to select candidates for commission as military surgeons who are exceptionally well grounded and trained in the duties of their profession. The approved candidates are given a year's instruction at the army medical school in subjects specially indicated for the service. The writer very rightly points out that army medical officers are not merely *healers* of disease, but that their efficiency also depends in *preventing* disease, and thus helping the fighting line of its encumbrance of sick. Chapter II. deals with collateral military subjects, such as preparation for field service, orders, map reading, weapons, casualties, and transportations. The sections on weapons and casualties are most interesting, as the range and efficiency of modern firearms are discussed in a practical manner. A statistical table showing the casualties from various campaigns is given. The loss in the individual battles in the Russo-Japanese war was much greater than in previous wars, being 16 to 20 per cent., as against 7 per cent. in the Franco-German war of 1870-71. At the battle of Mukden the Russians lost 2·9 per cent. killed and 16 per cent. wounded, and the Japanese 4 per cent. killed and 17 per cent. wounded. At Sedan 35 years previously the Germans lost *under* 1 per cent. killed and 1 to 3·9 wounded, and the French lost 2·7 killed and 1 to 4·6 wounded. "It would appear, therefore," says Major Straub, "that the battles in the Far East were 'bloody,' not because of their longer duration, but also on account of the high efficiency of the weapons used." Chapter IV., dealing with administration, and Chapter V., describing battle dispositions, both form interesting reading. Major Straub has compiled a well-turned-out little book on the medical service arrangements of the United States army which should prove valuable to the officers connected with this service and a useful work of reference for those of our officers who wish to study the medical arrangements of other armies.

*Conversations with Women Regarding their Health and that of their Children.* By A. RABAGLIATI, M.A., M.D. Edin., F.R.C.S. Edin., Honorary Gynæcologist (late Honorary Surgeon), Bradford Royal Infirmary. Bradford: William Byles and Sons. 1910. Pp. 318. Price 5*s.* net.—Dr. Rabagliati has certainly a somewhat novel creed to expound, as we learn when he informs us in his preface that energy is the immediate cause of material substance, and that he does not believe that material substance is the cause of energy. He holds that "gravitation is not a property of matter but a form of the universal energy which incorporates itself in material substance in order to its own manifestation." Energy is to be regarded as flowing into and procreating the atom at one stage, and flowing out again coincidently with the breaking up of the atom at another stage. From the point of view of the author matter is not eternal, but energy is. In these conversations human bodies are viewed as procreations by the human power of life (what the author terms anthropino-zoo-dynamic) to be fitting habitations for the manifestations of all the powers of human life. These powers act through the functions of organs, and the fundamental or primary one of these, from the author's point of view, is nutrition. According to Dr. Rabagliati the fundamental character of nutrition is proved by the fact that the first step in development is the turning in of the outer layer of the embryo to form the body cavity, which body cavity is the beginning of the digestive tract! He then goes on to say that when "we perceive this point clearly and adapt our physiological conduct to it we incidentally add a large number of years to healthy, happy, and efficient human life." As he remarks, it is certainly very curious and very interesting, but we must confess we are completely unable to follow either the author's argument or his meaning. On the application of this idealistic theory the author has built up a book dealing with the health of women and that of their children.

*Golden Rules of Refraction.* By ERNEST E. MADDOX, M.D. Edin., F.R.C.S. Edin. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. Pp. 96. Price 1*s.*—This is the third edition of what the author describes as a "little miniature of a subject to which only a large volume could do justice." The description is accurate. It is intended "chiefly for the help of general practitioners who may be commencing the study of refraction." Unless the general practitioners are exceptionally situated in that they are able to correct many refractions under the supervision of a competent teacher we fear that the book will be of little value to them. For the medical student who approaches the subject seriously and under proper control it will form a very useful reference book to carry in his pocket, and even the expert may be recommended to read it through, for he will find several valuable "tips" which we do not remember to have seen collected elsewhere. Moreover, he will find nothing to cavil at in the teaching, as was, indeed, to be expected in a book on this topic by Dr. Maddox.

*The Treatment of Syphilis by the Ehrlich-Hata Remedy (Dioxydiamidoarsenobenzol).* A Compilation of the Published Observations by Dr. JOHANNES BRESLER, Chief Physician to the Provincial Medical Establishment at Lüben, Silesia. Second edition, much enlarged, with the portraits of Ehrlich and Schaudinn. Translated by M. D. EDER, M.R.C.S. Eng., L.R.C.P. Lond., with an abstract of the most recent papers. London: Rebman, Limited. Pp. 122. Price 2*s.* 6*d.* net.—This is a translation of the second edition of Dr. Bresler's pamphlet, and it consists mainly of abstracts of the chief papers which have been published on the use of "606," especially those which have appeared in Germany. There is an appendix by the translator which contains *résumés* of those articles which have been published since the publication of the original German work, and this notices most of the papers which have appeared in this country. The book will prove chiefly of use as showing what has already been written on the subject. The information is somewhat undigested, but this will not in any way militate against its use as an introduction to the subject.

*Die Mikroskopischen Untersuchungsmethoden des Auges.* Von Dr. S. SELIGMANN. Berlin: S. Karger. 1911. Pp. 324. Price, paper, M.8; boards, M.9.20.—Dr. Seligmann's book has proved its utility and is improved by being brought up to date in this second edition. The division into two parts, general and special, and the main features of the work remain the same. There are useful bibliographies appended to the sections. New methods of staining for fat, glycogen, axis cylinders, neurofibrillæ, &c., are described. Sections on staining blood cells and bacteria have been added. We find no mention of the advantage of freezing the eye before cutting it preparatory to making microscopical sections.

Where topographical detail is so important, as in most preparations of the diseased eye, this method is to be recommended strongly. On the other hand, it is, in our opinion, unnecessary to make holes in the walls of the globe to allow fixing fluids to penetrate. Even sublimate solutions, such as Zenker's, which we concur with the author in advocating, penetrate quite satisfactorily without running the risk of damaging the structures by the method which the author advises. The directions are precise and reliable, and the book is the most useful one on the subject which we have seen.

*First-Aid to Injured and Sick.* By J. F. SUTHERLAND, M.D. Edin. London: Houlson and Sons. Edinburgh: John Menzies and Co. Thirty-sixth edition, revised and enlarged. Pp. 32. Price 3*d*.—This is a waistcoat-pocket memorandum that will be useful to the general public, particularly those whose occupation brings them especially into contact with accidents.

*Herbert Fry's Royal Guide to the London Charities, 1911.* Edited by JOHN LANE. London: Chatto and Windus. Pp. lvi.–375. Price 1*s*. 6*d*.—This handbook, now in its forty-seventh issue, serves a double purpose. First, it directs the needy to those charities that will best succour their special source of distress; secondly, it sets forth the aims, incomes, needs, and other particulars of organised charities, so that those who may be prompted to bestow some portion of their income may so inform themselves as to make a judicious choice. The past year has been a very bad one for charities, the main reasons suggested for this being the death of King Edward, which has increased distress by lessening the usual avenues of employment, and secondly the facts that the financial changes introduced by the Budget has made business wavering and uncertain, while the changes in the licensing law threaten many with severe curtailment of their incomes, and the increased death duties have necessarily diminished legacies for charitable purposes. At Christmas-tide, however, hearts and purses are opened, and this little book will come to the aid of many who would be willing to give if they only knew how to bestow their mite judiciously.

*The Religions and Philosophies of the East.* By J. M. KENNEDY. London: T. Werner Laurie. Pp. 296. Price 6*s*. net.—Mr. Kennedy tells us in his preface that he has attempted to apply the Nietzschian standards of good and bad to the main principles of the more important religions of the East. To do this he gives a short account of the chief beliefs and tenets of Brahmanism, Buddhism, Mohammedanism, Judaism, Confucianism, and Shintoism, together with a few remarks on Parseeism and Mithraism. Advanced thinker as Mr. Kennedy would appear to be, his opinions will be anathema to the modern democrat, for we find him saying on p. 267 that "the religion of men of inferior intellects must be prescribed for them by the higher order of men, and not, as is usually the case at present, *vice versa*." And again, p. 32, "In the 'civilised' countries of the West the dregs of society are permitted to rule the whole community." It is no part of our duty to argue for or against the correctness or otherwise of these sentiments, but we can say that Mr. Kennedy has produced an interesting book. On account of the very wide range of subjects with which it deals in a brief manner it is necessarily superficial, but the reader will find at the end of the book a very fairly complete bibliography of works dealing with the various religions by a study of which he may read up the subject more at length.

*New Year's Diaries and Calendars.*—To most medical men a pocket diary is essential and to many a desk diary in addition. They therefore form useful and acceptable New Year gifts. As in former years, we are able to commend in this respect the productions of John Walker and Co., and the well-known original Letts's diaries, published solely by Cassell and Co. Messrs. Walker continue to produce neat and convenient pocket-cases containing slip-in diaries and note-books of various sizes. The same firm's Pearl diary, of waistcoat-pocket dimensions, is particularly neat. Letts's diaries are so well known that they need no description. They are issued in various sizes, with or without interleaved blotting pages. The accident insurance coupon is not omitted, and we are informed that claims amounting to £3500 have been paid to holders of Letts's diary coupons. They also publish a Nurses' Report Book and Diary, which should prove a great convenience to district nurses, and a convenient and narrow medical visiting list. We have also received physicians' and surgeons' visiting lists, published as neat pocket-books, by Hazell, Watson, and Viney, John Wright and Sons of Bristol, and Rudall, Carte, and Co., containing a large amount of useful information in the preface.

## JOURNALS AND MAGAZINES.

*Brain, a Journal of Neurology.* Edited by HENRY HEAD, M.D. Camb., F.R.S. Vol. XXXIII., Part 130. London: Macmillan and Co. Price 4*s*. net. Yearly 16*s*. net.—This journal maintains its high reputation, and continues to attract important and interesting papers. The present number contains an account of an exhaustive research on the functions of the "Mesencephalic Root of the Fifth Nerve," by Sir Victor Horsley and Dr. Otto May; a paper by Dr. Harvey Cushing, which we have noticed elsewhere, on "Strangulation of the Sixth Nerves by Lateral Branches of the Basilar Artery in Cases of Brain Tumour"; a paper on "Tumours of the Third Ventricle," by Dr. Weisenburg; and one on "Central Nervous Response to Peripheral Nervous Distortion," by W. A. Osborne and Basil Kilvington. There are thus contributions from England, from the United States, and from Australia, all of them of more than usual interest.

*The Birmingham Medical Review.*—In the November issue of this magazine is published the first of the Ingleby lectures for 1910, delivered by Professor R F. C. Leith. It deals with so-called simple or benignant tumours of the uterus, including the important subject of fibroids. Dr. W. A. Potts writes on the laws of heredity as bearing on the problem of the feeble-minded, a condition which the researches carried on at the Galton laboratory show to be inherited.

*The Medical Chronicle.*—In the November number is an address by Mr. C. B. Lockwood dealing with the relationship borne by carcinoma, sarcoma, and endothelioma respectively to inflammation. He holds that all these conditions own the same cause. For the purpose of his thesis he attempts one more definition of inflammation to add to the many already proposed—viz., that inflammation is the increased number of cells in a part caused by an irritant. Dr. Robert Lakin continues his study of the blood and urine in conditions associated with dropsy, but does not reach any very definite conclusions. To the December issue Dr. W. B. Warrington contributes a most interesting paper on neurasthenia, setting forth the theories which have recently been propounded in explanation of this and allied functional disorders dependent on alterations in the synapses or junctions between the neurons. Dr. R. T. Williamson contributes a review of recent literature dealing with medical geography.

*Edinburgh Medical Journal.*—The existence of a form of multiple inflammation of joints, simulating rheumatism but connected with tubercular infection, has been much ventilated in France, but has received little attention in this country. Professor Alexis Thomson, therefore, does good work in calling attention to the investigations which have been made into this pathological condition. His address on

this subject, published in the December number of this journal, is well worthy of careful perusal. Dr. John Strachan sets forth some novel views as to the functions of the corpuscles and fibrin of the blood in his Harveian Oration, delivered at Edinburgh and published in the same journal. Other papers are those by Dr. Lewis C. Bruce on the importance of physical examination in mental cases, by Dr. M. Douglas on infection of the urinary tract by bacillus coli, and by Mr. J. Crawford Renton on gastric and duodenal surgery.

*Contemporary Review.*—The January number of the *Contemporary Review* covers a large range of subjects, and contains one article of distinctly medical appeal—an explanation of the message of the late Professor William James. As Professor James would have admitted, "pragmatism," as he left it, did not attain to any final expression, but none the less Professor Jacks finds its author a thinker of the first rank, "not always unconfused it is true, but yet with a clear vision ahead of him, a range of varied philosophical experience behind him, and with a great human purpose in his heart." The article is a closely written investigation of the controversies introduced by Professor James into the philosophical world, and those interested in such high dialectics will do well to read it.

The issue of the *Cornhill* for January shows that this vigorous example of the great Victorian magazines is as good to-day as ever. Its more immediate congeners have perished, but it remains strong in interest, literary in character, and agreeable in form. The article most distinctly of medical interest is one by Mrs. S. A. Barnett upon Town Planning; but our readers may be interested in a series of examination papers on the works of famous authors, which is started by 12 questions upon the "Essays of Elia" propounded by Mr. E. V. Lucas; while Mr. Benson's story of the life of "J. K. S." has considerable psychological importance. Two serial novels are begun, one by Mrs. Humphry Ward and the other by Mr. and Mrs. Egerton Castle.

*The Burlington Magazine.*—The *Burlington Magazine* begins the year with a very good number, containing a great deal of information useful not only to those who desire artistic discussions, but also to those who are specialising as collectors in different directions. The editorial article on National Memorials is a timely reminder that to obtain a satisfactory memorial to a dead king, or to any other celebrity, is in this country not easy. The editors of the *Burlington Magazine* suggest that it is not enough to throw open the competition to all British artists without distinction, so long as the jury consists of the type of official artists to whom in the end the commission will certainly be given. Mr. Cescinsky continues to write on the furniture of the Gillow "Cost-books," and to collectors of furniture these articles have many points of interest. Mr. Clutton Brock, in a very sagacious paper, attempts to explain what the Post Impressionists would be at. His article will be more convincing to those who have not seen the pictures, but those who have seen them will coincide with his closing sentiment in which he says that the "public (British) seems to find them amusing, and after all it is better to be amused than to be bored." There is an interesting note on the work of the brothers Le Nain, a selection of whose paintings are now on exhibition at the Burlington Fine Arts Club.

ISOLATION HOSPITAL EXTENSION AT COVENTRY.—The Coventry city council has had before it a scheme for enlarging the present accommodation of 60 beds by an additional 40, which, with the population estimated at nearly 100,000, will give 1 bed per 1000 of the number of inhabitants. The cost of carrying out the scheme, which the council has approved, is put at £11,500. It was also decided, at the same meeting, to appoint a disinfector and another assistant-inspector of nuisances, and to erect a public mortuary at an estimated cost of £2150.

# Reports and Analytical Records
FROM
# THE LANCET LABORATORY.

### CALOGEN BLOCK.

(CHAS. ZIMMERMANN AND CO., 9 AND 10, ST. MARY AT HILL, LONDON, E.C.)

NOTHING could be more convenient and effective for the production of formaldehyde vapour than the calogen block. In a trial we made with it torrents of formaldehyde vapour were given off, and it is important to add that the formaldehyde so evolved is moist. It is well known that dry gases are not effectual as germicides. The block consists of a column of permanganate with some bichromate of potassium, and on moistening this with formaldehyde solution the gas is rapidly disengaged. In actual operation the block is placed in a clean pail or other metal receptacle, and from 5 to 6 ounces are poured over the column. It is as well to cover the bottom of the pail with a few ounces of water before starting the reaction. This simple method is obviously useful for aerial disinfection, in rooms, schools, hospitals, and places of public resort generally.

### ALBULACTIN.

(A. WÜLFING AND CO., 12, CHENIES-STREET, LONDON, W.C.)

Albulactin is described as the vital protein of human milk and as being quite distinct from casein. It appears to be the albumin contained in human milk which is not present to anything like the same extent in cow's milk. Some authorities regard this fact as an explanation of the failure of cow's milk to feed the human child quite satisfactorily. Clinical reports, at all events, are quoted which in face of the evidence presented entirely support this view. The most striking results are those in which diluted cow's milk failed by itself, but succeeded when a proportion of albulactin was added to it. If that is the case, then the use of albulactin marks a decided advance in artificial infant feeding. According to our examination, albulactin shows a decidedly alkaline reaction and contains: moisture, 10·40 per cent.; mineral matter, 6·0 per cent.; and albumin, 83·60 per cent.

### DIETETIC STOUT.

(PETER WALKER AND SON, PANCRAS-ROAD, LONDON, N.W.)

Analysis revealed some favourable features in this malt liquor. The practical absence of volatile acidity is particularly satisfactory and indicates a healthy condition. Moreover, the stout is "smooth" and "soft" on the palate. The malt extractives amounted to 5·81 per cent., of which 7·0 per cent. consisted of proteins. There can be little doubt, therefore, of the nourishing value of the beverage. Further examination indicated that the stout is made exclusively from malt and hops. The mineral matter contained an abundance of soluble phosphates. While the stout is decidedly nutritious, its condition is sound, and its alcoholic strength is not excessive. The amount of alcohol found was just under 5 per cent. by weight.

### (1) VAPOROLE AND (2) SOLUTION HEMISINE AND COCAINE HYDROCHLORIDE; (3) "TABLOID" PHOTOGRAPHIC CHEMICALS FOR COLOUR PHOTOGRAPHY.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

A combination of the suprarenal active principle with cocaine is obviously useful in dental practice, especially when the powerful hæmostatic is in such proportion as not to cause too much constriction of the capillary blood-vessels of the socket. The preparation is supplied (1) in the convenient "vaporole," a hermetically sealed glass bulb containing the solution sterilised, or (2) in stoppered bottles of 10 cubic centimetres capacity. (3) The photographic tabloid offer an undoubted facility to workers in colour photography, the

application of which in medical studies is well worth pursuing. We understand that the whole process of development in the production of a colour photograph, reversal, redevelopment, and intensification can be carried out with solutions of tabloid rytol, tabloid reversing compound, and tabloid colour plate intensifier. These tabloids should render considerable assistance in the production of colour photographs in skin diseases, of histological specimens, and so forth.

### GALVANIT.

(THE GALVANIT MANUFACTURING CO., 6 AND 7, GEORGE-STREET, HANOVER-SQUARE, LONDON, W.)

Galvanit, a successful plating powder, has been before the public some little time, but recently a series of powders has been introduced which are adapted to scientific and surgical purposes. The powder called "stannit," for example, affords an excellent way of renovating the surfaces of surgical instruments. A perfectly uniform silvery metal is deposited upon the steel by merely rubbing it with the moistened powder. According to Professor Sylvanus P. Thompson, in this process the particles of the finely divided electro-positive metal make innumerable contacts with the copper surface and act as so many minute anodes. These innumerable minute anodes gradually dissolve, and in dissolving set up in the liquid little local circulations of electric currents which, as they leave the liquid, throw down from the metal in solution a film upon the surface, which thus acts as a cathode and becomes plated over with the deposit. We have tried the powder on various surgical instruments with success. Special plating powders are supplied for different metallic surfaces.

### GROATLINGS.

(J. AND W. ARBUCKLE, COLTBRIDGE MILLS, EDINBURGH.)

This is oatmeal in the form of fine grains, a treatment of an admittedly valuable food which renders it dietetically very satisfactory. There can be little doubt that coarse particles are a source of irritation to many persons, while they often prevent or complicate complete cooking. The graining process is conducted also in such a manner as to preserve unimpaired the esteemed nutty flavour of high-grade oatmeal. On analysis we found the product yielded normal results; it contained, for example, 9·4 per cent. of moisture, 3·0 per cent. of mineral matter with an abundance of phosphates, and 10·4 per cent. of protein. It makes a porridge bland and smooth as milk.

### "FLANKETS."

(CHRISTOPHER WILLIAMSON, 91, EDGWARE-ROAD, LONDON, W.)

We are sure that these all-wool sheets will be appreciated by many people who feel chilled at the touch of the linen sheet in winter. The "flanket" is a decided improvement upon the flannel blanket, which is often a source of irritation to the skin. We found on examination that the flanket was pure wool. It has a smooth surface and is comfortable next to the skin. They will supply, we think, a domestic commodity which will be acceptable to many persons who feel the cold severely. They are certainly more hygienic than the flannel blanket, and while warm are not heavy.

### FORMAROSE TABLETS.

(ARTHUR H. COX AND CO., ST. MARTIN'S-PLACE, BRIGHTON.)

Formarose tablets embody an excellent formula for throat and mouth disinfection. An interesting novelty in regard to them is that in the course of preparation of the tablet a concentrated infusion of fresh flower combined with a very small quantity of genuine oil of rose is employed. The result is a pleasant and elegant antiseptic lozenge.

### CELLULOSE FILMS.

(W. MARTINDALE, 10, NEW CAVENDISH-STREET, LONDON, W.)

These films are prepared in three forms and thicknesses, known respectively as taffetas (yellow), aseptafilm (colourless), and cellafine (colourless thin). The film is a very interesting product which is perfectly transparent and analogous in appearance to gelatin sheeting. Taffetas is used as a substitute for oil silk; aseptafilm is suitable for applying direct to wounds; and cellafine is a grease-proof covering which is of service in many obvious directions. The films are not affected by alcohol, ether, or chloroform, nor by prolonged immersion in hot water, and there is no difficulty, therefore, in sterilising them. These interesting films, made of an entirely innocuous material, promise to be of distinct service in medicine.

### RUSKS.

(EMIL PAULY, 98, UPPER THAMES-STREET, LONDON, E.C.)

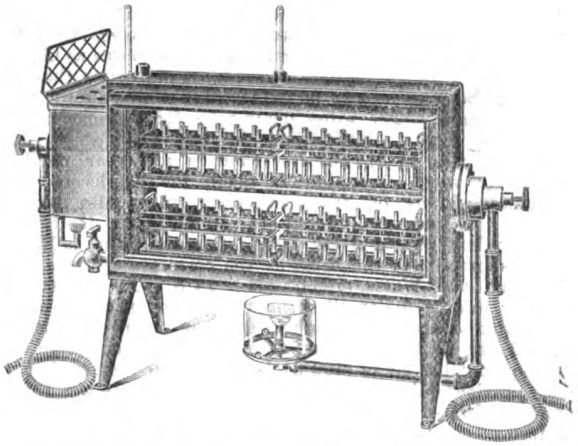
This is a well-prepared crisp rusk, having as well a good keeping quality. It is free from an excessive amount of sugar and contains butter-fat and milk protein. We found that 23·0 per cent. of the rusk was soluble in water. The fat amounted to 3·45 per cent. The rusks are digestible and nourishing. Their texture involves thorough mastication, and that is probably one good reason why the rusk is digestible.

# New Inventions.

## (1) A NEW OPSONIC INCUBATOR; AND (2) THE ANHYDRIC INCUBATOR.

THE new opsonic incubator is fitted, as shown in the accompanying illustration (Fig. 1), with Hearson's ingenious thermostat and capsule which automatically keep the temperature constant. The incubator consists of a double-sided reservoir and is provided with a glass front and back. It is intended to be used on a bench facing the light, and at the back are two grooves for the insertion of different

FIG. 1.

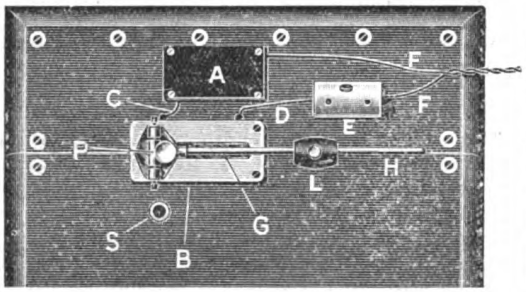


coloured glasses. For the examination of blood a red glass is used, while for toxins a blue glass is used. On the side of the apparatus is a small tank fitted also with Hearson's patent thermostat and capsule. The temperature of the tank is regulated for 56° to 60° C. for the sterilisation of liquids. It contains two perforated plates, one for ordinary test-tubes and the other for small tubes. The apparatus is very neat and compact, and lends considerable assistance in carrying out the Wassermann test.

In the anhydric electric incubator the constant temperature desired is obtained entirely by the electric current from the main. The incubator, which is of the ordinary type, is wound round with electric resistance wires covering every part of the chamber formerly occupied by the water-jacket. Directly the current is switched on there is a steady production of heat over every part of the interior surface of the chamber, increasing until the expansion of the thermostat

brings about the automatic interruption of the current. There is, of course, no heating arrangement below the incubator. The illustration (Fig. 2) shows the resistance apparatus on the top of the incubator. A is the junction-box; B, china base; C D, conductors; E, fuse-box; F, "leads" to main current; G, platinum contacts; H, lever

FIG. 2.




rod; L, lead weight; P, a milled-head screw; and S, thermometer hole. Instructions for working the incubator are sent out with each apparatus by the manufacturers, Messrs. Hearson, of 235, Regent-street, London, W. The incubator works satisfactorily and smoothly by merely switching on the current from the main, so that its convenience cannot be disputed.

## PUBLIC HEALTH AT CAPE TOWN.

THE report on the vital statistics of the city of Cape Town for 1909–10 bears no date, but appears in good time, and therefore has all the more interest. The birth-rate for Europeans here, as elsewhere, is decreasing, though not rapidly, nor in a regular ratio. For the period to which the report refers—July, 1909, to June, 1910—the ratio was 22·6 per 1000, the European population being estimated at 34,300; for the coloured population, estimated at 32,250, the ratio was 50 per 1000, this figure being also lower than the average. The illegitimate European birth-rate was as high as 9·5 per cent. of the total, a much higher proportion than has hitherto been recorded; no explanation can be afforded for this increase. The gross death-rate for Europeans was 13·23, a higher figure than in any year since 1904 (when it was 14·3), but less than in any year previous to that; when correction is made for deaths of non-residents (many of these occurring in public institutions) the rate is lowered to 10·72, but if further corrected for age and sex distribution the figure is 14·61; this is practically the same as the corrected death-rate for England and Wales (1909)—viz., 14·5. The death-rate among infants under 12 months is an index of the social condition of the population; in the year under review it was 104·2 per 1000 births, a figure slightly higher than the quinquennial average (102·8), but very much lower than in any previous quinquennium; in 1900–05 the rate was 135·1, and in 1895–1900 as much as 180 per 1000 births. The improvement is due to the improved sanitary condition of the city, and the greater attention paid to the feeding and care of young infants. A lady inspector visits and takes notes of obvious sanitary defects and faulty methods of feeding; she advises as to the preparation of food, cleaning of bottles, and so on. It is very satisfactory to find that these visits are much appreciated.

The zymotic death-rate was 1·25 per 1000 for Europeans, measles, diarrhœal diseases, and whooping-cough being the chief causes. There was a serious epidemic of measles, lasting from November to June. Dr. A. J. Anderson, the medical officer of health, believes that nearly every susceptible child took the disease; it is not yet notifiable, and is therefore not generally regarded as a serious complaint, so that precautions against cold are not taken. The number of deaths returned does not, of course, represent the true fatality of the disease, as many are certified as broncho-pneumonia. During the last three years diphtheria has been of a severe type, though not prevailing to any considerable extent. In 1909–10 there were 38 cases and nine deaths; it is noted that drains were defective in many instances; no allusion is made to milk-supplies nor to any other possible mode of spread. There were 41 cases of enteric fever in Europeans, 15, however, being introduced into Cape Town from outside; only one death occurred. Defective drains are stated to have been present in 17 cases; no other cause is suggested, and there was nothing in the shape of an outbreak. The death-rate for tuberculosis among Europeans was 1·65 per 1000, or, if corrected for non-residents, 1·45; but as the constitution of the population is such that there is a larger proportion than is normal of persons in middle life (when the death-rate is higher), if the suitable factor for correction is applied the death-rate comes out as 1·30 per 1000. There were 69 cases notified amongst Europeans, of whom 35 were clearly shown to have contracted the disease before coming to reside in Cape Town; but in addition 14 deaths from tuberculosis occurred among Europeans that had not been notified. Great care is taken in regard to isolation and disinfection; and, as far as possible, advanced cases are removed to the Old Somerset Hospital, while cases which will derive benefit are treated in chalets. Fortnightly visits are paid to notified cases. Dr. Anderson considers these visits to be of great assistance in seeing to the cleanliness and ventilation of the dwellings, the use of spit-cups, &c.; he has been "struck with the improvement that has taken place in many cases which were apparently hopeless when notified." The Free Dispensary is opened one evening in each week for the examination and treatment of persons supposed to be suffering from the disease; but adequate accommodation for advanced cases is urgently needed. Not a single case of small-pox was notified during the year.

As to general health conditions, in regard to water-supply, this is satisfactory as to its source, being derived from springs on Table Mountain. Each house is supposed to have a covered galvanised iron tank for storage, fed on the "dribble" system, but there are many defective water barrels and other makeshifts still in use as cisterns, and the provision of a constant supply is an urgent necessity. Some part of the supply is derived from a catchment area on Table Mountain, which yields a water discoloured from vegetable matter held in solution. An experimental plant has been installed to remove this objectionable constituent. The health officer states that the water as delivered to the inhabitants is remarkably pure and free from injurious matter. We should like to have seen more particulars as to the sources of supply and its chemical and biological characters, on which points it is usual to rely on the medical officer's report for information. The arrangements for milk-supply within the city are regularly inspected and kept up to the mark; but the water sources of farm premises and places outside the city are in many cases grossly polluted. Dr. Anderson considers that the time has now come when a public supply of water should be laid on to the district whence the milk is derived. Mosquitoes cause considerable annoyance within the city, and measures are being taken to endeavour to exterminate them; nothing is said as to the species that are found, or their relative abundance. Only one death occurred during the year from malaria.

The coloured population in Cape Town numbers 32,250; their death-rate was 35·28 per 1000, or 33·30 when corrected for non-residents; and their zymotic death-rate was 4·27. Measles, whooping-cough, and diphtheria prevailed to some extent, also enteric fever. Tuberculosis was the most frequent cause of death, giving a ratio of 7·00 per 1000; or, if corrected for residence and age constitution, 6·04 per 1000. Pneumonia was also fatal, as is the case with native races generally.

ASSAULT ON A MEDICAL OFFICER OF HEALTH.—At Penzance on Dec. 21st last a man was fined 5*s.*, and his wife was bound over to keep the peace for 12 months, for assaulting Mr. J. R. M. Richmond, medical officer of health of the Penwith rural district council. Evidence showed that owing to the insanitary condition of the defendants' cottage Mr. Richmond had been ordered by the magistrates to inspect the dwelling. When Mr. Richmond attempted to enter the cottage the man pushed him away, and the wife procured an axe and threatened "to cleave him" with it.

# THE LANCET.

*LONDON: SATURDAY, JANUARY 7, 1911.*


## The Promise of 1911.

WE are entering not only upon a new year, but upon a fresh decade. The twentieth century so far has done its full share in developing the natural resources of the world and in turning them to account for man's benefit: there are no signs of pause in the forward movement, or of any slackening of the attention with which the public scrutinises all that, occurring in any scientific or professional department, is proclaimed as beneficial to the community. We may anticipate that when future generations review the social history of the years 1901–10, the practical application of wireless telegraphy, the popularising of the mechanically propelled vehicle, and the attempt to overcome the difficulties and dangers of aerial navigation and of aviation will be found to rank among the most prominent feats of human ingenuity. We are not called upon to prophesy, with regard to this last, that the rivalry of the flight of birds with the aid of an engine and fixed planes will pass into a permanent improvement of human amenities; but whatever we may expect the verdict of posterity to be upon the value of the mechanical innovations, we may be sure that the fearlessness of the pioneers of aviation will never be forgotten. We have alluded to three sudden leaps forward that have occurred in mechanical construction. The onward movements in medical science may vary, or appear to vary, in pace; but they are seldom characterised by these abrupt leaps. Our progress is usually made without sensational features such as would focus the public attention. It is, on the whole, steady, and the most notable advances have the least obvious appeal to the public eye, so that we consider it to be of good promise for the future, that a more general interest in medicine appears of late to be aroused.

The year 1910 has not witnessed the exorcising of the demon Tuberculosis, because tuberculosis is not a supernatural visitation or one susceptible to the miraculous operation of a charm; but it has seen the continued efforts of science bringing us nearer to that stage of knowledge at which mastery of the disease may be hoped for, and it has witnessed the intelligence of the nation directed to the consideration of practical measures of prophylaxis and mitigation. It has seen scientific research applied with unabated zeal, and with undiminished confidence in ultimate success, to the elucidation of the problem of cancer. It has seen the great voluntary hospitals of the kingdom and of its metropolis carrying on their good work with increased efficiency, and a generous public, in spite of a period of commercial depression, of political anxiety, and of other causes which might be expected to diminish their charitable subscriptions, has supported with liberality institutions which have deserved and won its confidence. The regular subscriptions to charities have in some directions dropped off, but in other directions the money has come in. We have no doubt that the funds forthcoming in the British Islands in support of enterprises having for their object the combating of physical suffering have received a powerful stimulus from recent achievements of science, forming an illustration of the popular proverb which declares that "nothing succeeds like success." The fact that rabies can be made less deadly in countries where it is prevalent owing to the discoveries of a scientist whose beneficent work in this and other directions has had its effects in every country of the globe, and that in Great Britain the disease has been stamped out owing to precautions advised by science and undertaken by the public for its own protection, are things that the public can readily appreciate. The world has accepted at the hands of science a weapon of defence against diphtheria, and in this country the gift is now being brought within the reach of the poorest. During the past year the plague, which many medical men, as well as all laymen, have regarded as an oriental disease, extinct with us since the days of the STUARTS, has returned to shores where it was once practically endemic, to be met by science armed with the knowledge of its mode of propagation and of the practical measures to prevent the extension of its ravages. If instances needed multiplication the achievements of modern surgery might be taken as examples of that which medical men of a former generation would have regarded as almost miraculous. The surgical exploits are much admired by the public, sometimes without due discrimination, and, for this reason among others, we have sometimes suggested that the popular discussion of scientific discoveries in lay newspapers has its drawbacks. But we admit its compensating advantages. The medical profession is aware of what the popularisation of their efforts has done in the past for the cause of science, and at the opening of a new year looks forward with confidence to supplying the public with good reasons for securing public esteem.

The present year or the not distant future may see problems solved of great importance which affect the medical treatment of the poor and of the working classes, and concern, directly or indirectly, the position of a large number of members of the medical profession. The questions are intricate, and on many of them the medical profession has no settled mind, a position which we hope will be altered as discussion clears the many issues. Legislation against quackery is in the air. The medical profession, governed and to some extent protected by medical Acts of considerable antiquity, is looking forward to a day when the Legislature will better safeguard not so much the profession as the public, now exploited without hindrance by any grasping charlatan or dangerous quack who is wary enough to keep outside the provisions of the statutes referred to. An additional reason for such protection of profession and public alike should be found in the improved and extended training provided for those entering our calling. The alternative to the quack and the charlatan is now a highly instructed man who has spent some of the best years of his life, not to reckon a large sum of money, in acquiring the skill which he places at the disposal of his fellow citizens. The fuller understanding, which has certainly come about,

of the medical profession by the public leads us to hope that the difficult subject of quackery will be dealt with in a comprehensive manner. We expect no foolish monopolies.

The year that lies before us appears likely to be distinguished by political contention and uncertainty which may retard domestic legislation and the settlement of questions which the medical profession would willingly see decided. The present Administration has, however, shown itself fully alive to the importance of conserving the physical health of the people, and there is every reason to hope that some of the needed reforms, which concern the medical profession, such as those which were brought into prominence by the Reports of the Poor-law Commission, will receive serious consideration before long. Progress may also be made in other directions, such as that initiated by the passing of the Housing and Town Planning Act. We may in fact, in matters medical, congratulate ourselves upon a hopeful state of affairs and upon the prospect of a sustained forward movement in the year 1911.

## Order and Charity.

THE lecture delivered by Dr. LAURISTON E. SHAW before the Stratford Division of the British Medical Association and published in THE LANCET of Dec. 24th, 1910, p. 1813, draws attention in clear terms to the present disorder of medical charity. Dr. SHAW is not content merely with indicating the causes, immediate and remote, internal and external, of this disorder, but has a remedy to offer, and in these days an ounce of constructive suggestion is worth a ton of vague criticism. Briefly stated, his remedy is the institution of a genuinely consultative out-patient department, for which, of course, he takes out no patent, for others, we among them, have made a somewhat similar recommendation. In his proposal Dr. SHAW has regard to certain limitations necessitated by the present condition of affairs, political and social. He recognises that political influence in this country is rapidly passing from SULLA to MARIUS, so that it is important, if assistance is to be expected from Government, to propose a plan which will not interfere with any State scheme which may be brought about for providing medical attendance for the very poor. At the same time it would be unwise to place any impediment in the way of such provident schemes as at present exist or may come into operation for providing medical attendance for the moderately poor, such as provident medical dispensaries and combinations of general practitioners in public medical services. Thirdly, no scheme is likely to succeed which will damage the scientific work of the great hospitals, or alienate the sympathy of those members of the medical profession in whose hands lie the education of the students and the progressive labours of scientific research. Medical charity, associated as it always has been with medical education and medical research, must not be violently divorced from them, or the professional aid dispensed by that charity will soon become a lifeless thing. The patient, the general practitioner, and the consultant practitioner (in his capacity as such and as teacher) are the three working partners whose interests are in question, and who are to be considered and satisfied in any arrangement for the distribution of medical benefits. There is, however, a fourth partner—a sleeping partner—who does not come much into contact with the actual working of any of the schemes promulgated, but who is perhaps the most important of all. The hospital subscriber cannot be left out of consideration in any hopeful proposals for hospital reform. It is probable that he may be persuaded for a time by one or two of the working partners against the remainder, but no arrangement is likely permanently to please him that does not lead to harmonious and satisfactory relations amongst all four partners in the firm.

The present disorder is largely occasioned by the prevalent neglect of the interests of the general practitioner, who sees his position gradually, but surely, imperilled by the excessive volume and uncoördinated character of much of the medical charity distributed to-day. His assistance and approval are necessary to the successful working of a hospital, if only because he is, or should be, the channel of income to much of the consultant class. The general practitioner has somewhat lost his influence in determining the destiny of charitable donations, subscriptions, and legacies, for the organisation of great hospital funds has deprived him of the position which he once enjoyed as paramount adviser to the public in such matters, but, nevertheless, his personal influence amongst the hospital subscribers in his own neighbourhood is a power to be considered; while the operation of public medical opinion, founded upon the best traditions of the medical profession, will work against the exploiting of the general practitioner by misdirected benevolence. Some are inclined to blame the philanthropist for the excess of his charity, for the want of coördination that it shows, and for the lack of discrimination in its incidence. It is not necessarily the philanthropist who is to be blamed when philanthropic schemes go wrong. As Dr. SHAW has so wisely remarked, "Sympathy with pain and suffering is a quality none could see lessened one iota without fear for the future of our race." When alms are given in excess of necessity, when judgment is wanting in the selection of beneficiaries, when philanthropists obstruct one another in their eagerness to relieve distress, charity is abused and fails of its purpose, but it is the administrators who are at fault. These things are now being generally if tardily appreciated. In conformity with the spirit of the times endeavours are being made in the management of medical charity whereby the gifts of the charitable may reach only worthy recipients, and sound hopes may be entertained that the abuses which have flourished for years out of promiscuous and ill-considered giving will be prevented, as their causes are better understood.

More than the volume of medical charity, the muddle of it is responsible for much of its present ineffectiveness, and the want of coöperation between the two branches of the medical profession is a truly vexatious factor in the trouble. There is no doubt that the interests of the general practitioner and those of the consultant do not lead both to regard the out-patient question with the same eye. The public are said to be ill-informed and ignorant

when they imagine that members of hospital staffs are remunerated for their services, but the eagerness with which hospital appointments are sought after, and the strenuous competition which prevails to secure any that are vacant, must abolish the idea that a hospital physician or surgeon considers himself to be wholly unrewarded by filling these honorary posts. Services which are voluntary, even if indirectly remunerated, possess certain features which enable those who give them to obtain consideration and respect, and the members of the medical staffs of our great charities possess great power which can be exerted for the restriction of the volume and the control of the incidence of medical charity in London and other large towns where similar evils exist. Often the influence of the medical staffs is vigorously employed in sifting their out-patient departments; but such action is apt to be individual and capricious. Coöperation between the general practitioner and the honorary medical staff of the hospitals seems necessary to bring about a just reform in hospital administration, and the consultative out-patient department, with the abolition of subscribers' letters, together with the introduction of a rule whereby admittance to a hospital shall depend on the production of a medical certificate of suitability, are proposals which deserve serious attention. And we may feel all the more certain that they will receive them because of the wise move just made by King Edward's Hospital Fund for London, which has instituted a committee to consider and report upon the whole subject of hospital out-patient practice.

## Anarchism and the Criminal.

THE interest which has been aroused by the Houndsditch murders and their later developments is doubtless due chiefly to the startling contrast which these crimes in their reckless ferocity present, not only to the ordered habits of civilised life, but even to the usual methods of the most violent and most criminal members of the community in which we live. Such outbursts of savagery may moderate our excessive confidence in the stability of our civilisation by reminding us of the strength and inveteracy of the passions which that civilisation has to curb, and may make us inquire with some anxiety into the causes which have seemed of recent years to be weakening the force and authority of its salutary restraints. It is true that these particular crimes have been perpetrated by individuals belonging to a different race and civilisation, where the political institutions are of a more primitive type, and where order and the sanctions of government rest on less assured foundations than in this country. And this consideration may certainly be admitted to justify the belief that there should be little risk of the anti-social elements in our own community taking immediate example from the miscreants of Houndsditch, while the extraordinary sequel of Tuesday last has furnished an object-lesson, terrible enough, whether necessary or not, to check the outlaws of society in their desperate schemes. But it would be rash to assume on these grounds that we can have any permanent immunity from the conditions which in other countries are producing these peculiarly dangerous manifestations of criminality, or that the development of such conditions amongst us will not bring about similar results. And therefore it behoves us to examine with some care the tendencies and characteristics of this modern type of delinquency which has been so forcibly brought under our notice by the Houndsditch criminals.

One of the most striking features of this organised criminality, and a feature which has peculiarly impressed the popular imagination, is manifested not only in the application to criminal ends of the latest resources of experimental science, but also, it would appear, in the adoption by the ultra-modern criminal of the speculative doctrines of anarchism. The scientific burglar, if we may judge from recent events, is beginning to include amongst his impedimenta, as well as the oxyhydrogen blow-pipe and the latest and most costly explosives, a selection of economic and political literature of a similarly modern and destructive character. If this fact is duly established—and there is some evidence of its reality, at all events amongst continental criminals—it suggests some interesting considerations as to the relation between such subversive doctrines and the tendency to crime. Of course, the rough-and-ready explanation is to attribute the criminal conduct to the anarchist theory, but a very little reflection is sufficient to show the inadequacy of any such view. The criminals who hold anarchist opinions are still too few, and the theoretical anarchists who abstain from actual crime are too numerous to give much support to this interpretation of the facts. But though it is probably true that the alliance of the new anti-social doctrines with the old anti-social tendencies is becoming less rare, we shall do well to remember how large an element of the merely fortuitous there is likely to be in their association. The criminal, if he has any turn for speculative thought and feels any need to fit himself with a philosophy appropriate to his career, is apt, like the rest of the world, to let his opinions be coloured very largely by the mental atmosphere of his time. He will lean naturally to the theories of the day that accord with and justify his anti-social tendencies, and these theories may thus come to be regarded as the cause of conduct which in reality is simply the expression of a vicious disposition. Criminals of this type may accordingly profess anarchist opinions, but they are not criminals because of their anarchism; they are anarchists because they are criminals, and because anarchism amongst the doctrines of the hour is that which best harmonises with their parasitic and destructive inclinations. In another age they would have espoused with equal zeal doctrines of a diametrically opposite intellectual tendency but offering a similar outlet for impulses of violence; the *apache* of to-day, who has *Vive l'anarchie* tattooed over his heart and who is eager to do murder in the cause of the social revolution, would have been no less ardent in his zeal for religion and no less eager to imbrue his hands in the blood of heretics had he lived in the Paris of the sixteenth instead of the Paris of the twentieth century. The times and the ideas have changed, but the temper and the passions are the same; and just as the lunatics of our epoch are tormented by wireless telegraphy and Roentgen rays, and are no longer possessed by devils or plagued by malignant imps, so the native and instinctive barbarians of our modern civilisation do

not now profess to be inspired by religious or patriotic ideals, but may justify their lust for violence on the plea of their intense humanitarian aspirations and the ardour of their zeal for social justice. But with us the pseudo-anarchist criminal is still an uncommon type. So far as the average criminal troubles himself about social and political doctrines he is ordinarily very little inclined to extreme views; he is, on the contrary, at all events in this country, strongly conservative in his tastes and opinions, and is much more prone to conventionality than to innovation. Amongst foreign criminals, though conservatism is also the rule, revolutionary views appear to be less exceptional, and PERRIER in his interesting study of prison life ("Les Criminels," Paris, 1900) is able to quote extensively from the anarchist effusions of a number of French criminals; the passages he cites, however, are often more suggestive of deliberate parody than of the spirit of strenuous conviction. It is, however, to be noted as a very suggestive fact that the tendency to adopt these subversive views in a quite serious spirit would appear to be much more pronounced amongst the younger criminals; and on these juvenile delinquents anarchist doctrines seem to exercise a real and very deplorable influence which, according to many competent judges, has had a large part in giving to the juvenile crime of the great continental cities that character of exceptional violence and ferocity which it has so often manifested of late years. No such influence appears to be traceable, at all events as yet, in this country, where, of course, the gospel of anarchism has, fortunately, found but few preachers and few disciples. But the evidence of its effects elsewhere may well warrant some anxiety as to the response which its doctrines may one day elicit from the human material which we continue to breed from degenerate stocks in the slum environment of our towns.

The interest of the question lies, then, rather in the future than in the present. So far there is little reason to think that anarchist ideas have had much real influence on the amount or character of criminality, nor does it appear that we need attach any great significance in this connexion to the fact that some few criminals affect to share the principles of "the party of action." On the other hand, it is impossible to deny that the wider dissemination of these doctrines is likely to have in the future a very real and potent influence in stimulating criminal instincts, and this the more because the conditions of the modern world which have helped to propagate these ideas tend in so many ways to create a social atmosphere favourable to crime. That traditional and unquestioning acceptance of their essential justice, on which law and social institutions depend for so much of their authority, ceases to be possible where laws inspired by widely differing conceptions of justice and institutions, embodying widely differing social ideals, are brought into comparison and conflict, and hence there results a weakening of their restraining influence on the unstable and undisciplined minds of the community. This is in large part the explanation of the well-known fact that crime is specially prevalent at the points of contact of different civilisations; the standard of conduct is generally lower amongst immigrants than amongst native-born inhabitants, it is lower in seaports than in inland towns, and lower on the frontiers of a State than in the interior. And the whole tendency of our age is, of course, to facilitate this interaction of differing and therefore mutually solvent ideals; the religious and political institutions, the ethical standards, the literatures of each country are becoming familiar to all, and this wider outlook tends to produce a detached and critical attitude towards traditional customs and beliefs. A too rapid development of cosmopolitanism thus involves a certain danger of diffusing through all classes a spirit of moral scepticism which impels the weak and the vicious to crime, while at the same time it weakens the confidence of society in its own power and authority and thus begets a feeling of flabby sentimentalism towards the enemies of the social order. These conditions are obviously favourable for the propagation of anarchist theories, and for their speedy transference to the sphere of lawless action; and it is as a warning of this grave danger in the near future, rather than as an evidence of its actual appearance in the present, that we may note with some misgiving the recent signs of an association between anarchism and the more sinister forms of organised crime. Possibly it was with some such feeling as this that the appalling object-lesson has been given of an attack by a large and combined force of police and military upon a house in the metropolis, culminating in the burning of the house with the criminals secreted therein.

# Annotations.

"Ne quid nimis."

## THE NEW YEAR HONOURS.

THE opening of the new year has again been marked by the issue of a list of honours which, though it may be characterised as political for the most part, contains the names of several men distinguished in the world of science. The medical profession receives one baronetcy and six knighthoods, as well as a fair amount of minor honours. The public career of the Right Hon. Leander Starr Jameson, who has been made a baronet, needs no recapitulation from us. The work of his maturer life has not been medical, but we may confidently ascribe his success, and that in no small measure, to the rigorous training exacted by the medical profession from those who would serve her well. Among those who have received knighthood is Dr. Horatio Bryan Donkin, medical adviser to the Prison Commission and Director of Convict Prisons. As a member of the Royal Commission on the Care and Control of the Feeble-minded he did much useful work, while he also assisted the Departmental Committee on the Inebriates Acts and the Treatment of Inebriety. Mr. Frederic S. Eve, another of the new knights, is senior surgeon to the London Hospital and a consulting surgeon to the Evelina Hospital. He is a member of the Council and of the Court of Examiners of the Royal College of Surgeons of England, and his work as a clinician and a pathologist is well known to all our readers. Dr. David Ferrier, who has also received a knighthood, has to his credit original researches in neurology which have been

recognised and appreciated in all parts of the civilised world. He is consulting physician and emeritus professor of neuropathology at King's College Hospital and consulting physician to the National Hospital for Paralysis. Dr. George Newman, chief medical officer to the Board of Education, is the recipient of a well-merited knighthood. The best testimonial to the work which he has done is his suggestive report on the inspection of school children to the Board of Education for the year 1909, which was presented to Parliament at the end of last November. He is a member of the Board of Hygiene Studies at the University of London, a lecturer in public health at St. Bartholomew's Hospital, and is the author of some important publications on public health and bacteriology. Dr. Joseph Michael Redmond, an ex-President of the Royal College of Physicians of Ireland, who has written much and ably on medicine, has been made a knight. A knighthood has also been conferred upon Lieutenant-Colonel David Semple of the Royal Army Medical Corps, Director of the Central Research Institute at Kasauli, whose work on bacterial vaccines and serum-therapy generally has thus received a well-earned official recognition. The Kaisar-i-Hind gold medal has been conferred upon Lieutenant-Colonel Henry Smith of the Indian Medical Service, civil surgeon of Amritsar, and on Major Thomas Walter Irvine of the Indian Medical Service, late residency surgeon at Mewar. Sir John Reynolds Roberts, well known in the textile trade, who has been knighted, has for a long time associated himself keenly with philanthropic and charitable institutions, having presented the Woodford Jubilee Hospital to Woodford, and bountifully supported among other charitable institutions the West Ham Hospital and the Canning Town Hospital for Women. To each of these gentlemen in the name of the profession we offer our hearty congratulations.

## ARCHÆOLOGY AND ANATOMY.

THERE has recently been published by the National Press of the Egyptian Government a lengthy report containing the findings of the first season's work of the Archæological Survey of Nubia. The present work constitutes Part II. of the first annual report, and it consists of one volume of descriptive text and one volume of plates illustrating representatives of the vast collection of bodies examined and some of the more important features of objects of special interest. The field-work of which these volumes are the outcome was carried on during the winter of 1907–08 in the tract of Lower Nubia lying between Shellal to the north and Khor Demhit to the south, and it embraced an examination of burial-grounds upon both banks of the Nile. The object of the expedition was purely utilitarian; there was no attractive glamour of buried treasure, no influence of the spell of the ancient dead, but only a systematic and sober recording of the conditions found in a vast number of burials which would inevitably have been lost for ever in the flooding of the Nubian Nile valley by the raised water-head of the Aswan dam. The rebuilding of the barrage, from its original height of 105 metres above sea level to its new height of 115 metres, meant that a great head of water, destined for the supply of the crops of Egypt, would be held up behind the dam in Nubia. The Nile in Nubia, when all the work is completed, will become a great reservoir of water the limits of which will far outstrip the present margins of the river banks. Owing to the geographical conditions of the Nubian Nile valley this raising of the water level must necessarily destroy practically all traces of the ancient peoples who dwelt upon the river-side, for the narrow strip of water and the sparse ribbon of foreshore provide the only habitable spot in all the country, and here, ever since man inhabited Nubia, succeeding generations have lived and died and been buried. All, save this fertile strip of river bank, is desert, and so along the margins of the river all the populations of Nubia during all the ages have had their home and their burial-place. The flooding of this strip would, therefore, destroy the one site in Nubia in which evidences of the history of the country and its peoples could be found. Unfortunately, much had already been destroyed by the original building of the dam, for above the actual water-line is an area of dampness which is immediately destructive to these ancient burials. The Egyptian Government realised the importance of rescuing the unspoiled burials from the rising water, and the Survey Department organised an expedition consisting of surveyors, archæologists, and anatomists for thoroughly examining all the burial-grounds situated within the danger zone of the new Nile level. The inclusion of anatomists in the expedition—an innovation in the methods of Egyptology—was due to the wise foresight of Captain H. G. Lyons, then Director-General of the Survey Department, and his insistence on the necessity of skilled examination of the human remains receives ample justification in the appearance of the present volume. For many reasons the site of the first season's work was likely to prove a rich field for the anthropologist. The tract of country under examination had been, through all the periods of Egyptian history, a frontier line—the line where black and white met, and where in times of peace they mingled their races by intermarriage, and in times of war killed each other in border raids, or inflicted wounds which show to-day the obvious evidences of their presence. Both for the study of the race question, and for the examination of a large series of wounds and fractures, the district around the Pillars of Konosso—the gateway to the Kingdom of the South—was a favourable site. A vast amount of work was done; no less than 2000 bodies lay exposed at one time in one single cemetery, and many of these bodies were so perfect that their examination took more the form of a post-mortem inquiry than a mere osteological inventory. Burial-places of all periods were excavated at scattered sites for a distance of some 30 miles along both banks of the Nile, and from all these cemeteries—embracing burials dating from some 3000 years B.C. to about the fifth century of the Christian era—abundant material came into the hands of the anatomists. The material was dealt with in a systematic way both at the graveside and afterwards in Cairo and London, and the questions of the race characters of the bodies met with, their age and sex, their anatomical anomalies, and their pathological manifestations are fully discussed in the report. Special attention was also paid to the state of preservation of the body and the agencies—natural or artificial—by which it was "mummified." It was in this particular form of inquiry that such an expedition was likely to furnish material of the highest value to the archæologist, for the skilled anatomical examination of correctly dated material is the method most likely to solve the problems connected with the many curious burial customs of the ancient Egyptians. It must be owned that the findings of the experts engaged in this survey are apt to be somewhat of a disappointment to those who love to wrap everything connected with ancient Egypt in a shroud of mystery and ritual. It was, however, almost inevitable that it should be so. The survey was the outcome of purely utilitarian motives; it was endowed with Government funds and carried out by specialists. It had no interested public to supply with romantic details, no museum to reap its dividend of pots and beads, and no delusions of the mysticism of ancient Egypt to be catered for by the finding of the evidences of grotesque ritual. Some of the glamour may fall from the ideals concerning mummification when it is learned that the extraordinary carelessness of the embalmers,

and their makeshift resources for repairing very badly decomposed bodies, account for most of the curious conditions to which far more picturesque causes have been assigned. It may seem cold and unromantic to learn that the pre-dynastic Egyptian was preserved by the hot sand of his shallow grave, and not by artificial embalming at all; and that his disordered bones are the results of the visits of plunderers in search of his buried pots and beads, and are not the outcome of fantastic cannibalism or quaint ceremony. But, after all, the science of Egyptology will not lose by the exchange of some of its cherished romances for the matter of fact and truer findings of this more exact investigation. It is not only the Egyptologist who may find interest in this report, for much of its matter appeals to the pathologist and the surgeon, and still more to the anthropologist and anatomist.

## THEODOR SCHWANN.[1]

ON Dec. 7th, 1810, there was born at the old city of Neuss, on the left bank of the Rhine, Theodor Schwann, whose name is imperishably written in the history of biology as the founder of the cellular conception of living organisms—a conception which, developed as it was later by Virchow, has done so much to advance our knowledge of living organisms both in health and disease. Schwann studied in Bonn, Würzburg, and Berlin. At the last-mentioned place he came under the influence of Johannes Müller, and he was afterwards for five years assistant in the Berlin Anatomical Institute. During this time he was very closely associated with Müller and with Jacob Henle, and also during part of the time with Matthias Jacob Schleiden. His first original work was a thesis for his doctorate on the subject of the respiration of the developing chick within the egg—a research which was carried out at Müller's suggestion. The five years spent at Berlin proved remarkably fertile in research. Schwann investigated the chemistry of gastric digestion, discovering pepsin and its ferment action. He then carried out researches into the phenomena of fermentation and putrefaction. He demonstrated that fermentation and putrefaction were vital manifestations of lowly vegetable organisms and that "spontaneous generation" was not to be accepted. It is worthy of note that this achievement of Schwann has always been credited to him, while his anticipation of certain of Pasteur's work has been overlooked or forgotten. Researches on the power of contraction of muscle fibres, on the elastic tissue of the arterial walls and other organs followed. He studied the structure of striated and non-striated muscle, and also that of nerve fibres, as the sheath which is called after him still serves to recall. His greatest work was, however, the book published in March, 1839, on "Microscopical Researches into the Agreement in the Structure and Growth of Animals and Plants," an octavo volume of 270 pages, with four copper plates. In 1839 he was called to the Catholic University of Louvain to fill the chair left vacant by the early death of K. J. Windischmann. Afterwards he was called to the University of Liége, and for 40 years he worked in Belgium, though during this period only one scientific work of any magnitude was published by him, as he appears to have devoted his time to the teaching of anatomy, physiology, and comparative anatomy. He died on Jan. 11th, 1882, while on a visit to his brother at Cologne. Schwann's great work in regard to the cellular conception of animal tissues is often wrongly interpreted. It is usually stated that Schleiden discovered plant cells and Schwann those of animal tissues. Certain cell forms had been described before either of these investigators brought forward their results. Müller had described the cells of the notochord and of cartilage, and Henle the epithelial cells on free surfaces. Schwann multiplied these instances and then elaborated Schleiden's view of vegetable cells developed around the nucleus to a general morphological conception of the cellular structure of the whole animal organism. He also enlarged and modified the conception of the cell, and recognised the importance of the nucleus as an essential in its structure. The organism as a whole was thus to be regarded as an aggregate of morphologically similar and equivalent cells. It was therefore no longer possible to speak of a basic vital force within the organism, and Schwann's work gave the final blow to the theory of vitalism. During the decade after the publication of his book the researches of Purkinje, Kölliker, and Remak established the general truth of Schwann's view, while bringing to light fresh facts requiring modification in the conception of cellular structure. The fundamental nature of the cell in biology is now so elementary a fact, and the study of cytology has advanced to such a degree, that it is a little difficult to realise that its discovery is so comparatively modern. The centenary of Schwann's birth should be of interest to all who have studied the history of medicine, for his work was truly epoch-marking.

[1] Abstracted from an article in the Münchener Medizinische Wochenschrift, Dec. 20th, 1910, p. 2703.

## SHUTTLE-KISSING.

THOSE of our readers who can carry their minds back to the literature of childhood will remember the story told by the Brothers Grimm in their collection of folk tales concerning the three ugly fairy godmothers. One of these is described as having the appearance of suffering from what would now be known as acromegaly, and when asked why her under lip was so large she replied, "From licking the thread." Weaving is one of the industrial processes which have not changed except in a few details from the prehistoric times of the first weavers, and as a proof of this we note that an acute controversy is going on in the north of England textile districts as to certain diseases arising from what is known as "shuttle-kissing." This practice is due to the fact that the end of the weft thread has to be passed through a hole in the side of the shuttle, exactly as an ordinary sewing thread is passed through the eye of a needle, and the manner of doing this is for the weaver to apply his lips to the hole and in that way to suck the end of the thread through. This sucking is sometimes done by the weaver himself and sometimes by his "tenter," or assistant. It is obvious that in case either of the operatives is suffering from tuberculosis or possibly some other infectious disease, such infection may easily be conveyed by the medium of the shuttle from the one to the other. More than this, the yarn as wound on the bobbin which rests in the shuttle is covered with fluff, which accumulates in the eye of the shuttle and is inspired when the end of the thread is sucked through, thus setting up pulmonary irritation; and in addition to the irritation caused by the fluff the weft is stated to be treated with china clay and sizing, the latter containing poisonous substances, and particles of both are inhaled in the same way. In the case of coloured fabrics the dyes are an additional source of danger. At first sight it seems as though there should be no difficulty in applying some mechanical contrivance for making the end of the thread pass through the eye, but in alterations in any industrial mechanical process there are two factors which must be taken into account: one, the opposition of the masters, and two, the opposition of the workers. Anything which necessitates increased expenditure or impedes the

rapidity of the process has a tendency to lessen production and so to decrease wages, and such are the difficulties which stand in the way of alteration. Apparently, however, two Preston inventors—Dr. H. A. Murphy of Fulwood and Mr. J. T. Simpson, the engineer of the Preston tramways—have brought out a machine which obviates the sucking of the end of yarn by the mouth. A detailed description of this machine is not before us, but we gather from an article in the *Cotton Factory Times* of Dec. 23rd, 1910, that it is a pneumatic sucker to which the eye of the shuttle can be applied. A representative of the journal in question saw the machine tried "about eight times and it acted perfectly upon seven occasions." Here, then, may possibly be the solution of the problem. If the use of this machine, after its virtues have been confirmed, were made compulsory in all mills within a reasonable time-limit—say, two years (for we learn that that period is the life of a shuttle)—supposing that any alteration in the present style of shuttle had to be made, neither masters nor workmen could complain of any serious grievance, if, indeed, of any at all. The initial cost of setting up the apparatus would not, we understand, be heavy, and it is asserted that it does not in any way lessen the rapidity of production.

## THE BACTERIOLOGICAL STANDARDISATION OF DISINFECTANTS.

IN the January number of the *Journal of Infectious Diseases* two members of the United States Public Health and Marine Hospital Service, Dr. John F. Anderson and Dr. Thomas B. McClintic, describe "a method for the bacteriological standardisation of disinfectants," a method they recommend on the ground that "there is no question but that great fraud is practised in the exploitation of many of the so-called disinfectants that are offered for sale upon the market and are constantly being used by the credulous public. ..... Even physicians and health officers are frequently imposed upon by the manufacturers or vendors of so-called disinfectants or germicides." As the result of experience of the various methods of testing antiseptics, they, as others who have worked at this subject, are not satisfied wholly with the Rideal-Walker method, which was designed to meet the need of standardisation, even when used under proper conditions as to temperature, organisms, media, &c., as only approximately constant results are obtained by different workers familiar with the technique, considerable dexterity, which can only be obtained by practice, being necessary to obtain these results. They point out that far too great latitude is given in so far that the operator, they believe, can arbitrarily select the result that will most advantageously suit the purpose of the experiment, and this without in any way departing from a strictly honest statement of the results. These observers approve of certain modifications made by THE LANCET Commission, and state that "the Lancet method, on the whole, seems to be a distinct advance over the Rideal-Walker, but, nevertheless, it appears to have certain rather serious faults." One of these faults, the lack of a standard scale for making dilutions, has already been corrected in practice. It was, indeed, an obvious fault as soon as the whole of the material collected by the Commission was considered. The second fault is the use of the bacillus coli communis as a test organism involving the use of special media for subcultures. They object also to the use of special apparatus, particularly the spoons, and recommend the use of pipettes graduated in tenths of a cubic centimetre. Those who have used the spoons and special apparatus are satisfied that with very little practice quantities as accurately measured as those to be obtained with a pipette so graduated can be obtained. However, that is a matter of minor importance, and we are glad to find this question of standardisation being taken up with such energy and by such competent workers. The conclusions of these workers are interesting: "However, notwithstanding the objections noted, we believe the Lancet method to be a distinct improvement over any other that has been proposed up to this time, and that with it constant results can be obtained by different workers. After doing considerable work with both the Rideal-Walker and the Lancet method, we came to the conclusion that, on account of the great variation in results that may be obtained with the former method, it was not a method to advise for the examination of disinfectants. While consistent results can be obtained with the Lancet method, we believe, on account of the objections we have stated in the discussion of that method, that this method can be so modified as to greatly increase its usefulness. With this object in view, we have taken up in detail each step and factor concerned in the successful carrying out of the test, and propose the following method, to be described later for the determination of the germicidal efficiency of disinfectants as compared with pure phenol. In proposing this method we desire to make full acknowledgment of our use of the Rideal-Walker and the Lancet methods, especially the latter, as a basis for our work." The factors involved in the examination of disinfectants by these observers are the following: A 24-hour culture of bacillus coli is used; the experiments are always carried out at a temperature of 20° C.; the proportion of culture to disinfectant is 0·1 cubic centimetre of culture to 5 cubic centimetres of disinfectant; the amount of inoculation into subculture tubes is measured by loops instead of by spoons; the medium for subculture is prepared from beef extract according to the American standard and has a reaction of + 1·5, the titration being carried to a point where the pink colour is distinctly perceptible; instead of the wheel a block containing four or six grooves is used. Other minor details are given, including a table of dilutions. Finally they carry out experiments from 2½ to 15 minutes, and state that in determining the co-efficient "after a large number of experiments we have concluded that the method employed by the Lancet Commission, with certain modifications, is the best one for determining the co-efficient—i.e., the mean between the strength and time co-efficients." The whole question has been approached in a very fair and open-minded manner and we welcome the criticisms of our work.

## WORKMEN'S COMPENSATION.

A THOUGHTFUL and suggestive article on the medical aspect of workmen's compensation was published in the *Times* of Dec. 29th, 1910. It is obviously the outcome of a wide experience of this difficult problem, and is well worth careful consideration. The writer maintains that while the principle of the compensation of workmen for accidents is now too firmly established to permit of any change except in the way of further extension, the matter cannot long continue in its present developmental stage. He proceeds to point out a number of directions in which improvement is possible both from the standpoint of the employer and of the workman. He affirms that the medical question is the key to the whole subject, a view from which there would be few to dissent. He then discusses four points which he regards as essential to the proper management of compensation cases—viz., efficient diagnosis, treatment which should be adequate and continuous, the provision of certain accessories of treatment which the workman may be unable to secure, and a mechanism for dealing with permanent or chronic cases. In regard to diagnosis, the suggestion is made that the injured man should be examined by a well-trained surgeon or at a hospital as soon as possible, and that certificates of his state should be obtainable both by the employer and himself. It is probable that this would prevent many doubtful

claims, and that it would exclude many cases of gross disease present at the time of the accident which under the present system are often made the subject of claims as resulting from the accident. The writer of the article is very insistent in urging the importance of immediate treatment, since he believes that many cases of comparatively trifling injury are greatly prolonged owing to defective treatment from ignorance, carelessness, semi-starvation, or even from deliberate neglect of treatment in order to secure greater compensation. He is of opinion that if the employer were compelled to provide efficient treatment for injured employees, and they were equally compelled to submit to it, there would be a decided diminution in the sums paid for compensation. The provision of accessories of treatment, such as apparatus, change of air, and good feeding, it is possible might be met by the establishment of some special fund. A useful suggestion is also made in regard to the chronic or permanently damaged cases—namely, that operative and other treatment should be made available if this is likely to lessen or remove the disability from which the injured man suffers. Lastly, it is urged that the crippled workman should be educated and trained so as to utilise his remaining faculties to some useful and productive purpose, so that he may again become partly or wholly self-supporting. The writer of the article does not claim that his suggestions are yet necessarily within the realm of practical politics, but they are certainly well worth discussion. There can be no doubt that the present system is far from satisfactory, that it tends to encourage malingering, and by its tardy methods is a fruitful cause of neurasthenia and of what has been euphemistically called ergophobia. In any modification it is only fair that the position of the employer should be taken into consideration as well as that of the workman, and the suggestion to which brief reference is made in the article under consideration, that the workman might also contribute to an insurance fund, is one which ought to be carefully weighed, more especially if the employer is made responsible for treatment as well as for compensation.

## "THE CHEMISTRY, PHYSIOLOGY, AND ÆSTHETICS OF A CUP OF TEA."

UNDER the above title we publish this week a special article which throws a new light, we think, upon the chemistry of tea. In an experimental inquiry which has occupied the attention of our Laboratory Commissioners for some months an interesting relationship appears to exist between the chemistry of the cup of tea and the views of the expert taster in regard to the quality of the tea used in making the infusion. Until now chemical analysis of tea has been directed to a mere determination of the amount of caffeine and tannin present in the tea, without regard to the question of their probable existence in a state of combination. The work in our laboratory shows that a strong affinity exists between caffeine and tannin, and that probably the good tea, classed as such by the expert taster, is good because the caffeine and tannin occur together as a definite neutral compound, practically neither caffeine nor tannin being present in the free state. On the other hand, the cheaper commoner classes of tea, according to the expert's category, did not in the experiments we record show evidence of this equilibrium being preserved between the two substances, one or the other being in excess. In the common tea it appears probable that the bitterness of free caffeine is evident to the taster's palate, or the astringency of the free tannin, as the case may be. The good tea is classed as such because there is a definite balance of the two constituents, which, when present in certain proportions which satisfy the requirements of chemical affinity, prove satisfactory to the palate. The probability is that this balance is also of physiological importance, since free caffeine is a poison and free tannin an astringent. Tannin is well known to form insoluble compounds with alkaloids, of which caffeine is one, and it is conceivable that in tea the tannin favourably modifies the effect of this alkaloid. Caffeine in its turn practically negatives the astringent action of the tannin; caffeine tannate, at any rate, is useless for the purposes of an astringent. It would therefore appear that when the taster decides upon the quality of a sample (apart altogether from its flavour) he is guided largely by the fact that in a good tea the caffeine and tannin are present in proportions which mutually extinguish the bad qualities of each other, and these bad qualities refer not only to taste but to physiological effect.

## THE MEDICAL LANGUAGE OF THE THIRD GOSPEL.

THERE may be doubt as to the authorship of the Third Gospel—for what limits can be put to the scepticism of the "higher critic," especially if he be a German?—but there can be none at all as to the medical language that gives character to its style. The great exegetes of the eighteenth century, Bengel and Wetstein, were convinced that only a physician, or one trained for the profession, could have written it, and that conviction gained in strength till 1882, when Dr. Hobart of Dublin collected and reinforced the evidence in a special treatise, which would have been still more convincing had he, in citing his authorities, used the recensions of Littré and Ermerins, instead of the uncritical text of Kühn. Since then "the question has increased rather than diminished in interest," to quote from a treatise in which it has just been re-discussed,[1] and settled on the traditional lines; settled, moreover, in terms not less emphatic than those of the great German theologian Dr. Harnack: "I subscribe to the words of Zahn [an equally sound authority] that Hobart has proved for everyone, for whom anything can be proved, that the author [of the Third Gospel] was a man acquainted with the technical language of Greek medicine—in fact, a Greek physician." And what is true of the Third Gospel is also true of the Acts, written, as this latter book undoubtedly was, by the same hand. In the "We" sections Dr. Knowling finds, with Dr. Harnack, the same medical language as in the rest of the Acts. Let us take the famous passage (xxviii., 8–10): "And it was so that the father of Publius lay sick of fever and dysentery; unto whom Paul entered in and prayed and laying his hands on him healed him (*ἰάσατο*). And when this was done, the rest also which had diseases in the island came and were cured, who also honoured *us* with many honours." Two points are noteworthy in this passage, first, as indicated by Sir W. M. Ramsay, the word "cured" should be replaced by "received medical treatment" (*ἐθεραπεύοντο*), the latter Greek word being in contrast to the former (*ἰάσατο*) and in keeping with the careful use of medical terms in the passage; second, the contrast between St. Paul's healing power and the physician's modest description of his own medical attention to his numerous patients from all parts of the island justifies the same scholar, with Dr. Harnack, Dr. Zahn, and Dr. Knowling, in rejecting the supposition that only prayer, and not professional treatment as a means of healing, was employed. Dr. Knowling discusses many other points as to the language of the Third Gospel, the author of which, as also of Acts, he holds to have been

[1] Messianic Interpretation and Other Studies. By R. J. Knowling, D.D. London: Society for Promoting Christian Knowledge. 1 vol. 1910. Price 3s.

incontestably St. Luke. Replying to the recent criticism of Dr. Clemen, an able German theologian, that "a Greek physician would not have been likely to describe Herod Agrippa as being 'eaten of worms,'" he reinforces the traditional view by the high authority of Professor Macalister, who maintains that the disease in question, as affecting Herod Agrippa, "was a sudden and fatal seizure of some abdominal complaint, accompanied with intense agony and in some way connected with worms," while Sir J. Risdon Bennett surmised that it was acute peritonitis due to perforation of the bowel by a worm—"a rare but not impossible condition." Of these two interpretations Dr. Knowling rightly attaches more weight to that of the Cambridge anatomist, who further points out that σκωληκόβρωτος (eaten of worms) is found in Theophrastus, and that in ancient times such cases as that of Antiochus Epiphanes (II. Maccabees ix., 9) were common enough when injuries were neglected, a view supported by reference to Josephus (Ant. xvii., 6, 5). Another interesting comment of Dr. Knowling is that the "first aid" applied by the Good Samaritan to the man maltreated by brigands was practice quite in keeping with the therapeutics of the first and second centuries, to which he might have added that the "pouring on" (not, as mistranslated in the Authorised Version, "pouring in") of oil and wine after the bandage had been applied was *motivé* by the need of keeping the bandage from stiffening (hence the oil) and of stimulating the anæmic parts (hence the wine). In fact, as indicated by the late Dean Alford, a paste, mainly compounded of these two ingredients, was in medical use in the second century. Dr. Knowling's essay is an able and scholarly vindication of what few but those devoid of what William James calls the "will to believe" will now venture to gainsay—that to a practising physician in the mercantile marine of the Levant, whose name was Luke, must be ascribed the Third Gospel, which, according to Renan, is the loveliest book ever written, and also of the Acts, which Sir W. M. Ramsay esteems for its historical merit as in every sense a masterpiece.

## OCULAR PARALYSIS IN INTRACRANIAL TUMOUR.

IT has long been recognised that in cases of intracranial tumour weakness of one or both sixth nerves—sometimes even of the third pair—may be present in cases in which there is no reason to suppose that these nerves are directly involved in the growth. The usual explanation that has been offered is that the sixth nerves, on account of their long course and exposed position, are particularly liable to have their functions interfered with either by pressure against the bone or by œdema. The same explanation would be applicable to interference with the functions of the third pair, only in such cases a greater degree of pressure would have to be assumed than is necessary to induce interference with the functions of the sixth nerves. Collier has suggested that the antero-posterior course of the sixth nerves may render them more vulnerable by the pushing back of the brain stem, which is shown in so many cases by the protrusion of the medulla, and even by part of the cerebellum, through the foramen magnum, when the intracranial pressure has been excessive. In the last number of *Brain* Dr. Harvey Cushing makes a valuable and suggestive contribution to the elucidation of this point, and as a result of a series of anatomical and pathological studies he submits the view that in certain cases at least the interference with the function of the sixth nerves, especially in cases of intracranial tumour, may be due to strangulation of these nerves by transverse branches of the basilar artery. In support of this view he finds that these arteries, contrary to the usual anatomical description, usually overlie the nerves, that in a series of cases of intracranial tumour the vessels which normally encircle the brain stem often produce a more or less deep grooving of the nervous tissues, that the sixth nerves in many such cases are deeply constricted, and that in a large percentage of cases in which there is found post-mortem grooving of the pons with implication of the nerves, there was recorded during life either subjective diplopia or the actual presence of a convergent squint.

## THE CURRICULUM OF THE MEDICAL STUDENT.

WE publish this week a full report of an important speech made by Sir Henry Morris on the closing day of the winter session of the General Medical Council. An abstract of the speech was published in our columns on Dec. 3rd (p. 1626), but we are glad to place Sir Henry Morris's words before our readers in complete form because the importance of the questions raised is very great, because the solution of these questions is very difficult, and because in our opinion that solution should be no longer delayed. The bald outline of the situation is this. The medical curriculum is overcrowded, so that an unduly small number of candidates for medical qualification are able to obtain registration in the statutory time of five years. Sir Henry Morris, to meet this situation, proposes that the preliminary scientific studies should be pursued by the students at their schools, leaving the five years medical curriculum free for the study of the strictly professional subjects—anatomy, physiology, and medicine in its various branches. One of the strongest points in Sir Henry Morris's arguments is undoubtedly the fact that registration of the medical student is not a compulsory process, so that the General Medical Council has not that complete control over the students' curriculum which some of its published words claim for it. The General Medical Council, on the other hand, holds that, as the supreme authority, under the Privy Council, over the medical education of the student, it cannot willingly sanction any part of medical education being undertaken save under its control. The growing importance in the eyes of headmasters of the scientific training of the schoolboy indicates that much educational and parental feeling will be with Sir Henry Morris in his contention, but those opposed to his view believe, among other things, that the scientific facilities offered by the public schools are not yet as a rule sufficient. These are just the sort of questions that medical men want to see debated, and not only debated but settled, by the General Medical Council.

## FACTORY AND WORKSHOP ACT (1907) IN RELATION TO POOR-LAW ESTABLISHMENTS.

AN arrangement has been made between the Local Government Board and the Home Office with regard to the inspection by inspectors of factories of certain portions of workhouses and other Poor-law establishments. Any laundry or workshop where industrial work is carried on or machinery used, attached to any Poor-law institution, may under the new regulations be inspected by the inspector of factories in charge of the district in which the institution is situated, who will report through the Home Office to the Local Government Board on any point that, in his opinion, requires attention. Where only inmates are employed the factory inspector will report only on the ventilation of the workshop or laundry, the fencing of machinery, the use of dangerous plant or materials, the carrying away of fumes, steam, or dust, and similar matters. Where paid hands, as well as inmates, are employed, the inspector will report on the hours of labour of the paid hands, persons employed only for purposes of supervision or instruction not being regarded as

paid hands. The Local Government Board thinks it very desirable that the factory inspector should, on his visit to a Poor-law institution, be accompanied during his inspection by the master or principal officer in charge, who should afford him every information and assistance, and show him every part of the laundry or workshop in respect of which the visit is made. Where any accident (fatal or other) caused by machinery, explosion, or electricity, or any case of industrial poisoning occurs in any such laundry or workshop, particulars should at once be sent to the factory inspector. Notice should at once be furnished to the factory inspector of the installation of any new machinery in the institution. The new arrangement is obviously most sensible in itself, while it indicates the sound tendency, now existing, towards a more intimate working together of our different Government departments.

## INQUESTS AND DEATHS DURING ANÆSTHESIA.

AT an inquest held on Dec. 12th, 1910, upon a woman who died whilst under an anæsthetic, the coroner, Dr. F. J. Waldo, took the opportunity of explaining his position in holding inquests upon such cases, and invited the opinion of a medical witness on this and other points. As the whole question has been so lately and so thoroughly discussed before the Departmental Committee appointed by the Home Office, whose findings our readers have had the opportunity of perusing, we do not propose to go at length into the matter on this occasion. One or two comments, however, we are minded to pass, in addition to the remarks of the coroner and house surgeon, and especially because the latter offered the opinion, new to us, that the medical press showed insufficient interest in cases of deaths under anæsthetics. We think this is an opinion difficult to arrive at, while it must not be forgotten that the medical press depends to some extent, if its reports are to be quite accurate, for the account of such cases upon the medical men concerned. If the accounts are not forthcoming so freely as the witness in this case appears to desire, then the medical press is necessarily more reticent. Suppression of any such account when it is obviously of scientific or professional interest, is, at any rate so far as THE LANCET is concerned, an unknown event. We do not feel called upon, like the daily press, to narrate the mere occurrence of these deaths. The cases have no value or interest for medical men unless accurate details are supplied. In the lay accounts these are, of course, always wanting. It is of no scientific value to know that on such and such a date a woman died whilst taking ether for an abdominal operation. Such a statement is little more instructive than one to the effect that on another occasion a man took chloroform for an abdominal operation and did not die. But if accurate details as to the time the operation had lasted, exactly what had been done, how the pulse and respiration were acting for some time before the fatal seizure, what loss of blood there had been, how much anæsthetic had been inhaled and how it was administered, and so on, were provided, then the testimony given at coroners' inquests might have some scientific value, and the medical press might find it its duty to report many of the cases. Indeed, it is one of the changes hoped for as a result of the departmental inquiry that in some way the scientific facts associated with every death during anæsthesia may be so collated that a mass of evidence will accrue which will really help future knowledge, instead of, as at present, an inquiry taking place which from the scientific standpoint is valueless. The value of publicity, as making medical men most careful to avoid any conceivable accident, and the danger of publicity, as frightening those who have to undergo operation and who have read of deaths during anæsthesia, were also discussed by the coroner and his witness. Neither of them, however, pointed out what appears to be almost the only merit of the present inquiries—viz., that they safeguard hospitals against the suspicion that would probably exist of them in the minds of the ignorant. Were no such inquiries held the ignorant would often imagine that they were put to the risk of being "experimented upon" in hospitals. Some inquiries are necessary, though the coroner's court is usually an unsuitable tribunal for them.

THE second Hunterian Society's lecture will be delivered at the London Institution, Finsbury-circus, E.C., on Wednesday next, Jan. 11th, at 8 30 P.M., by Mr. D'Arcy Power, on "Loose Cartilages and the Results of their Surgical Treatment." All members of the medical profession are invited to attend.

SEVERAL City Companies and firms, recognising the great value of the public work done by the Royal Society of Medicine, have made grants in aid of the building fund which is being raised by the Fellows to supply the society with a new house.

# THE CHEMISTRY, PHYSIOLOGY, AND ÆSTHETICS OF A CUP OF TEA.[1]

### ULTIMATE *v.* PROXIMATE ANALYSIS OF TEA INFUSION.

CHEMISTRY is not always able to offer a satisfactory explanation of the æsthetic quality of an article. It is doubtful, for example, whether chemical analysis could show any appreciable difference between a good and a bad tobacco, but the æsthetic difference is easy enough to discern. Again, analysis of an elegant château wine reveals comparatively no explanation based on a chemical conception for its refinements; *vin ordinaire*, though very inferior to the palate, shows much the same results on chemical analysis as (say) Château Lafite. The case is the same with tea. Tea apparently is not judged by its chemical qualities, but by its practical qualities, which are determined by the expert tea-taster. In addition to examining the appearance and condition of the leaf he studies very carefully the characteristics of the infusion, its strength or astringency, its flavour, its colour, and its odour. His judgment decides the commercial value of the tea, but whether this judgment means that his valuation is in the economical and physiological interests of the consumer does not appear to have received any extended study.

In most of the chemical literature on the subject it is freely conceded that while a chemical analysis will indicate the strength but not the flavour of the infusion, it is of little use in the valuation of high-priced teas, and this conclusion is drawn in spite of the fact that many thousands of analyses of tea have been made. In the present article we shall attempt to indicate that a very interesting agreement does appear to exist between certain points in the chemical analysis of a tea and the views of the expert tea-taster, provided that the chemical analysis is directed not so much to the percentage amounts of the constituents present as to the relations of these constituents to each other. The question has not been satisfactorily cleared up as to whether these constituents exist in a state of combination, but, if so, it is interesting to ask what are the compounds. What is indicated, therefore, is a proximate rather than an ultimate analysis. To draw an analogy, we have not been content to know merely that there is sodium and that there is chlorine in the sea: we go further, and have found out that these elements are combined in definite quantities to form common salt. Can something of this accuracy be arrived at in respect of tea?

### THE COMMON ACCEPTANCE OF INJURIOUS SUBSTANCES IN TEA.

Undoubtedly the important constituents of tea, as everyone knows, are the alkaloid caffeine (or theine) and tannin. Both, from the physiological point of view, are drugs, the

[1] A contribution from THE LANCET Laboratory.

pharmacology of which is well known, but tannin is generally more unfavourably regarded than caffeine. Tannin, in fact, is commonly looked upon as the source of mischief in excessive tea-drinking. Text-books frequently state that when the tannic acid which tea contains occurs in large quantities, the pepsin of the gastric juice is precipitated, and that this is one of the reasons why tea is not a suitable beverage for persons suffering from gastric disturbances, while among the more prominent symptoms of excessive tea-drinking are gastric disorders, cardiac distress, and a variety of nervous symptoms, such as excitability, sleeplessness, and muscular incoördination. It is a remarkable commentary upon the disfavour with which tannin in tea is looked upon that some of the finest teas (from the tea expert's point of view) upon the market and commanding high prices are just those which contain the largest amount of tannin. A cheap Ceylon tea, for example, was found to yield 5·46 per cent. of tannin in the cup, while a high-priced Ceylon tea showed 7·56 per cent. of tannin. Similarly, a cheap Indian tea gave 5·88 per cent. of tannin to the infusion, and a high-priced Indian tea gave 10 per cent. of tannin, the teas in each case being prepared under analogous conditions. It is again an interesting commentary on the bad name which is given to tannin in tea that a dose of red wine contains more tannin than does a dose of tea. Half a pint of claret, for example, contains on the average 10 grains of tannin, while a cup of tea made with a teaspoonful of leaf (average 60 grains) would contain 6 grains only of tannin. Some teas would, however, yield only half this quantity of tannin in the cup. Tannin in wines, moreover, is in the free active state, in tea it is neutral or fixed. All infusions of tea are alkaline, and they are incapable in that state of acting as a tanning agent. Good teas do not precipitate proteins, nor will they make leather, as is so popularly assumed, the fact being that the tannin in tea is engaged in other directions—an engagement from which it is difficult to divert it. To resume our analogy with which we started, we do not expect common salt solution to have bleaching properties on account of the chlorine contained in it, for we know that the attention of the chlorine is confined completely to the sodium. In the same way the tannin in most teas is engaged, and so rendered inoperative as an astringent or tanning material.

### Evidence of Caffeine and Tannin Existing as a Compound in Tea.

When a warm tea infusion is just acidified with a weak solution of hydrochloric acid the colour of the infusion changes from the well-known reddish-brown to a much lighter colour. At the same time a flocculent precipitate is formed which increases in quantity as the infusion is cooled. The amount of precipitate collected varies with different teas, the China teas yielding the least and the Indian teas the most. The precipitate proves to contain, amongst other things, tannin and caffeine, and, whatever kind of tea is employed, a ratio of 1 to 3 of caffeine to tannin is generally found, which indicates that there is present a real caffeine tannate, having perhaps a formula approximating to the following:—

$C_8H_{10}N_4O_2$ (Caffeine.) $C_{20}H_{20}O_9$ (Quercitannic acid.)

This experiment points distinctly in favour of the conclusion that an infusion of tea is essentially a solution of caffeine tannate in an alkaline medium. When the alkaline salt present in tea is neutralised by the addition of a weak acid, caffeine tannate is gradually thrown out, this substance being only slightly soluble in cold, but readily soluble in hot, water. Now, an infusion of tea as soon as it reaches the acid contents of the stomach would undergo a similar change—that is to say, the human organism is then dealing with a fluid containing part of its caffeine tannate in suspension and part in solution. As will be presently pointed out, this is an important finding, for it indicates that we may not be dealing with either caffeine or tannin in the free state in tea at all. At all events, we have never found in teas classed as of good quality by the tea expert an excess of free tannin or free caffeine. We have, however, found in teas classed as common or indifferent caffeine and tannin dissociated from each other. The foregoing simple experiment suggests, therefore, that the quality of a tea may rest on the question as to whether its constituents are balanced.

### The Estimation of Caffeine Tannate in Tea.

Considerable difficulty was found in hitting off an analytical method which would successfully separate the whole of the caffeine tannate of the tea infusion as such, so that it could be submitted to independent examination; but after some months' experiments a method was obtained which gave very instructive results. It consisted shortly in saturating the infusion with ammonium sulphate, which completely separates the caffeine tannate, which may then be dissolved in absolute alcohol, the alcohol evaporated to dryness, the residue weighed and further examined as to the proportions of caffeine and tannin it contained. (Free tannin itself is soluble in a saturated solution of ammonium sulphate.) In Table A we give the results obtained with various teas when examined by this method.

TABLE A.—*The proportion of Caffeine Tannate in various Tea Infusions and the Composition of the Tannate.*

| Description of tea. | Caffeine tannate or ammonium sulphate precipitate after dissolving in alcohol. | Caffeine found in precipitate. | Tannin found in precipitate. | Approximate ratio of caffeine to tannin in precipitate. |
|---|---|---|---|---|
| | % | % | % | |
| China. | 6·00 | 1·44 | 4·56 | 1 to 3. |
| China. | 6·80 | 1·72 | 5·08 | ,, |
| Indian. | 6·52 | 1·64 | 4·88 | ,, |
| Ceylon. | 4·48 | 1·12 | 3·36 | ,, |
| Indian. | 10·20 | 2·60 | 7·60 | ,, |

It would appear from this table that in tea we are dealing with a definite compound of caffeine and tannin, for although different types of teas were examined, yet the same caffeine-tannin compound was obtained, showing always a constant ratio (1 to 3) of caffeine to tannin. Caffeine tannate is thus probably a definite body, but it does not follow that the whole of the tannin or of the caffeine present in tea infusion is necessarily combined with one or the other, as the case may be. Part certainly is, and in some cases, as will presently be shown, the whole of the caffeine and tannin is united.

### Caffeine Tannate Prepared in the Laboratory.

The next step indicated was to prepare caffeine tannate in the laboratory and to estimate the proportion of the two constituents in the compound. This was done, and the results gave support to the idea that caffeine and tannin form a definite compound containing 1 part by weight of the former, combined with 3 parts by weight of the latter.

Solutions respectively of caffeine and tannin were prepared, each containing 1 per cent. of the pure substance. It is obvious that if 1 part of caffeine combines with 3 parts of tannin to form a compound, 1 volume of the above caffeine solution when added to 3 volumes of the tannin solution should give this compound with neither caffeine nor tannin in excess. A better test, however, would be in the one case to add an excess of caffeine in the mixture and in the other an excess of tannin, and determine in each case what the excess of free substance was. The first experiment consisted in adding 3 cubic centimetres of a 1 per cent. solution of caffeine to 30 cubic centimetres of tannin solution (1 per cent.). A milky fluid resulted which cleared up on heating; it was evaporated to dryness on an inert distributing surface, kieselguhr, and the residue was extracted with ethyl acetate. The ethyl acetate extracted 0·210 gramme of tannin out of 0·30 gramme added, leaving a difference of 0·09 tannin combined with the caffeine. The caffeine added was 0·03 (3 cubic centimetres of a 1 per cent. solution). Thus there was formed a residue containing 1 of caffeine to 3 of tannin. In another experiment it was found that 30 cubic centimetres of tannin solution (1 per cent.) required exactly 19·2 cubic centimetres of N/10 caustic soda to neutralise it, using phenol-phthalein as indicator. When, however, 3 cubic centimetres of a 1 per cent. solution of caffeine was added, the mixture required 14·4 cubic centimetres of N/10 caustic soda for neutralisation. The difference, 4·8 cubic centimetres, represents the amount of tannin which had combined with the 3 cubic centimetres of caffeine solution added (= 0·03). By calculation it was found that 4·8 cubic centimetres of N/10 caustic soda represent 9 cubic centimetres of the tannin (1 per cent.) solution (= 0·09).

and that therefore, again, caffeine had combined with tannin in the proportion of 1 of caffeine to 3 of tannin. This experiment was several times repeated with in each case the same result. Moreover, in some experiments the prepared caffeine tannate was split up by lead oxide and the caffeine separated and weighed. The tannin was estimated by adding dilute sulphuric acid to the lead residue and extracting with ethyl acetate, or determining the tannin after adding an excess of bicarbonate of soda direct by means of a standard iodine solution. Again 1 part of caffeine was found combined with 3 parts of tannin.

Caffeine has a very remarkable affinity for tannin, since in one experiment we found that it will combine with the tannin of leather and reduce it to the soft pulpy condition of untanned hide again, caffeine tannate being found in the solution.

### VARIATIONS IN THE AMOUNTS OF CAFFEINE TANNATE IN TEA.

The next question calling for investigation was, to what extent was the caffeine in tea infusion combined with tannin, or the tannin combined with caffeine? As subsequent experiment proved in many teas (curiously enough all those regarded by tea experts as of good quality), it was found that the *total* caffeine and *total* tannin occurred in the ratio of 1 to 3. In many others there was not this balance, caffeine in some cases being in excess, while in others tannin predominated. The conclusion is irresistible that the physiologically best teas are those in which the total caffeine and total tannin occur in the ratio of 1 to 3—in which, in fact, the caffeine is completely neutralised by the tannin or the tannin by the caffeine, and that therefore they are present as caffeine tannate, and neither in the free state.

Since the above results were obtained we have seen a report, issued from the Imperial Institute, in which the analyses of various teas grown in British Central Africa are given. The following are the results in regard to caffeine and tannin:—

| | Caffeine. | Tannin. |
|---|---|---|
| Tea No. 1 | 3·68 | 10·50 |
| ,, No. 2 | 3·35 | 9·50 |
| ,, No. 3 | 3·08 | 10·30 |
| ,, No. 4 | 3·54 | 10·40 |
| ,, No. 5 | 3·19 | 10·60 |
| ,, No. 6 | 3·22 | 9·80 |

It is remarked that "these results show that the samples of tea are of good quality," and in many instances it will be noted that the ratio of caffeine to tannin is very close to 1 to 3.

### THE PHYSIOLOGICAL IMPORTANCE OF A CHEMICALLY BALANCED TEA AND THE VIEWS OF THE TEA-TASTER.

Tannin may therefore prove after all a blessing in tea, inasmuch as it keeps the assimilation by the human organism of the heart stimulant, caffeine, under control. Similarly, when the constituents are balanced caffeine may be expected to negative entirely the astringent action of the tannin. On the other hand, an excess of either constituent is clearly to be avoided, as each would then be free to exert its own specific action. The points raised by these considerations are clearly of the utmost physiological importance, and we hope to discuss them more fully later. In the meantime, if it comes to be proved that the best teas, physiologically speaking, are those in which the caffeine and tannin are chemically balanced, that they occur completely absorbed by one another as caffeine tannate in which 1 of caffeine is combined with 3 of tannin, it will be interesting to see how far this view agrees with the judgment of the expert taster. Has what he regards as quality in a tea, and therefore a tea entitled to a high price, anything to do with the balance of caffeine and tannin to which attention has been drawn? It is quite clear that caffeine tannate possesses neither the astringent taste of free tannin nor the bitter flavour of free caffeine. Caffeine and tannin serve, not merely as antidotes to each other on the score of taste, but most probably on more important scores also. Tannin is, for example, a well-known antidote to most of the poisonous alkaloids, and caffeine may be reckoned as one of these. It is a remarkable fact that hitherto the results of the chemical analyses of teas have led to nothing in common between the chemist and the taster. Quality in tea so far has been beyond the reach of the analyst to adjudicate upon. He has said what the amounts of caffeine and tannin are, but these mere statements have thrown no light upon the æsthetic and commercial value and quality of the tea submitted to examination. Distinct hope, however, may come from the theory of balance applied to the caffeine and theine in tea which we have put forward. At all events, there are some interesting points of agreement between the expert tea-taster's view and this theory. In Table B will be found a number of analyses of teas which before they were submitted to analysis were each described by the expert taster in terms regarding their æsthetic quality and commercial value. We may say, at the outset, that in by far the majority of instances we were able to show subsequently that his view of the quality of the tea proved to be based upon the question whether or not that tea contained its tannin and caffeine in balanced quantities. Whenever the tea showed a preponderance either of tannin or caffeine over and above that required by the combination of caffeine 1 and tannin 3 his verdict was invariably "a common tea" or "an indifferent tea." When, on the other hand, there was neither caffeine nor tannin present in quantity exceeding what the compound of them contains (caffeine tannate), then the tea was pronounced as of good quality. In other words, the expert, by his palate and other considerations, says, in effect, the caffeine and tannin in such and such a tea are not balanced, therefore it is not a fine tea, or the caffeine and tannin are present in a combined state and therefore the tea is bland, smooth, and a good one. In the case of an inferior tea he probably tastes either free caffeine, which is bitter, or free tannin, which is astringent, and promptly calls the tea unsuitable. In the case of the fine tea he tastes neither, but a combination of them, which is neither astringent nor bitter. When contrasting chemical results with the skill of the taster a complete concordance can hardly be expected, but Table B shows broadly that the palate of the taster is largely influenced by the chemistry of the tea submitted to his judgment. To go back to the old analogy, common salt has a neutral smooth saline taste, but if either of its constituents is in excess the taste would be repulsive—viz., that of caustic alkali on the one hand, or of a corrosive acid on the other.

On consulting Table B it will be found that, generally speaking, the common (and cheap) teas contain an excess of caffeine over tannin present, but the good teas (high-priced) invariably contain an excess neither of caffeine nor of tannin, these being present in complete combination in the form of caffeine tannate. It is possible that by a careful system of blending these excesses could be to some extent avoided, but we must defer for a later stage the consideration of blending. It is interesting to observe also that proteins increase with the quality of the teas, and as proteins form an insoluble compound with tannin the evidence is thus strengthened in favour of no free active tannin being present in good tea-infusions. It is well-known, also, that teas have to be adapted to the various characteristics of the waters of different neighbourhoods, and it is conceivable that the balance of caffeine and tannin may be disturbed by, for example, chalk, which would tend to combine with tannin and liberate free caffeine. Here, also, the art of blending possibly aims at securing the equilibrium of tannin and caffeine already pointed out, taking into consideration the effect of a hard or soft or peaty water on the soluble constituents of the tea. In this connexion it is interesting to record that the tea-taster has samples of the water of different localities sent to him so that he can decide which tea gives the best result with it. There is only one instance in the Table (B) in which tannin is in serious excess, and that, curiously enough, is green tea, and in addition there is present 1·28 per cent. of caffeine not combined with tannin. *Prima facie* it is doubtful whether tannin is ever an injurious constituent of ordinary teas; it is much more likely that caffeine is the mischief-maker, especially when a considerable portion of that alkaloid does not occur combined with tannin, as is invariably the case with common cheap teas. It is questionable, too, whether the powerful are more injurious than the delicate teas so long as the caffeine and tannin are in balanced quantities—are, so to speak, in physiological equilibrium. The danger of the rich tea (although of good quality) is taking an excess of it, which can, of course, be avoided by using it sparingly, and thereby

TABLE B.—*The Analysis of Teas, with Special Reference to Caffeine Tannate.*

| Description of tea. | Prices per lb. | Caffeine tannate. | Tannin combined with caffeine. | Caffeine combined with tannin. | Total tannin. | Total caffeine. | Caffeine not combined with tannin. | Tannin not combined with caffeine. | Extract. | Alkalinity of ash as $K_2O$. | Protein. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| China (common) ... ... | Used in blends from 10*d.* to 1/2 (retail). | 3·60 | 2·70 | 0·90 | 3·78 | 2·40 | 1·50 | 1·08 | 22·00 | 0·96 | — |
| ,, ,, ... ... | | 3·60 | 2·70 | 0·90 | 3·61 | 2·12 | 1·22 | 0·91 | 21·20 | 1·92 | 0·20 |
| Assam ,, ... ... | | 8·00 | 6·00 | 2·00 | 5·79 | 3·52 | 1·52 | 0·21 | 27·20 | 2·30 | 0·90 |
| Ceylon ,, ... ... | | 6·32 | 4·60 | 1·58 | 4·60 | 2·52 | 0·94 | None. | 24·80 | 1·72 | 0·70 |
| Assam ,, ... ... | | 6·60 | 4·95 | 1·65 | 5·83 | 3·20 | 1·55 | 0·93 | 30·00 | 1·34 | 1·00 |
| ,, ,, ... ... | | 5·80 | 4·35 | 1·45 | 4·62 | 2·56 | 1·11 | 0·27 | 22·00 | 1·34 | — |
| ,, (good) ... ... | Used in blends from 1/4 to 1/8 (retail). | 7·88 | 5·91 | 1·97 | 5·88 | 2·77 | 0·80 | None. | 27·00 | 1·92 | 1·10 |
| ,, ,, ... ... | | 9·80 | 7·35 | 2·45 | 7·30 | 3·40 | 0·95 | ,, | 32·00 | 1·53 | 1·00 |
| Ceylon ,, ... ... | | 9·04 | 6·78 | 2·26 | 6·88 | 2·88 | 0·62 | 0·10 | 30·80 | 0·76 | 1·20 |
| China ,, ... ... | Used in blends from 1/6 upwards (retail). | 6·80 | 5·08 | 1·72 | 5·09 | 2·40 | 0·68 | 0·01 | 24·00 | 1·34 | — |
| Assam ,, ... ... | | 10·20 | 7·65 | 2·55 | 7·60 | 3·32 | 0·77 | None. | 30·00 | 1·92 | 1·00 |
| Ceylon ,, ... ... | | 10·12 | 7·59 | 2·53 | 7·56 | 2·60 | 0·07 | ,, | 34·00 | 1·72 | 1·70 |
| Assam ,, ... ... | | 15·36 | 11·53 | 3·84 | 11·82 | 4·00 | 0·16 | 0·29 | 35·20 | 1·92 | 1·70 |
| ,, ,, ... ... | | 10·40 | 7·80 | 2·60 | 7·56 | 3·00 | 0·40 | None. | 30·80 | 2·11 | 1·10 |
| Indian ,, ... ... | | 9·60 | 7·20 | 2·40 | 7·14 | 3·20 | 0·80 | ,, | 28·00 | 1·53 | 0·60 |
| Green tea ... ... ... | 2/8 | 5·60 | 4·20 | 1·40 | 8·82 | 2·68 | 1·28 | 4·62 | 30·00 | 2·11 | — |

The above percentage results are based on the use of 5 grammes of tea in 400 cubic centimetres of boiling water, the infusion being poured off after five minutes.

effecting an important domestic economy. So many people seem to disregard the fact that the powerful teas should be employed in quantities consistent with their rich quality. In the above analyses many of the good teas present twice the physiological value of the common teas, although their price may be only 50 per cent. more, if as much. It is illogical, therefore, to adopt the teaspoonful as the standard of measurement for all descriptions of teas; the dose might with advantage be reduced to a decidedly smaller quantity in the case of balanced teas which give a rich infusion. It is commonly asserted that when tea is infused for a long time there is much more tannin dissolved in proportion to the caffeine. That may be true for teas of common quality or cheap teas, but in one experiment we made it does not appear to hold good for a tea of good quality. A good Indian tea, for example, gave on 5 and 15 minutes' infusing respectively the following results:—

| | 5 minutes (per cent.). | 15 minutes (per cent.). |
|---|---|---|
| Caffeine tannate ... ... ... ... ... | 10·40 | 10·68 |
| Tannin combined with caffeine ... ... | 7·80 | 8·73 |
| Caffeine combined with tannin ... ... | 2·60 | 2·68 |

It will be observed that more tannin was extracted but more caffeine was extracted also. In reality, with a good tea more caffeine tannate and not tannin is extracted. The ratio 1 in 3 of caffeine to tannin is, in fact, preserved in the 15 minutes' infusion. The suggestion of this is that it matters little whether a good tea be infused for a longer time, but, of course, a stronger liquor is obtained, which should be diluted or less tea employed. This consideration hinges again on the question of blends, and at the present time we are engaged on further analytical work on the question with the view of ascertaining whether the blender unconsciously aims, after all, at producing the equilibrium of tannin and alkaloid to which we have referred. At the moment it is premature to regard the case which we have put to be absolutely proven, but the investigation so far has certainly brought to light an interesting set of facts based on chemical analysis which show a remarkable agreement with the views of the expert tea-taster. We should expect to find from these results, for example, that when he regarded a tea as one of good quality, the caffeine and tannin would appear practically entirely in the form of a combination, caffeine tannate. In the case of a tea which he puts aside as common or indifferent, we should expect to find that the caffeine present was not in affinity with the tannin. Possibly we are dealing with young tender leaves when the caffeine and tannin are found in equilibrium, and old or coarse leaves when that is not the case. This conclusion is interesting in view of the fact that tannin happens to be an antidote to alkaloids in general, and commonly forms with them substances which are at any rate insoluble in the stomach, though they would be absorbed in the bowel. Is it not possible that the absorption of caffeine is less rapid when it is present with an equivalent of tannin, and that, therefore, the common teas which contain caffeine not in combination with tannin easily lead to theinism, caffeine poisoning? After all, caffeine is a powerful drug, increasing the strength and rapidity of the heart's action and the blood pressure, and it is possible that its potency in this direction is favourably modified when it is exhibited with an exact equivalent of tannin, as is the case with teas passed by the expert as of good quality, "fine," and so forth. Both constituents can behave badly physiologically when in the free state, but when in a mutual combination their vices are lost in the marriage and their virtues come uppermost. That seems to describe the case of a good tea. Tannin cannot "tan" in the presence of an equivalent of caffeine, and the poisonous qualities of caffeine are very probably diminished in intensity when it exists entirely as tannate.

We reserve for future publication further researches on the subject which are proceeding.

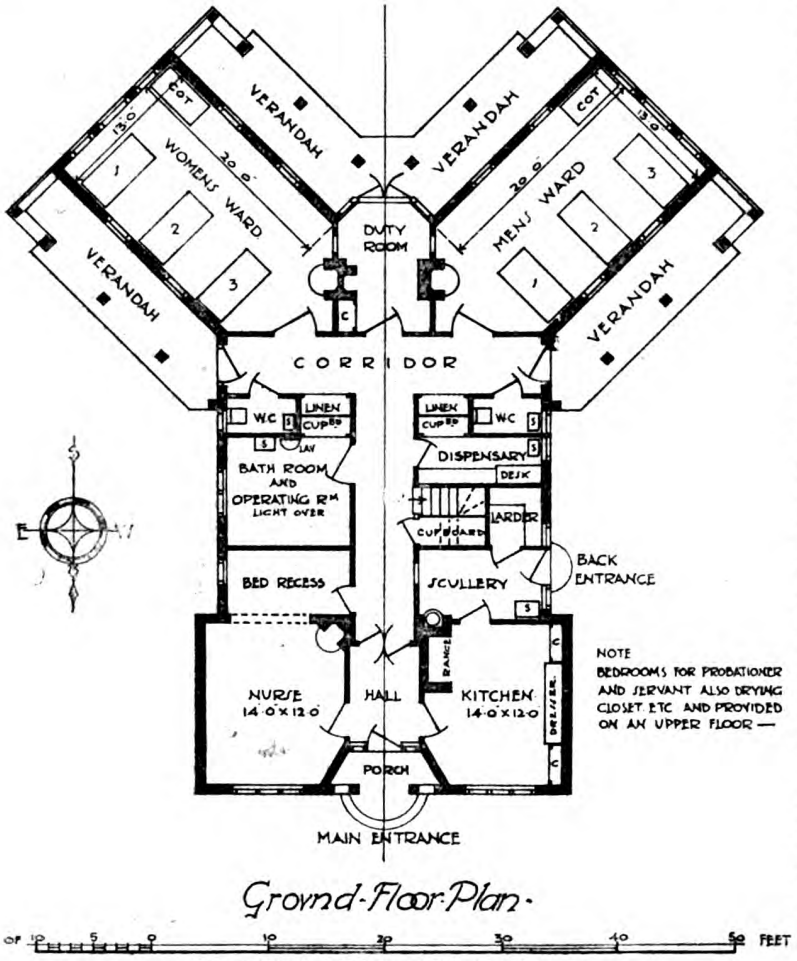
CHELSEA HOSPITAL FOR WOMEN.—The annual entertainment organised by the ladies' committee for the patients and nurses was given at the hospital on Thursday, Dec. 29th, when the visitors were received by Viscountess Esher, the vice-president of the ladies' committee. After tea a clever conjuring entertainment by Mr. Lambert was much enjoyed, and later there was a distribution from a Christmas tree laden with useful presents for the inmates, which were the gift of Dr. W. H. Fenton, senior surgeon, and Mrs. Fenton. On Saturday last the Christmas festivities were brought to a close by a concert arranged by Mr. Michael Fenton with the help of the following: Miss Millie Hall, Miss Barbara Zitzer, Mr. Alec Aris, Mr. Ivan Ayscough, and Mrs. Frank Snow. The work in the wards of the hospital during the past year shows a marked increase, the number of admissions being 870, as compared with 803 for 1909. Provision for those of small means, under conditions which will allow of some privacy of treatment, are features marking this hospital out for charitable support. The treatment of the patients is supplemented by reception at a convalescent home at St. Leonards-on-Sea. The regular income is much in need of increase, and donations and legacies are earnestly solicited towards rebuilding the out-patient department and the nurses' home, the present accommodation being entirely inadequate. Contributions will be gratefully acknowledged by the treasurer, Mr. Henry E. Wright, or the secretary, Mr. Herbert H. Jennings, at the hospital, Fulham-road, S.W.

# A WELL-PLANNED COTTAGE HOSPITAL.

THE small cottage hospital at Wells, Norfolk, which has been erected by the Holkham tenantry as a memorial to the late Earl of Leicester, was recently opened by the present Earl. Situated near the seaport town of Wells, this hospital will supply an isolated district of north Norfolk, over 30 miles from the county institution at Norwich, the population of Wells and the neighbouring agricultural villages being about 7000. Inquiries are often made from us as to the best way of meeting the needs for a cottage hospital in just such a community. Mr. Leslie T. Moore, A.R.I.B.A., of Raymond Buildings, Grays Inn, W.C., the architect, sends us a description of the building, of which the illustration shows the general scheme.

The building provides for six adult patients and two cots, and has been erected for the moderate sum of £1000, including the sinking of a well and fencing the site, which was generously given by Lord Leicester. The plan of the building is somewhat original in its outline, being in the shape of the letter "Y," the wards forming the short arms, while the administrative portion of the building forms the stem with main entrance from the north. All the advantages of aspect and cross ventilation are thus gained for the wards, which are 12 feet high and give a cubic capacity of 1000 feet per patient. They are amply ventilated by the large windows in the end gables, in addition to those at the side of each bed. Between the wards a small duty-room is arranged for supervision, from which there is at the same time command of the corridor. Verandahs for convalescent patients are so planned that from whichever direction the wind blows shelter can be obtained. The ground floor throughout is laid with non-absorbent jointless flooring with core skirtings. Internally all mouldings and projections likely to harbour dust and germs have been dispensed with. The wards and corridors have an impervious dado painted white, with washable enamel paint, the whole of the joinery being similarly finished. Over a portion of the building an upper floor provides bedrooms for a probationer and servant, also a drying closet and store-rooms for patients' clothes, &c. Special attention has been given to the sanitary fittings, the best white porcelain enamel fireclay being used throughout. The cubic capacity of the wards as built at Wells is 3600 cubic feet. All the windows to the wards are double hung sashes and are fitted with Dr. Hinkes Bird's patent deep bead at bottom admitting the air between the meeting rails in a vertical direction. The windows to the administrative portion of the building are of the cottage casement type, giving a homely appearance. The transverse corridor with external doors to verandahs at either end forms a "cut off" between the wards and offices. The fires are of the barless slow-combustion type with green glazed fireclay mantles and hearths. The bathroom was especially designed rather larger than necessary and with a top light so that emergency operations could be undertaken. The walling generally is of brick built in cement, the outer walls being 9 inches thick with 3-inch cavity, and Silverlock's method of bond being adopted. The external face of the walling is rough-casted in cement.

In response to our inquiry as to the possibility of effecting economy in the cost of such buildings and the additional expense of enlargement Mr. Moore writes as follows: "Concrete blocks could be substituted with a slight saving in cost if gravel of a suitable nature could be obtained on the site of building, but the advantages of a hollow wall, which are all-important, would be sacrificed. Further economy might be effected if Bridgwater tiles or other patent roofing were adopted in place of the hand-made tiles that were used in this instance. But such roofing would be detrimental to the general appearance of the building. The plan especially adapts itself for future extension of the wards, which could be lengthened and another bed added to each ward for an extra cost of about £125, making four male and four female adult beds and two cots. But any further extension would require larger administrative offices, and would consequently necessitate a greater outlay in proportion."




Cottage Hospital, Holkham, Wells, Norfolk.

A BRAVE MEDICAL MAN.—At Penzance, on Dec. 19th last, Colonel Cornish, on behalf of the Royal National Lifeboat Institution, presented Mr. Richard Coger Lawry, L.R.C.P. Lond., M.R.C.S. Eng., with the certificate of the Royal Humane Society. Mr. Lawry, with two other gentlemen, rescued a bather from drowning off Laregaw, Cornwall, on August 6th, 1910.

# Public Health.

## REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

*On the Sanitary Circumstances and Administration of the County Borough of Middlesbrough, with Special Reference to the Persistently High General Death-rate and Infantile Mortality and their Causes*, by Dr. W. W. E. FLETCHER.[1]—In this report Dr. Fletcher gives the results of an elaborate study of the statistics of mortality in Middlesbrough for recent years and of the conditions associated with some unusually high figures which appear characteristic of that town. Middlesbrough is almost entirely inhabited by a working-class population, and has grown rapidly with the development of the industries which resulted from the utilisation of the ironstone in the Cleveland Hills. There are now some 107,000 inhabitants—a population nearly double that of 1881, and more than four times that of 1861. The general death-rate is persistently higher than that of the "great towns" dealt with by the Registrar-General; the mean annual crude death-rate for the 12 years 1896–1907 was 16·5 for the latter and 20·1 for Middlesbrough. The discrepancy becomes greater when corrections are made for the age and sex distribution of the populations. From a detailed analysis of the causes of death in 1907 Dr. Fletcher ascertained that an excessive mortality existed from the "zymotic" group of diseases (notably from diarrhœa and enteric fever) and from pneumonia, while there was also a considerable excess of deaths grouped as due to "diseases of the nervous system" and "atrophy and debility." In the five years 1904–1908, the mean annual death-rate from diarrhœa per 1000 living under one year, was 30·8 for Middlesbrough, as against 8·9 for England and Wales. In reviewing the causes of this excess of diarrhœa the report lays stress upon the frequent inability of mothers to suckle their infants owing to insufficiency of food and upon the use of tinned separated milk in baby-feeding. From enteric fever the annual death-rate per 1000 inhabitants during the same five years was 0·17 in Middlesbrough, as against 0·10 in England and Wales. The difference in mortality ascribed to pneumonia is still more conspicuous; the Middlesbrough mean annual rate of 3·41 per 1000 is more than double the corresponding rate for the country generally. "Pneumonia," in the statistical sense of the report, includes both broncho-pneumonia of children, which prevails largely during the winter, and lobar pneumonia, which was found to predominate in the spring. In 1888, when Middlesbrough suffered from a special prevalence of pneumonia, investigated for the Local Government Board by the late Dr. E. Ballard, the incidence of the disease was essentially upon middle-aged and old persons. No very disproportionate incidence upon any one age-group has, however, characterised the fatal "pneumonia" of Middlesbrough in recent years. Compared with England and Wales, the Middlesbrough figures show a higher actual death-rate among females, but a much lower rate relatively to the males. The conditions of work in iron-smelting lead to such sudden changes in body temperature and give such facilities for taking chills that the excess of pneumonia might have been expected to be conspicuous among the ironworkers. No such excess could be demonstrated on statistical evidence. Dr. Fletcher, however, expresses doubts as to the sufficiency of the occupational returns available for the purpose. The clinical and bacteriological characters of the pneumonia at present met with in Middlesbrough do not appear to be exceptional. Dr. Fletcher considers that the fact that the excess runs through all age-groups indicates that the whole population is more or less uniformly affected by some influence which appears to predispose individuals of each age-group, but more especially the males, to attack. At present the nature of this influence cannot be definitely stated. When, however, the conditions of life of the population are considered in relation not only to pneumonia but also to enteric fever, diarrhœa, and other diseases in which mortality is excessive, it is difficult to resist the impression that common factors exist in the insanitary surroundings of dwellings, the bad ventilation of houses, overcrowding, want of sufficient and wholesome food and of proper clothing, exposure to inclement weather, and other deleterious conditions, which, as Dr. Fletcher shows, prevail to an unusual extent in the town. The report contains a variety of statistics as to age and sex distribution of the diseases referred to, which will be found useful for reference. Some of the deficiencies of sanitary administration to which Dr. Fletcher refers appear to have been rectified by the town council before the publication of the report, but there is evidently need for an active policy being undertaken by the municipal authorities in regard to housing, health visiting, nuisance abatement, improved water filtration, and other matters, in order to reduce so far as in their power the unenviable pre-eminence of Middlesbrough in respect of sickness and mortality.

*On Occurrences of Enteric Fever in the Folkestone Urban District*, by Dr. R. W. JOHNSTONE.[2]—Dr. Johnstone in this report presents a remarkable series of facts, implicating a typhoid carrier as the cause of no fewer than five outbreaks of enteric fever, associated with milk, between the years 1893 and 1909. The man in question, a milker, N., was ascertained to be a carrier in 1909, when the typhoid bacillus was isolated from the fæces on five separate occasions on which samples were taken. He was about 60 years of age and enjoyed excellent health. To his knowledge he had never suffered from enteric fever, although he had been attacked by a severe illness of an uncertain kind about 30 years before. He had become a regular milker in 1893, when he came to a farm in the Elham rural district, close to Folkestone, and from that time until August, 1909, he had been employed on five farms near to the town. At three of these farms enteric fever broke out during N.'s stay, and cases of enteric fever occurred in the neighbourhood of all five of them whilst he was there. On the milk round of each of the five farms there was undue prevalence of enteric fever at intervals during the time N. worked there, and no such prevalence was observed either before his advent or after his departure. During the period 1896–1909 64 per cent. of the cases of enteric fever infected in Folkestone were persons who had taken milk from a farm in which N. was working. The outbreaks had attracted considerable attention, and their origin and relation to the milk-supplies had been fully investigated as they occurred. The suspicion that the milker N. was in some way or other concerned with the infectiousness of the milk at the places where he worked had been entertained by Mr. Pearson, the Folkestone inspector of nuisances, as long ago as 1900, before bacteriology had demonstrated the existence of the chronic carrier, and between that year and 1909 this inspector had paid special attention to N.'s movements and had traced numerous cases of enteric fever to milk from farms at which N. worked. On reviewing the facts at the present time it was possible to refer to this carrier the infection of as many as 230 persons during the period 1893–1909 distributed year by year as follows:—

| | | | |
|---|---|---|---|
| 1893 | 1 | 1902 | 16 |
| 1894 | 3 | 1903 | 7 |
| 1895 | 4 | 1904 | 5 |
| 1896 | 17 | 1905 | — |
| 1897 | 21 | 1906 | 2 |
| 1898 | 14 | 1907 | 3 |
| 1899 | 68 | 1908 | 5 |
| 1900 | 38 | 1909 | 14 |
| 1901 | 12 | | |

Dr. Johnstone points out that the N. milk was supplied in two districts for three months during 1901 without any known increase of enteric fever in those districts, and that no cases could be attributed to N. milk during the year 1905. Neither of these facts is, however, sufficient to disprove a carrier hypothesis, as N. may have been only intermittently in an infectious condition, while even if his condition was one of continued infective ability it was not inevitable that infection should always reach the milk-supply. The principal results of Dr. Johnstone's inquiry are referred to in the special report made by Dr. J. C. G. Ledingham to the Local Government Board on enteric fever carriers, which was reviewed in THE LANCET of Dec. 3rd last, p. 1631. Dr. Johnstone's report should, however, itself be carefully studied by all who desire

[1] Reports to the Local Government Board on Public Health Subjects (New Series, No. 42). London: Wyman and Son, Fetter-lane; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 8*d*.

[2] Ibid., No. 41. Price 5*d*.

to realise the weight of the circumstantial evidence which supports this remarkable example of continuity of carrier infectivity.

### ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

*City of Sheffield.*—The population of this city as estimated by the Registrar-General amounted in 1909 to 470,958, and it may be noted that the extension of the city limits in 1901 added some 25,000 to 30,000 to the population. In 1890 the population was only 321,079. The birth-rate for 1909 amounted to 28·2 per 1000, which was considerably below that of any previous year. The marriage-rate was also the lowest yet recorded—i.e., only 14·6 per 1000 persons married. Under the above circumstances there is some satisfaction in being able to record that the death-rate, 15·07 per 1000 for the year, beat all previous records, as did the infantile mortality figure, which was only 119 per 1000 births, the lowest figure previously recorded having been 141 per 1000 births. Dr. Harold Scurfield furnishes some interesting data relative to industrial phthisis, but it would add to the interest of the figures if we could be told how much of this phthisis is tuberculous. Amongst grinders aged 18 years and over the average death-rate from phthisis for the nine years 1901–09 was 15·1, that of cutlers 5·8, of file cutters 5·2, silver workers 5·5, tailors 1·5, printers 3·7, and joiners 1·7 per 1000 in each instance, while the phthisis death-rate amongst all males aged 20 and over was 2·7 per 1000. In connexion with the question of pulmonary tuberculosis and "phthisis" an instructive table is furnished showing the death-rate from these combined diseases in Sheffield since 1839, together with the percentage of total deaths which took place in the workhouse. It would be of interest if curves could be made showing the relation between the phthisis death-rate and the percentage of deaths occurring in the workhouse. Dr. Scurfield reprints in his annual report the paper which he read at the Tuberculosis Congress in Edinburgh,[1] wherein he sets forth the provision made in Sheffield for dealing with cases of tuberculosis in the educational, therapeutic, isolation, and after-care phases. There is no municipal sanatorium at Sheffield, but £1000 annually are available for sending suitable cases to other sanatoriums. It would not, the medical officer of health declares, be possible in the absence of an invalidity insurance scheme to fill a 40-bed sanatorium with suitable cases from Sheffield—a somewhat significant statement made in relation to a population of nearly half a million. He thinks, also, that as things have developed in Sheffield a dispensary would be of no advantage, since all that could be done by such an institution is already provided for in the office of the medical officer of health and the out-patient department, as both of the city hospitals coöperate in the scheme. One of the weak points in the present scheme in Sheffield is, as is obvious elsewhere in this country, the fact that the bread-winner usually remains at work until his disease has passed the curable stage, and the only remedy for this, as was demonstrated in the Local Government Board report upon sanatoriums, is the introduction of some scheme such as the compulsory insurance system in Germany. There is in Sheffield a by-law against spitting in public carriages, halls, or waiting-rooms, but the medical officer of health thinks that spitting upon footpaths ought to be prohibited, and that chronic bronchitics should use pocket spittoons. In Dr. Scurfield's opinion the most striking point brought out at the Edinburgh Congress was the extraordinary percentage of human beings who become infected with tuberculosis at some period of their lives and whose disease is only recognised at the post-mortem examination. But, of course, a great deal of this has been known and appreciated amongst the Germans for many years, as is shown by the saying that everyone has at the end a focus of tuberculosis. With regard to bovine tuberculosis, Dr. Scurfield regards the present method of searching out cows with tuberculous udders as a clumsy makeshift. It appears, nevertheless, from the report of the veterinary surgeon that the number of tuberculous udders discovered during 1909 was greater than in any previous year—a fact which speaks well for the increasing efficiency of the inspection. The Sheffield report upon the Home Office inquiry as to the effects of the industrial employment of women on child-bearing and infantile mortality is contained in the annual volume before us, where some of the conclusions are thus summarised: "The group of mothers not industrially employed is better than any of the groups of mothers industrially employed as regards infant mortality, as regards the number of births, and as regards the liability to premature live births, whether judged by the births forming the subject of the inquiry or by the records of the past, but it has to be remembered that the number of industrially employed mothers is very small."

[1] See THE LANCET, July 16th, 1910, p. 166.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7973 births and 4611 deaths were registered during the week ending Dec. 24th, 1910. The annual rate of mortality in these towns, which had decreased from 18·1 to 15·2 per 1000 in the three preceding weeks, further declined to 14·2 in the week under notice. During the first 12 weeks of the quarter the death-rate in these towns averaged 14·7 per 1000. In London during the same period the death-rate, calculated on a probable over-estimate of its population, was equal to 15·3 per 1000. The annual death-rates in the 77 towns in the week under notice ranged from 6·8 in Stockton-on-Tees, 7·9 in Northampton, 8·6 in Smethwick, and 9·1 in Willesden and in Derby, to 21·4 in Preston, 21·6 in Stoke-on-Trent, 25·4 in Dewsbury, and 25·9 in Rotherham. The 4611 deaths from all causes in the 77 towns during the week showed a decrease of 335 from the number in the preceding week, and included 442 which were referred to the principal epidemic diseases, against 332 and 397 in the two preceding weeks; of these 442 deaths, 208 resulted from measles, 64 from diarrhœa, 61 from whooping-cough, 56 from diphtheria, 28 from enteric fever, and 25 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases, which had been 1·0 and 1·2 per 1000 in the two preceding weeks, further rose to 1·4 in the week under notice. No death from any of these epidemic diseases was registered in Leyton, Halifax, Walsall, York, Aston Manor, Devonport, or in seven other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·7 in Tottenham, 2·9 in Middlesbrough, 3·5 in Grimsby, 4·5 in West Hartlepool, and 7·1 in Rotherham. The fatal cases of measles in the 77 towns, which had been 143 and 169 in two preceding weeks, rose again to 208 in the week under notice; the highest annual rates from this disease in the week were 2·0 in Tottenham, 2·5 in Plymouth and in West Hartlepool, 3·5 in Grimsby, and 3·9 in Rotherham. The 64 deaths attributed to diarrhœa showed a slight increase compared with the number in the previous week. The 61 deaths from whooping-cough were equal to the number recorded in the previous week, and caused the highest rate in Middlesbrough. The 56 deaths referred to diphtheria was the highest number recorded in any week of the year, and included 16 in London, 5 in Leeds, 4 in King's Norton, and 3 each in Portsmouth and Birmingham. The deaths from enteric fever, which had been 21 and 26 in the two previous weeks, rose to 28 in the week under notice; 7 deaths occurred in London and 2 each in Wigan, Burnley, Preston, and Bradford. The 25 deaths from scarlet fever showed a decline from the numbers in the two previous weeks; 4 deaths were registered in Liverpool, 4 in Salford, 3 in Stoke-on-Trent, 3 in Birmingham, 2 in Manchester, and 2 in Huddersfield. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had declined in the six preceding weeks from 1882 to 1680, had further fallen to 1627 on Saturday, Dec. 24th; 167 new cases of this disease were admitted to these hospitals during the week, against 170, 169, and 156 in the three preceding weeks. The 1309 deaths from all causes in London in the week under notice included 261, which were referred to pneumonia and other diseases of the respiratory system, against numbers which had decreased from 669 to 355 in the three preceding weeks; these 261 deaths were 150 fewer than the corrected average number in the corresponding week of the five years 1905–09. The causes of 29, or 0·6 per cent.,

of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in the week under notice in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Hull, Leicester, Stoke-on-Trent, Salford, and in 50 other smaller towns; the 29 uncertified causes of death in the 77 towns included 5 in Liverpool, 3 in Birmingham, 3 in Sheffield, 2 in St. Helens, and 2 in South Shields.

In 77 of the largest English towns 6915 births and 4591 deaths were registered during the week ending Dec. 31st, 1910. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 18·1 to 14·2 per 1000, further fell to 14·1 in the week under notice. During the 13 weeks of the past quarter the death-rates in these towns averaged 14·7 per 1000, against 14·8 and 14·3 in the corresponding quarters of 1908 and 1909. In London the death-rate last quarter was equal to 15·3 per 1000, against 13·7 and 13·5 in the two preceding corresponding quarters. The annual death-rates in the 77 towns during the week under notice ranged from 5·0 in Smethwick, 5·1 in West Hartlepool, 7·4 in King's Norton, and 7·8 in Wallasey, to 20·4 in Dewsbury, 22·0 in Rotherham, 23·1 in Huddersfield, and 24·0 in Tynemouth. The 4591 deaths from all causes in the 77 towns in the week under notice showed a further decline of 20 from the decreasing numbers in the four preceding weeks, and included 391 which were referred to the principal epidemic diseases, against 332, 397, and 442 in the three preceding weeks; of these 391 deaths, 185 resulted from measles, 55 from diphtheria, 54 from whooping-cough, 51 from diarrhœa, 25 from enteric fever, and 21 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns was equal to 1·2 per 1000, against 1·2 and 1·4 in the two preceding weeks. No death from any of these epidemic diseases was registered in the week under notice in East Ham, Birkenhead, Wolverhampton, Walsall, York, Aston Manor, and King's Norton; the annual rates therefrom ranged upwards, however, to 2·9 in Great Yarmouth and West Bromwich, 3·6 in Brighton, and 6·3 in Rotherham. The fatal cases of measles in the 77 towns, which had been 169 and 208 in the two previous weeks, declined again to 185 in the week under notice; the highest annual rates from this disease last week were 1·8 in Bury and in Oldham, 2·1 in Grimsby, 2·4 in Brighton, and 4·7 in Rotherham. The 55 deaths referred to diphtheria were within one of the number in the previous week, and included 22 in London and its suburban districts, and 3 both in Liverpool and in Manchester. The 54 deaths from whooping-cough showed a decline of 7 from the number returned in each of the two preceding weeks; the annual rate from this disease was equal to 1·3 in Newcastle-on-Tyne and 1·6 in Rotherham. The 51 deaths attributed to diarrhœa were fewer by 13 than the number in the previous week. The deaths referred to enteric fever, which had been 21, 26, and 28 in the three preceding weeks, declined last week to 25, of which 5 occurred in London, 4 in Manchester and Salford, 3 in Preston, and 2 each in Portsmouth, Liverpool, and Hull. The fatal cases of scarlet fever, which had been 30, 28, and 25 in the three preceding weeks, further declined last week to 21, and included 5 in Manchester and Salford, 3 in London, 2 in Liverpool, and 2 in Norwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the seven preceding weeks from 1882 to 1627, had further fallen to 1594 on Saturday, Dec. 31st; 138 new cases of this disease were admitted to these hospitals during the week, against 157 and 167 in the two previous weeks. The 1356 deaths from all causes in London in the week under notice included 263 which were referred to pneumonia and other diseases of the respiratory system, against 355 and 261 in the two preceding weeks; these 263 deaths were fewer by 119 than the corrected average number in the corresponding week of the five years 1905–09. The causes of 41, or 0·9 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Nottingham, Leicester, and in 50 smaller towns; the 41 uncertified causes of death in the 77 towns in the week under notice included 10 in Liverpool, 4 in Birmingham, and 3 in Sheffield.

## HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 823 births and 486 deaths were registered during the week ending Dec. 24th, 1910. The annual rate of mortality in these towns, which had decreased in the three preceding weeks from 17·5 to 16·5 per 1000, further declined to 13·4 in the week under notice. During the first 12 weeks of the quarter the death-rate in these eight towns averaged 14·8 per 1000, and was slightly above the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns in the week under notice ranged from 8·9 and 10·7 in Paisley and Aberdeen to 19·6 in Perth and 20·8 in Dundee. The 486 deaths from all causes in the eight towns during the week showed a decline of 112 from the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against 47, 40, and 50 in the three preceding weeks; of these 40 deaths, 12 resulted from whooping-cough, 11 from diarrhœa, 10 from diphtheria, 6 from scarlet fever, and 1 from "fever," but not one from small-pox or from measles. The mean annual rate of mortality from these epidemic diseases in the eight towns in the week under notice was equal to 1·1 per 1000, or 0·3 below the rate from the same diseases in the 77 English towns. The 12 deaths referred to whooping-cough in the eight towns showed but slight variation from the numbers in recent weeks, and included 3 in Glasgow, 3 in Dundee, and 2 both in Aberdeen and in Greenock. The fatal cases of diarrhœa, which had been 9 in each of the two preceding weeks, were 11 in the week under notice, of which 5 were returned in Glasgow and 5 in Dundee. The deaths attributed to diphtheria, which had been 11, 13, and 18 in the three preceding weeks, declined to 10 during the week, of which 6 were recorded in Glasgow and 2 in Dundee. Of the 6 deaths from scarlet fever, 2 occurred in Dundee, and 1 each in Glasgow, Edinburgh, Paisley, and Perth. The fatal case of "fever" was registered in Dundee. The deaths referred to diseases of the respiratory system in the eight towns, which had decreased from 157 to 122 in the three preceding weeks, further declined to 117 in the week under notice, and were 56 below the number in the corresponding week of last year. The causes of 15, or 3·1 per cent., of the deaths in the eight towns in the week under notice were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death did not exceed 0·6 per cent.

In Glasgow 429 births and 245 deaths were registered in the week ending Dec. 31st, 1910. The deaths exceeded the number in the previous week by 22, and were equal to an annual rate of 14·5 per 1000, against 17·2 and 13·2 in the two preceding weeks. The 245 deaths included 18 which were referred to the principal epidemic diseases, of which 9 resulted from diarrhœa, 5 from diphtheria, 2 from scarlet fever, and 1 each from whooping-cough and enteric fever, but not 1 from measles or small-pox; these 18 deaths were equal to an annual rate of 1·1 per 1000. The 9 deaths attributed to diarrhœa exceeded the number in the previous week by 4; the 5 fatal cases of diphtheria showed, however, a decline of 1. The deaths referred to diseases of the respiratory system, which had been 69 and 52 in the two previous weeks, declined to 47 in the week under notice. Ten deaths were the result of violence, and 80 were recorded in public institutions. The causes of 6, or 2·4 per cent., of the deaths were not certified. In Edinburgh 134 births and 102 deaths were registered in the week under notice. The deaths exceeded by 21 the number returned in the preceding week, and were equal to an annual rate of 14·8 per 1000, against 15·8 and 11·7 in the two preceding weeks. The 102 deaths included 7 which were referred to the principal epidemic diseases, of which 5 resulted from diphtheria and 1 each from scarlet fever and diarrhœa, but not one from measles, whooping-cough, enteric fever, or small-pox; these seven deaths were equal to an annual rate of 1·0 per 1000. The fatal cases of diphtheria in the city, which had been 3, 8, and 1 in the three preceding weeks, rose again to 5 in the week under notice. The deaths referred to diseases of the respiratory system in Edinburgh, which had been 28, 22, and 19 in the three preceding weeks, rose again to 20 in the week under notice. Four deaths were the result of violence, and 34 were recorded in public institutions. The causes of 2, or

2·0 per cent., of the deaths registered during the week were not certified.

### HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 477 births and 423 deaths were registered during the week ending Dec. 24th, 1910. The mean annual rate of mortality in these towns, which had been 19·6 per 1000 in each of the two preceding weeks, declined to 19·1 in the week under notice. During the first twelve weeks of the quarter the annual death-rate in these Irish towns averaged 17·6 per 1000; the mean rate during the same period did not exceed 14·7 in the 77 largest English towns and 14·8 in the eight Scotch towns. The annual death-rate during the week was equal to 21·6 in Dublin, 17·6 in Belfast, 17·1 in Cork, 18·0 in Londonderry, 10·9 in Limerick, and 13·6 in Waterford; the mean annual death-rate in the 16 smallest of these Irish towns in the week under notice was equal to 21·3 per 1000. The 423 deaths from all causes in the 22 town districts in the week showed a decline of 9 from the number in the previous week, and included 25 which were referred to the principal epidemic diseases, against 33 and 23 in the two previous weeks; these 25 deaths were equal to an annual rate of 1·1 per 1000; in the 77 English towns the mean rate from the same diseases was 1·4 per 1000 and 1·1 in the eight Scotch towns. The 25 deaths from these epidemic diseases in the Irish towns in the week under notice included 9 from measles, 6 from whooping-cough, 5 from diarrhœa, 3 from diphtheria, 1 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The fatal cases of measles, which had been 5 and 10 in the two preceding weeks, were 9 in the week under notice, and included 6 in Lurgan. The 6 deaths from whooping-cough showed an increase of 4 on the number in the previous week; 5 deaths were recorded in Dublin and 1 in Belfast. Of the 5 fatal cases of diarrhœa 2 occurred in Dublin. Of the 3 deaths from diphtheria 2 were registered in Dublin and 1 in Portadown. The fatal case of enteric fever was recorded in Dublin, and that of scarlet fever in Belfast. The deaths in the 22 towns during the week included 146 which were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 80 to 130 in the five preceding weeks. The causes of 20, or 4·7 per cent., of the deaths registered in the Irish towns in the week under notice were not certified; in the 77 English towns the proportion of uncertified deaths did not exceed 0·6 per cent., and in the eight Scotch towns it was equal to 3·1 per cent.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 584 births and 371 deaths were registered during the week ending Dec. 31st, 1910. The mean annual rate of mortality in these towns, which had been equal to 19·6 and 19·1 per 1000 in the two preceding weeks, declined to 16·8 in the week under notice. During the 13 weeks of the past quarter the annual death-rate in these Irish towns averaged 17·6 per 1000; the mean rate during the same period did not exceed 14·7 in the 77 largest English towns, and 14·8 in the eight principal Scotch towns. The annual rate during the week under notice was equal to 18 9 in Dublin, 12·1 in Belfast, 25·3 in Cork, 16·8 in Londonderry, 28·7 in Limerick, and 17·5 in Waterford; the mean annual death-rate in the 16 smallest of these Irish towns in the week under notice was equal to 16·4 per 1000. The 371 deaths from all causes in the 22 town districts in the week under notice showed a decline of 52 from the number in the previous week, and included 23 which were referred to the principal epidemic diseases, against 23 and 25 in the two preceding weeks; these 23 deaths were equal to an annual rate of 1·0 per 1000, the rate from the same diseases in the 77 English towns being 1·2 per 1000. The 23 deaths from these epidemic diseases in the Irish towns in the week under notice included 14 from whooping-cough, 3 from measles, 3 from scarlet fever, 2 from diarrhœa, and 1 from diphtheria, but not one from enteric fever or small-pox. The fatal cases of whooping-cough, which had been 4 and 6 in the two previous weeks, further rose to 14 in the week under notice, and included 7 in Dublin, 3 in Londonderry, and 2 in Cork. The 3 fatal cases of scarlet fever showed an increase of 2 upon the number in the previous week; 2 occurred in Dublin and 1 in Belfast. The deaths in the 22 towns during the week included 84 which were referred to pneumonia and other diseases of the respiratory system, showing a decline of 62 from the number in the previous week. The causes of 27, or 7·3 per cent. of the deaths registered in the Irish towns in the week under notice were not certified; in the 77 English towns the proportion of uncertified deaths in the week did not exceed 0·9 per cent.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: J. C. Ferguson to the *Royal Arthur*. Staff-Surgeons: A. Davidson to the *Pembroke*, for Royal Naval Barracks; J. N. Robertson to the *Diana*, on recommissioning; C. R. Sheward to the *Pathfinder*, on recommissioning; H. H. R. Denny to the *President*, additional, for hospital course; and A. I. Sheldon to the *Britannia*. Surgeons: F. C. Robinson to the *Pembroke*, additional, for disposal; J. A. Thompson to the *King Edward VII.*; H. Stone to the *Vivid*, for Royal Naval Barracks; F. C. Alton to the *Berwick*; F. J. Gowans to the *President*, additional, for three months' hospital course; H. Woods to the *Barham*, on recommissioning; D. Horgan to the *Diana*, on recommissioning; G. R. McCowen to the *Dwarf*, additional, and on recommissioning; W. C. B. Smith to the *Crescent* and to the *Tamar*; T. R. L. Jones to the *Crescent*, and afterwards to the *Woodlark*; E. J. H. Garstin to the *Crescent* and to the *Nightingale*; F. H. Stephens to the *Crescent* and to the *Kinsha*; R. N. W. Biddulph to the *Doris*, additional; M. F. Caldwell to the *Blenheim*; C. H. L. Petch to the *Indus*; H. M. Langdale to the Royal Marine Division, Portsmouth; S. L. McBean to Portland Hospital; and E. L. Markham to the *King Alfred*, additional, for Devonport Subdivision of Home Fleet.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. W. Johnson, from Gibraltar, has taken over medical charge of the Military Hospital at Bulford Camp, Salisbury Plain, in succession to Lieutenant-Colonel R. R. N. Moore. Lieutenant-Colonel L. T. M. Nash, from Hyderabad, Sind, has been selected to command the Station Hospital at Karachi. Lieutenant-Colonel P. C. H. Gordon, from Bulford Camp, has taken up duty at Pembroke Dock. Lieutenant-Colonel G. E. Hale, D.S.O., medical inspector of recruits in the Eastern Command, has been selected to command the Station Hospital at Mhow. Major L. P. More, staff officer for Medical Mobilisation Second (Rawal Pindi) Division, has arrived home from India. Major R. F. E. Austin, from Jutogh, has taken up duty at Kasauli. Major W. P. Gwynn has been transferred from Quetta to Karachi. Major G. B. Carter, at present serving in Ireland, has been placed under orders for duty in the Burma Division. Captain C. H. Turner, on return home from a tour of service in India, has been appointed to the Dublin District. Captain A. M. MacLaughlin, from the London District, has taken up duty as Specialist Sanitary Officer to the Scottish Command. Captain A. W. A. Irwin has embarked for tour of service at Gibraltar. Captain H. W. Long has arrived home on duty from Sierra Leone. Captain P. A. Lloyd Jones, from Malta, has been posted to the Irish Command. Captain F. Ashe, from Colchester, has been appointed Specialist in Midwifery and Diseases of Women and Children to the Ninth (Secunderabad) Division. Captain S. C. Bowle and Captain K. A. C. Doig, on completion of a tour of service in India, have been posted to the Southern Command. Captain P. C. T. Davy, from Nowgong, has taken over command of the Station Hospital at Jutogh. Lieutenant T. B. Nicholls has embarked for duty in Egypt. Lieutenant E. C. G. M. Kinkead has been transferred from Kilworth to Buttevant. Lieutenant A. N. R. McNeill, from Ayr, has taken up duty at Mauritius. Lieutenant C. H. O'Rorke has been transferred from the Curragh Camp for duty at Newbridge. Lieutenant G. S. Parkinson, from Dunree Camp, has joined at Enniskillen.

### INDIAN MEDICAL SERVICE.

Lieutenant-Colonel H. P. Dimmock, Bombay, has arrived home. Lieutenant-Colonel R. H. Castor, on return from leave, has been appointed to the Civil Medical Charge at Shwebo, Burma, in succession to Lieutenant-Colonel F. J.

Dews, who has been granted leave combined with furlough for two years. Lieutenant-Colonel J. A. Cunningham has taken over duty as Inspector-General of Civil Hospitals in the United Provinces. Lieutenant-Colonel D. T. Lane, civil surgeon at Muree, has been appointed Civil Surgeon at Lahore, in succession to Lieutenant-Colonel H. Hedley, who has been attached for special duty to the Principal Medical Officer, Second (Rawal Pindi) Division. Lieutenant-Colonel J. A. Burton, Madras, has been granted leave from Dec. 6th. Lieutenant-Colonel A. C. Younan, in medical charge of the 25th Punjabis, has arrived home on leave from Rawal Pindi. Major P. St. More has been appointed Civil Surgeon and District Plague Medical Officer at Attock. Major E. F. E. Baines has been appointed to the substantive Medical Charge of the 3rd Sappers and Miners at Kirkee, in succession to Lieutenant-Colonel G. E. Fooks. Major T. W. Irvine has been appointed Civil Surgeon at Peshawar by the Foreign Department of the Government of India, vice Captain N. M. Wilson, who has been selected as Agency Surgeon at Meshed. Major J. Penny has had an extension of his leave on medical certificate for six months. Captain T. F. Owens, at present on general duty in the chemical examiner's department at Calcutta, has been selected to succeed Major F. N. Windsor as Chemical Examiner at Rangoon. Major S. Browning Smith has been re-posted to the Punjab by the Home Department. Major T. A. O. Langston, Bengal, has been granted leave of absence from Dec. 12th. Captain V. B. Green-Armytage, on return from leave, has been appointed Specialist in Midwifery and Diseases of Women and Children to the Burma Division. Captain G. Fowler has been appointed to the Civil Medical Charge of the Akola District. The services of Captain R. A. Chambers have been replaced at the disposal of the Government of India in the Home Department.

APPOINTMENTS ON H.E. THE VICEROY OF INDIA'S PERSONAL STAFF.

Lord Hardinge, the new Viceroy of India, has made the following appointments to his personal staff:—As Honorary Surgeons: Surgeon-General P. H. Benson, I.M.S., Surgeon-General with the Government of Madras; Surgeon-General A. T. Sloggett, C.B., C.M.G., A.M.S., Principal Medical Officer, (Sixth) Poona Division; Colonel R. H. Forman, A.M.S., Principal Medical Officer, Bombay Brigade; Colonel C. F. Willis, I.M.S., Officiating Deputy Principal Medical Officer, His Majesty's Forces in India; Colonel G. F. A. Harris, I.M.S., Inspector-General of Civil Hospitals in Bengal; Lieutenant-Colonel B. M. Skinner, M.V.O., R.A.M.C., commanding the Station Hospital at Peshawar; Lieutenant-Colonel H. N. Thompson, D.S.O., R.A.M.C., commanding the Station Hospital at Lucknow; Lieutenant-Colonel R. S. F. Henderson, R.A.M.C., Secretary to the Principal Medical Officer, His Majesty's Forces in India; Lieutenant-Colonel H. Smith, I.M.S.; Major B. Seton, I.M.S., Secretary to the Director-General, Indian Medical Service; and Major W. Selby, D.S.O., Civil Surgeon at Lucknow.

SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

Lieutenant Charles J. Simpson is confirmed in his rank.

TERRITORIAL FORCE.

*Royal Army Medical Corps.*

South-Eastern Mounted Brigade Field Ambulance, Royal Army Medical Corps: Major Percy C. Burgess to be Lieutenant-Colonel (dated Nov. 24th, 1910).

1st South Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps: William Henry Cusack to be Lieutenant (dated Sept. 3rd, 1910).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Major Albert R. Henchley to be Lieutenant-Colonel (dated Nov. 26th, 1910).

3rd West Lancashire Field Ambulance, Royal Army Medical Corps: Captain Henry Dodgson resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 4th, 1911).

*Attached to Units other than Medical Units.*—Lieutenant Ivan C. Keir resigns his commission (dated Jan. 4th, 1911).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

With the January issue the *Journal of the Royal Army Medical Corps* enters upon its sixteenth volume. In the opening article on Table Jellies Major W. W. O. Beveridge, D.S.O., after remarking that jellies appear to be prescribed for no definite purpose other than that they offer a welcome change in convalescence, points out that jellies have a certain real, though limited, function in health and disease. They are a protein sparer, greater even than the fats or carbohydrates. The author also quotes an American authority Dr. T. R. Martin, who states that "besides its protein-sparing properties, the power to utilise gelatine depends also on the protein condition of the organism at the start; the lower the condition the more strongly does the organism lay claim to gelatine as a means of protecting its living substance." After arriving at the conclusion that it is not at all necessary to wait for early convalescence before giving jellies in most disorders, Major Beveridge discusses the various forms in which jellies can be obtained, their use, and analysis. Lieutenant-Colonel R. J. S. Simpson, C.M.G., has in this number a further instalment of his Medical History of the South African War, and among other useful articles are those on the Incineration of Human Excreta, by Lieutenant-Colonel Bruce Skinner, M.V.O.; and an Inquiry into a Small Epidemic of Paratyphoid Fever in India, by Major H. W. Grattan and Major D. Harvey. Some Episodes in the Life of James Goodall Elkington, an Army Surgeon in the Peninsular Days, together with Extracts from his Journal, by Lieutenant-Colonel H. P. Elkington, will also be found to be of much interest.

THE MILITARY SURGEON.

The December number of the *Military Surgeon*, published in Washington, D.C., contains some interesting material. An address by the President of the Association of Military Surgeons of the United States deals with the status of the Medical Corps of the National Guard in its relation to the Army, the Navy, and the Public Health and Marine Hospital Service, and generally explains the status of the organisation of the Association of Military Surgeons in the United States, of which Colonel K. Weaver is President. Among other articles we may mention as very interesting one by Colonel Nicomedes Antelo, Chief of the Surgical Service at the Military Hospital at Buenos Aires, on the use of tincture of iodine in the surgery of war. The writer comes to the conclusion that this tincture is the ideal skin antiseptic in military surgery, a conclusion which will be seen to be much in accord with the teaching of an article published in our issue this week on the use of iodine as a disinfectant of the skin before operation by Mr. Willmott Evans.

# Correspondence.

"Audi alteram partem."

## A METHOD OF SERUM DIAGNOSIS FOR TUBERCLE.

*To the Editor of* THE LANCET.

SIR,—I have read with much interest the communication from Captain V. B. Nesfield on a method of serum diagnosis for tubercle which appeared in your columns on Dec. 31st last, inasmuch as I have been experimenting on very similar lines for a long time. The results which I have obtained will be dealt with at length in my Hunterian lectures in February next. I should like, however, to give an outline of my methods and some of my results in view of the fact that Captain Nesfield's method is somewhat similar to mine and might be taken as anticipating it.

There is, of course, nothing new in the attempt to diagnose tuberculosis by means of the method of fixation of complement, a large number of papers on the subject having been published during the last few months. I may refer especially to the researches of Calmette, Massol and Breton, Simon and Hans, Slatineano and Danielopol, Laub and Novosky, Butler and Mefford, Pickert, and others. In most (I believe in all, but have not all the references by me as I write) tuberculin has been used as the antigen, and my earlier work was carried out on similar lines. I find, however, and in this point only does my method resemble that of Captain Nesfield, that an emulsion of killed tubercle bacilli is greatly superior in this respect. But I attach the very greatest importance to a point that he does not mention—the accurate standardisation

of the emulsion. I have used a suspension which when centrifugalised until the deposit is of constant volume in a graduated tube is found to contain 4 per cent. of bacillary substance. I had hoped by this process to obtain an antigen of uniform strength, no matter what the source of the bacilli; this is not quite the case, small deviations being found with different samples of bacilli, and I now find it advisable to test all fresh emulsions against two or three known sera. The standard emulsion keeps fairly well, but I think it gets slightly weaker after six weeks or so; certainly most of my negative results in tuberculous cases have been got when I was using an old emulsion. The necessity for accurate standardisation is very great. Almost every serum will give complement absorption with an emulsion of tubercle bacilli if the latter is sufficiently strong, and, strange as it may seem, the few exceptions are always from tuberculous cases. They are due, as I shall show, to the presence of a substance which has the remarkable property of inhibiting the combination which usually occurs when antigen, antibody, and complement are present. This substance I believe to be the cause of the negative phase.

The criterion as to the strength of the reaction which I have adopted after much preliminary work is the *time necessary for the complete absorption of all complement* when the serum and emulsion are mixed in certain proportions (1 : 4) and incubated. I test the absorption by the addition of sensitised human corpuscles, as in my method for the Wassermann reaction.[1]

I may summarise some of my results. In health the absorption time is about 15–25 minutes. Thus, in 26 healthy persons or non-tuberculous patients 21 have shown times between those figures. In tuberculous patients the time is as a rule greatly shortened. Out of 40 cases tested the absorption time has been under 2½ minutes (it is not practicable to test at a shorter period) in 16 cases, under 5 in 26, under 10 in 31. The sera giving complete absorption in less than 2½ minutes have been tested in some cases with dilutions of the standard emulsion; thus, in one case the absorption time with a 1 in 500 dilution was 10 minutes. This refinement is hardly necessary for diagnostic purposes, but is required when the result of treatment has to be followed.

As regards the indication of the reaction from the point of view of making an immunity index, as Captain Nesfield suggests, I do not think this is altogether possible; immunity in tuberculosis depends on too many factors, especially, as I believe, on the resistance of the tissues. In general terms, however, I agree with him in thinking that, on the whole, the prognosis is good when the serum contains a large amount of antibody, and therefore (as I should put it) has a short absorption time. I have seen patients improve on a shortening time and *vice versâ*. But this is not an invariable rule, for I have found, on repeated examinations, a very long absorption time in a very mild case which was doing well on tuberculin treatment. But I believe it will be found that a prolonged absorption time does indicate a very high degree of susceptibility to the action of tuberculin, and is an indication to give very small doses, though it does not necessarily indicate that the patient's disease is progressive.

Although my method is not an absolute one, I believe it to be the best method for the serum diagnosis of tuberculosis which we have at present; it is simple and easy to carry out, and has the great advantage over the opsonic method of not involving the tedious and eye-destroying counting. It gives positive results in a larger number of cases than does the opsonic method if a single observation only is made, and is less open to technical errors. In one case I was able to demonstrate the negative phase by my method when the opsonic method was entirely useless. I ought to add that I do not think it possible that an absolute method for the serum diagnosis of tuberculosis will ever be invented. Normal persons all contain some amount of antibodies to the tubercle bacillus (this is true, at least, for town dwellers), and, as my method demonstrates with absolute clearness, the amount present in tuberculosis may be the same, or so nearly the same as only to be detected by the most refined quantitative work, or may even be less. The antibodies present in normal blood may be in part the cause of the immunity which most persons possess to the disease. It would be interesting to compare the amount present in adults and in young infants, but this I have not been able to do.

I am, Sir, yours faithfully,

King's College Hospital, Jan. 2nd, 1911. W. D'ESTE EMERY.

[1] THE LANCET, Sept. 3rd, 1910.

## THE POSITION OF HOMŒOPATHY.

*To the Editor of* THE LANCET.

SIR,—Any appeal from Dr. R. Farquharson on a point of medical ethics or professional conduct is, all will admit, well entitled to careful and respectful consideration, and it may therefore be taken as certain that the letter from his pen which appeared in your issue of Dec. 24th, will lead more or less widely to the self-examination which he advises, and which, moreover, is by repute especially appropriate and salutary at this juncture of the year. With an earnest desire to seek peace and ensue it, Dr. Farquharson invites us as members of the medical profession to reconsider our attitude towards "homœopathy" and towards those who are "professors" of this "method of treatment." To sharpen our appetites for this task we are told that the homœopathic "professors" are able to treat disease on a "much more scientific principle" than any which we ourselves possess, and presumably it is to the examination of this therapeutic achievement that we are invited to address ourselves. But, most unfortunately, while offering so alluring a prospect, Dr. Farquharson neither defines the "scientific principle" in question nor indicates where an adequate presentation of it may be found; and the difficulty of accepting his invitation is still further increased by his announcement that "the absurd doctrines of Hahnemann have long since been abandoned." What, then, is the "homœopathy" for which a reconsideration is now requested? For, manifestly, an invitation to examine either "absurd doctrines long since abandoned," or a "scientific principle" not yet defined, is not an attractive proposal, and it is to be feared that until he can be more precise Dr. Farquharson will evoke only the scanty response which he anticipates and which, in the midst of an appeal for charity and goodwill, he proposes to interpret as indicative of the defective courage and candour of his professional brethren.

There remain the "professors" of this vague and amorphous "homœopathy," and these, we are told, suffer grievously for "honestly trying to do their duty according to their lights." They are, it seems, "scorned and rejected of men," meaning, presumably, medical men, for surely, unless rumour is strangely at fault, many a proclaimed "professor" finds a ready and not unremunerative welcome among both laymen and laywomen. And when it can be shown that any purpose other than the welcome just described can be served by the adoption by a medical practitioner of a distinctive title announcing a special therapeutic policy, and implying also the fitness of the public to judge of therapeutic policies in general, Dr. Farquharson may possibly succeed in convincing the profession that his "professors" are as "respectable" as he proclaims them to be. In the meantime, I will venture to remind him of the verdict of one for whose memory, I am sure, he entertains the highest respect. "The true physician," wrote the late Sir William Gairdner, "derives his chief claim to that character from his perfect intellectual and moral freedom. ..... It is the misfortune of homœopathy that its votaries, like those of all exclusive sects, can never occupy [this] position." And again, "It is obviously part of the policy of homœopathy ..... to flaunt in the faces of physicians the banner of its exclusive dogma, and to perpetuate the use of nicknames associated with every kind of bitterness." Such was the considered and deliberate decision of a physician who combined in very unusual measure clearness and breadth of outlook with charity and impartiality of judgment. But it may be said that all this applies only to the full-blooded days when homœopathy *was* homœopathy, and long ere its "absurd doctrines" had been "abandoned" for the vague "scientific principle" at which Dr. Farquharson hints and hesitates. Upon which remark there follows the obvious rejoinder, that so great a change having been accomplished in the creed of the "professors," any appeal for readjustment of attitude and amendment of conduct ought surely to be addressed, not to the medical profession, but to those individuals who, although they have "abandoned" the "absurd doctrines of Hahnemann," still

continue ostentatiously to disport themselves in the livery of the sect of which he was the founder.

I am, Sir, yours faithfully,

Harley-street, W., Dec. 26th, 1910. C. O. HAWTHORNE.

## *RE* MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

*To the Editor of* THE LANCET.

SIR,—Having received from the Home Office a printed circular addressed to medical referees, containing, *inter alia*, the attached quotation, I had no alternative but to resign at once my appointments to Circuits 40 and 42, including the Bow, Shoreditch, Bloomsbury, and Whitechapel county courts.

The matter is of great interest to the profession and others, as it is clear that no medical referee appointed by the Secretary of State under the Workmen's Compensation Act can in future examine any workman on behalf of either employer or employed. The position can therefore be only held by those having no practice in accident examination.

I am, Sir, yours faithfully,

ALBERT BENTHALL.

Fellows-road, S. Hampstead, N.W., Dec. 30th, 1910.

*Extract from Home Office Circular to Medical Referees.*

It is particularly undesirable that they should act on behalf either of the employer or insurance company, or of the workman in cases in which weekly payments are actually being made; and apart from any emergency, or other quite exceptional circumstances, they should decline to act in such cases.

The Secretary of State desires to impress on referees the necessity of their paying particular attention to these directions.

## THE "WHOLE-TIME" MEDICAL OFFICER OF HEALTH.

*To the Editor of* THE LANCET.

SIR,—May I venture to point out the slightly ambiguous use of the descriptive term "whole-time," as applied to medical officers of health, which occurs in your most valuable review of the Annus Medicus 1910? A medical officer of health who is debarred from private practice is not necessarily a whole-time officer, and if he holds other public appointments he most certainly is a part-time officer. The recent Order of the Local Government Board hardly *encourages* whole-time appointments; it gives security to the whole-timer and the part-timer alike, but it discourages the part-timer from private practice, and offers him instead certain clinical public appointments such as those alluded to in your retrospect. The real effect of the Order will be to establish the part-timer on an impregnable basis of official pluralism.

I am, Sir, yours faithfully,

Barnes, S.W., Dec. 30th, 1910. F. G. CROOKSHANK.

## A LATIN TREATISE.

*To the Editor of* THE LANCET.

SIR,—In examining the Irish medical MSS. in the library of Trinity College, Dublin, I find three copies (more or less imperfect) of a translation of a Latin treatise which begins: "Cum humanae vitae brevitas, teste Hippocrite, ad immensae (*sic*) artis longitudinem vix sufficiat." If any of your readers could help me to identify this treatise I should be very grateful. It deals largely with eruptive diseases, boils, &c., and, to judge from the number of copies, was probably a standard work in, say, the sixteenth century.

I am, Sir, yours faithfully,

Dublin, Dec. 30th, 1910. T. K. ABBOTT.

## THE ASSOCIATION OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

*To the Editor of* THE LANCET.

SIR,—The report of the inaugural dinner of this association appears in your issue of Dec. 17th last. We would be much obliged if you will correct the erroneous statements therein contained—viz., "Irish hospitals, excluding the F.R.C.S.I.," and "that Fellows only of the College should be examiners."

The protestation which the association made was against the system adopted by certain English hospitals of excluding from their staff those possessing the Fellowship of the Royal College of Surgeons, Ireland. The resolution passed at the special meeting on Dec. 10th of the Fellows of the College of Surgeons, Ireland, was:—

That the Examiners shall be selected from amongst the Fellows and the Professors of the College

We are, Sir, yours faithfully,

ANDREW CHARLES, R. P. McDONNELL } Hon. Secretaries.

## A SPECULATION ON THE ORIGIN OF CANCER.

*To the Editor of* THE LANCET.

SIR,—I read with great interest and pleasure the Bradshaw lecture on cancer by Sir Alfred Pearce Gould. He gives all facts known at present about cancer and these are well arranged. All I will say about them is—all honour to the workers and more power to their elbows, Sir Alfred Pearce Gould himself included. If I understood him right, he concludes that certain organs (such as the uterus and the breast), on account of frequently repeated periods of great cellular activity, followed by periods of decline and atrophy, get prematurely old ("before the rest of the woman ages") and therefore are specially prone to cancer.

Now, throughout the whole animal world we find that the older the tissue the less is its cellular activity. Cancer is increased cellular activity. If Sir Alfred Pearce Gould is right, this increased cellular activity takes place in tissue that has grown prematurely old ("before the rest of the woman ages"). It is admitted at once that this increased cellular activity results in disorderly growth; but that is a matter of secondary importance. Thus Sir Alfred Pearce Gould has (1) not stated how cancer originates; and (2) has brought in the field a still more difficult problem—viz., increased cellular activity in tissues prematurely old (thus going against the universal law stated above). But taking the facts thus far known and putting aside for the time being the parasitic theory (and appearances are against it) I humbly beg to state that another explanation is possible.

To begin with, then, the statement often made—that the human body is a machine, timed to go for a certain number of years, after which it gets worn out and thus dies—is not in accordance with facts. Arrangements are made in the body for a constant supply of nutrition to all parts, more than making up for any wear and tear that might take place. Arrangements also are made for immediate removal of all waste materials. Now, if wear and tear had anything to do with old age and death, we ought to have some signs of this during the period of greatest activity. The child is always on the go; the youth is always about and active; but they show no signs of wear and tear. The heart and respiratory muscles do more work than any other part of the body, but we find no signs of extra wear and tear in them. Conclusion: There is nothing to show that old age is brought on by wear and tear of tissues.

Wear and tear of tissues not being able to account for old age, we are obliged to fall back on nutrition. Failure of *suitable* nutrition can be the only other cause. Now, it appears that the tissues, very soon after first coming into existence, begin slowly to change (proteins are unstable). All the time the tissue is changing the nutrition is, comparatively speaking, at a standstill. Thus, what was perfect nutrition at one time becomes less and less perfect as time goes on; and thus is brought about the gradual failure of nutrition. The make of the body is perfect, but no arrangement exists to modify the nutrition in accordance with the changing tissues. Under normal conditions all the tissues march together (change) in regular order. But under certain circumstances this regularity of the march is broken, and certain tissues fall back (particularly the epithelial tissue). Now, this retarded tissue finds the nutrition provided more suitable than the rest of the tissues, and thus comes into activity. Conclusion: It is the tissue which has aged *less* than the rest of the body which is specially prone to cancer.

Sir Alfred Pearce Gould has very ably pointed out the difference between the orderly growth of the embryo and the

disorderly growth of cancer. Now there is one important difference in the structure of the two which I do not remember reading in the lecture, and which may account for the disorderly growth in cancer. In the embryo, side by side with the ordinary tissue, and in due proportion, there exists an organising tissue—viz., the nervous tissue—which is absent in cancer. On rare occasions this organising element is absent also in the impregnated ovum, and the result is the same disorderly growth that we find in cancer. Do we know of any such instances? I think we do—molar pregnancy. Conclusion: Absence of nerve tissue is probably the cause of disorderly growth in cancer.

I am, Sir, yours faithfully,

H. D. MASANI,

Caterham, Dec. 29th, 1910. Lieut.-Col., I.M.S. (Retired).

## A DISCLAIMER.

*To the Editor of* THE LANCET.

SIR,—With reference to the letter by Professor Harvey-Gibson and others in your issue of Dec. 31st will you permit me to say that there appears to be nothing in my book which attempts to involve them in any responsibility for my statements. I mentioned these gentlemen merely to acknowledge (properly, I hope) the help and encouragement which I have received from them. I alone am responsible for all the statements contained in my book.

These statements depend upon what I believe to be observed facts. If your correspondents will do me the honour to point out exactly where I have been mistaken I shall be glad either to admit my mistakes or to discuss the matter further with them.

I am, Sir, yours faithfully,

Liverpool, Dec. 31st, 1910. H. C. ROSS.

## AN INNOVATION IN THE INDIAN MEDICAL SERVICE.

*To the Editor of* THE LANCET.

SIR,—In making some inquiries about the Indian Medical Service from a friend in that service, I have received the following information which my correspondent has no objection to my sending to you.

The papers in India have recently published the fact that a board is sitting at Simla to discuss the changing of the present military medical system for native regiments by withdrawing the I.M.S. officers from their regiments and starting a station hospital system. That the authorities are in favour of this change is shown by the published speeches of the Director-General and Commander-in-Chief at a recent dinner held at Simla. To discuss the *pros* and *cons* of this question would be extremely lengthy; suffice to say that the majority of I.M.S. officers and officers commanding native regiments, if they were asked their opinions, would register them against the new proposals. The only persons who would seem likely to gain would be the senior I.M.S. officers—men of 20 years' service—who would command the "station hospitals" and draw an extra allowance, saved no doubt at the expense of the juniors, for the Government will allow no extra money for the new system. It is improbable that the scale of pay, entered in the prospectus of the I.M.S. as consolidated pay for an officer in charge of a native regiment, would be diminished. But it is quite common under present conditions for such an officer to have charge of another regiment in addition to his own at an extra salary averaging Rs. 50 per month throughout the year. This allowance would, under the new conditions, be lost, and therefore the consolidated pay should be increased by a corresponding amount.

Another allowance likely to be lost under the proposed system is that for the keep of horses for cavalry officers. Under present conditions an officer below the rank of major receives an allowance of Rs. 60 a month for two horses, or above the rank of major Rs. 90 for the upkeep of three horses. These will, however, be just as necessary under the new system. It would be much fairer in the service as it is now if, instead of some officers being allowed three, some two, some one horse, and some none, all drew Rs. 30 per month for one horse, like all other officers with native infantry; for when one is moved from a cavalry to an infantry regiment, or *vice versâ*, a warrant in many cases cannot be drawn for the carriage of horse by train on the grounds that at one end or the other of the journey he is not entitled to a charger. This is a very severe hardship in the frequent changes of the early years of service.

Another change that it would be desirable to make is the allowance of gratuities or bonuses to officers on retiring after the completion of short periods of service. These bonuses are allowed to officers in the R.A.M.C., £1000 being given on retirement at the end of eight years' service and larger sums for different periods in proportion. Similar proportionate allowances should be made for I.M.S. officers, so that they may retire if they so desire at the end of eight or more years with as little loss as possible. Many I.M.S. officers have elected to stay in military employment; indeed, many must have entered the service because they like the life regimental, with its pleasant good-fellowship and fair certainty of a home settled for four or five years at the time. It is likely that many such would not care to stay under the new system, in which they will no longer "run their own show," but be liable to have for their commanding officer—who writes their yearly confidential reports—a native of India. To such, if the new system be introduced, the possibility of retiring after short periods of service should be allowed without greater loss than can be helped.

Lastly, the improvement in the R.A.M.C. of recent years referred to by the Director-General in his speech can hardly be attributed to the station hospital system of itself, but rather to such factors as the efforts of an eminent civil advisory board who have obtained money which has enabled them to make and equip such splendid modern hospitals as the Millbank, the Connaught, the Cambridge, and the Herbert, and provide a first-class nursing system the members of which are drawn from the best nurses of the London hospitals. The hospitals to be erected in India as part of the I.M.S., if the new system be introduced, are to be run without further Government grants.

The above remarks of my correspondent appear to me to be based with fairness upon a common-sense knowledge, and I recommend their consideration to those thinking of entering the service.

I am, Sir, yours faithfully,

London, Dec. 20th, 1910. X. Y. D.

## WHY?

*To the Editor of* THE LANCET.

SIR,—It is said that the report of Admiral Sir John Durnford's Committee on the Naval Medical Department is only kept back till the Treasury has given its sanction to the financial proposals therein. From this we might conclude that the Admiralty proposed to give costly benefits to its medical officers. Yet it does not seem eager to give them benefits which cost it nothing. Another Honours List has appeared without any decoration for any officer of the Naval Medical Department. These honours cost the Admiralty and the country nothing, but exalt the lucky recipient and his brother officers. Unless it is just this encouragement the Admiralty fears, why can it not secure the same marks of appreciation for its officers that the War Office and India Office can get for theirs? Is the Admiralty careless of its medical officers, or is it jealous of them? In either case the Admiralty had better note that the other Services which deal more considerately with their medical officers have competition for the commissions they offer.

I am, Sir, yours faithfully,

Jan. 2nd, 1911. PUZZLED.

## THE REBATE TO PRACTITIONERS ON THE PETROL TAX.

*To the Editor of* THE LANCET.

SIR,—Medical men using cars for their work are entitled to a rebate of 3*d*. per gallon on petrol used for that purpose up to December, 1909. After that date half this rebate is due to them. In December, 1909, I began to apply for my rebate. There was considerable delay, so I wrote to Somerset House. Then the excise officer called upon me and I got a form to fill up. After further letters I was told that I must get certificates from the dealers that the duty had been paid by them. About April I was informed that all was in order.

After another interval I was told that I must begin all over again, with a fresh form and certificates. About the middle

of the summer I was told that all was again in order. Now my letters receive a belated reply that the matter is having attention. It appears useless to apply for the 1910 rebate while things are like this. I should be glad to know if other medical men have obtained their rights for 1909 yet.

I am, Sir, yours faithfully,

Dec. 30th, 1910. MEDICAL MOTORIST.

## RECENT PLAGUE OUTBREAKS IN RUSSIA AND THE FAR EAST.

FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.

*Plague in Odessa and Neighbourhood.*

FURTHER statistics have now been published of the plague epidemic in Odessa, the appearance of which was recorded in my last letter.[1] They are as follows: Between May 22nd and 26th, 1 case, 1 death; between July 5th and 10th, 1 case, 1 death; then, in successive weeks—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Week ending July | 17th | ... | 6 | cases, | 2 | deaths. |
| ,, | ,, | ,, | 24th | ... | 10 | ,, | 0 | ,, |
| ,, | ,, | ,, | 31st | ... | 17 | ,, | 3 | ,, |
| ,, | ,, | August | 7th | ... | 17 | ,, | 3 | ,, |
| ,, | ,, | ,, | 14th | ... | 16 | ,, | 7 | ,, |
| ,, | ,, | ,, | 21st | ... | 12 | ,, | 1 | ,, |
| ,, | ,, | ,, | 28th | ... | 17 | ,, | 6 | ,, |

bringing the totals, down to the last-named date, to 97 cases and 24 deaths. By Oct. 23rd the figures had reached 132 cases and 39 deaths, and a few cases were still occurring weekly, at least until quite recently. Early in September it was reported that a student in the University of Odessa had contracted the disease, apparently in connexion with laboratory work. Down to Sept. 14th all the cases had been of the bubonic type; on that date the first pneumonic case was seen; it was fatal, but was apparently not succeeded by others.

Towards the end of October the first case of the disease outside Odessa was seen. On the 27th of that month a woman and a child aged 8 years were found to be ill with plague in the village of Roxolani, 32 versts from Odessa. The patients were related, but lived in different houses; the infection was apparently brought from Odessa by a third person, related to both. This person himself returned to Odessa and died there from plague. It is thought that as early as Oct. 19th the infection was already in the village, as on that day two fatal cases of an unknown disease occurred there. The village is a large one of some 3000 inhabitants.

*Plague in the Kirghiz Steppes.*

The infected centres in the Astrakhan government, mentioned in my last letter, seem to have remained free from the disease since the dates there given. But in July plague appeared in the Asiatic province of Semiretchinsk; in two villages of the Atbashin quarter, in the Prjevalsk district of that province, there were 17 cases of pneumonic plague, all fatal, between the end of July and August 11th. Since then no further information has been published respecting this outbreak. In the Uralsk government, in the "5th village" (*sic*) of the Jambeitinsk district, there were 7 cases of plague, with 3 deaths, between August 10th and 14th. No further cases occurred subsequently.

*Plague in Manchuria.*

A serious epidemic of plague has recently prevailed in Manchuria. A telegram of Oct. 14th reported that on the 13th there had been 9 deaths, and on the 14th 17 cases with 4 deaths, from pneumonic plague in a village near the "Manchuria" station (on the Manchuria-East China Railway). The newspapers later reported that 4 deaths from suspected plague had occurred in the village of Akurai in the district of Tchita. About the same time the military governor of Transbaikalia announced that on Oct. 13th and 14th 28 cases of suspected plague had been seen among Chinese in the settlement round the station of Manchuria. By the 24th the totals in this settlement had reached 81 cases and 73 deaths. Apparently all the cases were of the pneumonic form, and all occurred among Chinese with the exception of two—a Russian *feldsher* and a sanitary employee. A telegram from Kharbin, dated Oct. 26th, stated that 9 Chinese had died from the disease at the mines of Tchalainor on the 24th. Sanitary commissions had been formed, it was stated, on the line between Kharbin and Manchuria.

It is further stated that the first cases in the above-named village of Akurai occurred in the family of a man who hunted *tarabagans*, or marmots—the animal which, as is now well known, is extremely liable at certain seasons to suffer from a disease closely resembling plague, and highly infectious to man. From time to time, in the columns of THE LANCET, I have summarised practically all that has hitherto been published with regard to this "*tarabagan* disease." The recent cases in the village of Akurai are held, it is said, to show clearly that the animal disease and human plague are in fact identical diseases.

The latest news from these centres is as follows: In the week ending Oct. 28th there were 4 cases of plague at Dauria station, 2 at the Tarbagatai mines, near Petrovsk, 34 at the station of Manchuria, and 25 deaths at the last. On the 27th a Chinese coming "from the West" died from the disease at Kharbin. Down to Nov. 1st there had been in all, at the station of Manchuria, 184 cases with 166 deaths among Chinese, and 4 cases, all fatal, among Russians. On Nov. 2nd there were 14 suspicious cases at Kharbin, and 3 certain cases, with 1 suspicious, at the Tchalainor mines.

(All the dates mentioned in the above letter are according to the old style, or 13 days behind Western European dates.)

Constantinople, Dec. 10th, 1910.

[1] THE LANCET, Oct. 29th, 1910, p. 1310.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Board of Guardians.*

AT a meeting of the board of guardians on Dec. 21st, 1910, an important report from the infirmary management committee was presented. It recommended the establishment of a pathological and bacteriological laboratory and X rays department. The laboratory was required to make examinations of sputum, blood, and products of disease. It would also be required for the preparation of vaccines. The pathologist would make post-mortem examinations. It was estimated that a competent man, living out, to give his whole time to the infirmary, would require a remuneration of £250. The only alternatives were to send to the University or to omit this important factor from the work of the infirmary. The X ray department would be chiefly valuable for the diagnosis of internal diseases, such as stones in the kidneys and ducts, morbid conditions of the abdomen and chest, and small lesions. It would also be of value for the treatment of ringworm, lupus, rodent ulcers, &c. It was thought that an operator could be engaged to attend at the infirmary as required for about £50 per annum. Mr. Darby, in presenting the report, pointed out that investigations had taken place in order to ascertain the class of patients with whom they had to deal. There were about 4000 cases coming to the infirmary every year, and of these 3000 could be classed as ordinary hospital cases—cases for whom the alterations suggested would provide. The objection to sending specimens to the University was that the medical men referring cases wanted results more quickly than was possible if the specimens were sent there for examination. It was also important that the examinations should be made by the man who took the specimens. After some discussion it was agreed to postpone decision on the matter until the next meeting.

*Hospital Sunday Fund.*

At the annual meeting on Dec. 20th, 1910, the statement for the year was presented. This showed that the sum of £6168 0*s.* 6*d.*, the total of the year's collection, was the largest amount ever raised by the fund. This result was attained by a special donation of £1250 given by Colonel Howard Wilkinson, chairman of the General Hospital, for the endowment of a bed. Apart from that donation, the amount was practically the same as last year. The honorary secretary, Mr. F. Impey, directed attention to the growing tendency on the part of some churches to set aside a portion of the collections for the purchase of tickets for their own

distribution instead of handing over the whole amount to the fund. If this developed it would undermine the whole system upon which the collection had been built up. They overlooked the fact that the money provided by the Hospital Sunday Fund had, ever since its inception, been a free gift. If it had not been for this fact the hospitals could not continue to treat, as they did, absolutely free of cost, and in the greater number of cases without recommendations, those people who were unable to pay for treatment. The apportionment of the collections, exclusive of special donations, is as follows:—£1258 to the General and Queen's Hospitals; £125 16*s.* 1*d.* to the General Dispensary, Children's, and Eye Hospitals, Deaf and Dumb and Blind Institutions; £88 1*s.* 3*d.* to the Women's, Homœopathic, Orthopædic and Spinal hospitals, the Birmingham Sanatorium, District Nursing Society, and Lying-in Charity; £54 10*s.* 4*d.* to the Skin and Urinary and Ear and Throat Hospitals and the Moseley Convalescent Home; and £12 11*s.* 6*d.* to the Dental Hospital.

*First Southern General Hospital, T.F.*

Lieutenant-Colonel Jordan Lloyd presided at the annual supper on Dec. 17th, 1910. The prizes won by the men during the year were presented by Colonel W. P. Whitcombe. Lieutenant-Colonel Barnsley, in proposing the toast of "The First Southern General Hospital," said that three years ago a skeleton was produced by Mr. Haldane, and he was proud to know that in that division at least it had been clothed with flesh, and in no department so strikingly and successfully as in the medical. He congratulated Colonel Whitcombe that so much had been accomplished in such a short time and with such attention to detail. One could not help appreciating the patriotism and devotion of those eminent members of the medical profession in Birmingham who had supported the work, and were doing their best to see that should the need arise they would be found thoroughly efficient. Lieutenant-Colonel Lloyd, in responding, said that they had entered on the movement solely with the desire to do their best for their country and their fellow men. The First Southern General Hospital was in a state of efficiency. A great amount of practical work had been carried out during the past year, and they had arrived at such a point that they were prepared to deal with anything that might happen at short notice. They were ready even if the country were invaded next week.

Jan. 2nd.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*University of Liverpool: Medical Students' Annual Dinner: The New Associate Professor of Pathology.*

THE annual dinner of the students of the medical school was held at the Exchange Hotel on Dec. 17th last. Mr. R. W. Murray, surgeon to the David Lewis Northern Hospital, occupied the chair, Dr. E. E. Glynn filling the vice-chair. A large number of the staff of the united clinical School were present, as also were guests from the medical schools at Manchester and Leeds. The dinner proved a great success, topical songs adding to the enjoyment of the repast.—On the recommendation of the Faculty of Medicine and Senate, the Council of the University has conferred the title of "Associate Professor" upon Dr. Glynn. For the last six years Dr. Glynn has been lecturer in pathology at the University, and has proved a valuable assistant to Sir Rubert Boyce, the professor of pathology.

*Medical Men and Medical Certificates: A Committee's Grievance.*

At the last meeting of the Runcorn education committee the chairman stated that it was a common practice for medical men, when certifying that a child was unable to attend school, to neglect to fill in the nature of the illness on the certificate, although the teacher was required to fill in an elaborate form, supplied by the county council, stating the nature of the illness. He mentioned that some of the medical men resented being asked the cause of the illness. He thought it should be made known that the request was necessary, and not the mere caprice of a teacher. Mr. Redman (county inspector) said this was an old-standing trouble. In some places practitioners had taken a very strong line with regard to it. They would not state what the illness was on principle. The present arrangement was not satisfactory. It was resolved to write to the medical men asking them to fill in the certificates.

Jan. 3rd.

## LEEDS.

(FROM OUR OWN CORRESPONDENT.)

*The General Infirmary and Multiple Appointments among the Staff.*

IN an annotation in THE LANCET of Dec. 17th, 1910, headed "Pluralism and the Leeds General Infirmary" reference is made to the recent passing of certain rules restricting in some measure the holding of other hospital appointments by members of the honorary staff. Teaching appointments at the university and consulting appointments at other hospitals, of course, are not touched by this restriction, but members of the full staff must not hold any other hospital appointment, and members of the assistant staff may not hold more than one other hospital appointment, which, however, must not involve the charge of beds. In a leading article in THE LANCET of Dec. 24th on Pluralists in Medical Posts these rules are commented on with favour as follows: "The rules display very clearly the modern feeling towards pluralism in medical appointments, and are wise in their different treatment of the full and assistant staffs." The object of this further reference to the subject—of which the report, so far as it goes, is quite correct—is to point out that the changes were made not solely at the instigation of the lay members of the board, but after a full discussion of the whole matter by the weekly board, which in Leeds, happily, consists not only of the annually elected lay members but also of all the members of the honorary staff, from the senior consultant to the junior assistant. The voting power of the honorary staff is very properly limited to eight votes so as to leave the ultimate verdict, in the event of a purely party vote—an occurrence as yet unknown—in the hands of the lay members. Every member of the honorary staff therefore had an opportunity of discussing the matter and most of them did so, and the ultimate recommendation of the rules to the general meeting of the subscribers was carried without opposition from the members of the staff, by whom the alterations were almost unanimously approved. The bare announcement of an alteration in rules, carrying with it, as these do, some interference with the freedom of the members of the staff, might imply some discontent on the part of the board of management and raise visions in the minds of those not acquainted with the happy relations which have always existed in Leeds between the lay and the professional element of an antagonism which does not exist. Nor must the rules be taken purely by themselves—that is to say, without regard to the local conditions, such as the number of other charitable institutions in the city and the existing rules of the infirmary. In the first place, every member of the full staff is already under the conditions imposed by the new rules—that is, holding no other hospital appointment—and is fully of opinion that his position at the infirmary affords full scope for his energies, so far as hospital work is concerned. A recent rule, which applies to the present members of the staff as well as to future members, is that all members of the assistant staff are from the day of their election entitled to the use of a certain number of beds. A restriction as to what duties they may undertake outside the walls of the infirmary is not, therefore, unreasonable. During the discussion of the new rules representations were made by some of the other charities of the city,—namely, by the Public Dispensary, the Hospital for Women and Children, and the Association for the Prevention and Cure of Tuberculosis. It was at once seen, however, that the Hospital for Women and Children would not be injured in any way. The number of patients treated in the wards of the infirmary for diseases peculiar to women calls for all the energies of the honorary officer attached to the department of obstetrics and gynæcology, and, as a matter of fact, the only two occupants of the post resigned their positions at the smaller institution when they were in succession appointed to the infirmary. An honorary physiciancy at the Public Dispensary—a most valuable position—is often held by a member of the assistant

staff of the infirmary, but it has been the custom if any one of the three honorary physicians of the dispensary is appointed to the infirmary for that officer to resign his dispensary appointment in favour of anyone who is not in general practice, and who is therefore eligible for the post. If, however, he is promoted to the full staff of the infirmary before he has severed his connexion with the dispensary, he will, under the new rules, be called upon to do so, but in order that the dispensary may not be inconvenienced it has been arranged that the resignation need not take place until 12 months have elapsed. The only real difficulty arose in connexion with the appointments at the Association for the Prevention and Cure of Tuberculosis, which involves the charge of beds. To meet this special case a new rule is being formulated which will ensure the services of at least one man of infirmary standing. The general terms of this rule have been agreed upon by the board, but as it has not yet been submitted to the general body of the governors it must not be discussed here at present.

Jan. 3rd.

## BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

*Bristol School for Mothers.*

ABOUT a year ago the foundation of a "School for Mothers" in St. Philip's, an East-end district of Bristol, was announced in these columns. The first report, which has just been issued, is a distinctly encouraging record. The school, which has been founded on the lines of the well-known institution in St. Pancras, is open every Friday afternoon in the Broad Plain Girls' Club House. Mothers bring their children for advice as to feeding and such matters, and classes of a simple and practical kind are held. The work is done by a staff of voluntary workers in conjunction with Dr. Annie Cornall. A provident club for women expecting confinement has been started. So far it is not considered necessary to provide dinners for nursing mothers, though a few who are ill-nourished are receiving suitable meals privately in a neighbouring restaurant. Dr. D. S. Davies, the medical officer of health, takes an interest in the work and gives valuable support and help. In the year that is completed 99 mothers have attended the school and the work is expanding steadily.

*Christmas in the Bristol Hospitals.*

As usual, Christmas was by no means forgotten in the various hospitals of Bristol. The Christmas-tree celebrations are so arranged that they are held on different days at the different institutions, so that the public is enabled to allot its moral and financial support evenly. This year Miss Hayes, the Lady Mayoress, acted as distributer of presents at the Royal Infirmary, while Lady Howell Davies and Mrs. T. C. May performed a like office for the General Hospital, and the Hon. Mrs. Irby at the Children's Hospital.

*Bristol University Colston Society.*

The twelfth annual dinner of the Colston Society is to take place on Monday, Jan. 16th, in the large hall of the University. Sir Alfred Hopkinson, Vice-Chancellor of the Victoria University of Manchester, will be the guest of the evening. The circular letter from the President, Mr. J. H. Howell, announcing this, states that the society wishes to raise its annual contribution to the University funds from £450 to £1000; to this end he appeals for new subscribers and larger subscriptions. The society proposes to establish a University Colston Fund for industrial, agricultural, and public health research, to be administered by a committee representing the society and the University Senate, which shall decide on the scope and direction of the grants to be made. Such work would, of course, be carried on within the precincts and under the auspices of the University.

*The Bristol General Hospital.*

Lord Winterstoke has given £5000 to the special fund which is being raised for the extension of the Bristol General Hospital.

*Interesting Function at the Bridgwater Hospital.*

After the annual meeting of the subscribers of the Bridgwater Hospital, which was held on Dec. 21st last under the presidency of Mr. E. Jardine, M.P., Mrs. Jardine unveiled in the hall of the institution two memorial brasses which have been erected in memory of the late Dr. W. L. Winterbotham and Dr. F. J. C. Parsons, two members of the honorary medical staff. Mrs. Jardine afterwards uncovered a bust of the late Dr. Jonathan Toogood, who founded the charity about a century ago.

*New Isolation Wing for the Weston super-Mare Hospital.*

On Dec. 20th last a new isolation block, which has been recently added to the Weston-super-Mare Hospital, was formally opened in the presence of a large gathering. The building contains two wards, each of which will accommodate two patients, and a nurse's room, bathroom, kitchen, &c., have also been erected. The cost of the undertaking has been over £1500, and this sum has been generously given by Mr. R. H. Hooker of Weston-super-Mare.

*District Medical Officers and Old Age Pensioners.*

Some discussion has recently taken place in reference to the duties of district medical officers and the attendance of old age pensioners. At the last meeting of the Tavistock (Devon) board of guardians it was reported that some of the district medical officers were prepared to attend old age pensioners without any application being made through the relieving officer, whilst others stated that they should require orders from the relieving officers.

*The Devon and Cornwall Sanatorium for Consumptives, Didworthy.*

At a recent meeting of the committee of the Didworthy Sanatorium it was stated that the council of the King Edward's Hospital Fund for London had allocated £875 to the institution on the condition that 10 beds should be reserved during 1911 for patients from the London Hospital, Guy's Hospital, and the City of London Hospital for Diseases of the Chest.

Jan. 3rd.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Local Government Board and Dairy Inspection.*

A FEW weeks ago, as recorded in THE LANCET of Nov. 19th, 1910, p. 1519, the King's Bench Division unanimously refused the application of the Local Government Board for a *mandamus* directed to the Kilmallock rural district council ordering the council to obey the Order of the Local Government Board regarding the appointment of a veterinary surgeon as inspector of dairies and cowsheds. Last week the Court of Appeal, consisting of the Lord Chancellor, Lord Justice Holmes, and Lord Justice Cherry, unanimously reversed the decision of the King's Bench and directed the order of *mandamus* to issue. Lord Justice Holmes, in a reasoned judgment, held that the Dairies and Cowsheds Order, 1908, was not *ultra vires*, and also that it was within the power of the Local Government Board to define the qualifications of the inspector to be appointed, as it had done in this case—namely, that he should be a qualified veterinary surgeon. Lord Justice Cherry was not quite confident of the validity of the Dairies and Cowsheds Order, but thought it a question which the court was not called on to decide. I have not heard whether the Kilmallock council intends to take the matter further. If not, the Local Government Board is likely to proceed to enforce the Order on all the councils which up to the present have remained obdurate. It was stated in court that no less than 156 local authorities had already acted on the Order.

*Old Age Pensions and the Poor-law.*

With the end of the year 1910 the pauper disqualification is removed as regards the eligibility for old-age pensions. This week, therefore, will see a large increase in the number of pensioners. Practically the whole body of old people in receipt of out-door relief will exchange such relief for the State pension. Out-door relief rarely exceeds a couple of shillings a week, with a certain stigma attached. Of the old people in workhouses, however, a much smaller proportion than was expected will claim discharge and a pension. Poor-law guardians all over the country are much surprised at the unwillingness of the old people in their care to leave the shelter of the workhouse. One board, indeed, has decided to dismiss all inmates entitled to receive a pension—a proceeding of more than doubtful legality.

*Water-supply of Western Watering-places.*

One of the chief causes of the comparative failure of Irish seaside resorts to attract the favour to which their natural surroundings entitle them lies in a defective water-supply and drainage. Last season much alarm was caused among visitors to Bundoran, a beautiful village in Co. Donegal, by the report of an outbreak of typhoid fever, over a dozen cases occurring within a few weeks, and probably many hundred visitors were scared away. Rosses Point, Co. Sligo, suffers in similar fashion. Situated in a beautiful and interesting country, it possesses one of the best golf courses in Ireland, and is easily accessible from Dublin. Though capable of very extensive development, it is without either a trustworthy water-supply or a drainage system. Water is drawn from wells and pumps, and the sanitary receptacles are privies and cesspools. The district medical officer of health, Mr. John Laird, drew attention in his recent reports to the urgency of these matters, pointing out that refuse must percolate into the wells and pumps. Several cases of typhoid fever, with three deaths, have been reported during the past year. Notwithstanding that last year and on many previous occasions Mr. Laird made similar reports the district council has refused to move in the matter.

*Extra Professional Assistance in Poor-law Medical Work.*

By the Local Government Board regulations a Poor-law medical office is entitled, when necessary for purposes of diagnosis or treatment, to summon outside medical aid, the fee to be paid by the guardians. Many boards of guardians frame scales of fees, usually quite inadequate, and seek to impose them on the consultant, who may be unaware of their existence. Recently at Cookstown, Co. Tyrone, Dr. Charles Graves, requiring help late at night in the treatment of severe wounds, summoned Dr. R. Campbell of Belfast, fifty miles away, who motored down, arriving at 2 A.M. After operating he demanded the very moderate fee of 10 guineas. The fee according to the guardians' scale was *one guinea and car hire.* While several guardians denied the medical officer's right to call outside professional assistance unless he could get it at the guardians' scale, the magistrate, with better sense, ordered payment of the fee.

*Knighthood for Dublin Physician.*

In the list of New Year Honours a knighthood has been conferred on Dr. Joseph Michael Redmond.

*Condition of the Irish Primary Schools.*

Considering the deplorable hygienic condition of the primary schools in Ireland it was only uatural that at a meeting of the central executive committee of the Irish Teachers' Organisation, held in Dublin on Dec. 27th, 1910, the following resolution should have been passed:—

> That we beg to remind the Chief Secretary of the urgency of the question of the heating and cleaning of national schools, and request him to immediately see that his promise be redeemed, as all the conditions laid down by the Treasury have been fully complied with.

A very sympathetic letter was read to the meeting on this question of the schools by the Countess of Aberdeen. Mr. Birrell is in the Cabinet, and it is considered his duty to redeem his promise. A man of his weight in the Government could easily, if he set his mind to it, make the Treasury yield on a point so small, yet so vital to the health of the children of Ireland. The first great increase in the tuberculous death-rate in Ireland is coincident with the school age, and that increase grows steadily through the whole period of school attendance.

*Diphtheria in Dundalk.*

At an inquest on an infant held in Dundalk Workhouse on Dec. 27th, 1910, it came out in evidence that, though ill of diphtheria, it had been allowed to remain for eight days without medical attendance. It appeared that the coroner had gone to the trouble of getting paragraphs put in the newspapers warning parents that they should have their children attended to immediately on their showing any symptoms of diphtheria, and he intimated that in any case in future, where a child died from this disease without being attended to in proper time, he would hold an inquest in order to direct public attention to the parents' neglect. It was, he said, scandalous that such a state of affairs as this should exist. A number of children had lost their lives in consequence of this delay, while from the same cause others had had only hair-breadth escapes from death. The head of the police present said that he must take a note of the case mentioned by the coroner, Mr. J. C. Sellars, a medical man, for inquiry with a view to a prosecution under the Children Act for neglect in procuring medical treatment for a sick child.

*The Abbey Sanatorium, Belfast.*

Mr. Robert Hall, visiting physician to the Abbey Sanatorium, which is under the management of the Belfast board of guardians, has just issued his report for the half-year ending Sept. 30th, 1910. During that period 631 patients were under treatment, and of these 366 were discharged or died, an excess of 47 over the number in the corresponding half-year of 1909; while the remaining 265 were still under treatment. Of the patients discharged 34 were greatly improved, 177 improved, 33 not improved, and 30 had not been long in the institution. There were 92 deaths. The duration of treatment in the case of the patients discharged as greatly improved was 302 days for men and 280 days for women; improved, 162 and 123 days respectively; not improved, 143 and 57 days; not long in sanatorium, 9 and 11 days. As to the ages of patients, 6 were under 10 years, 16 were between 10 and 15 years, 60 between 15 and 20 years, 47 between 20 and 25 years, 60 between 25 and 30 years, 45 between 30 and 35 years, 41 between 35 and 40, and between the ages of 40 and 65 there were 143 patients. The youngest patient was 6 and the oldest 68 years of age. As to occupations, there were 19 spinners, 13 schools girls, 10 weavers, 8 servants, 8 stitchers, 6 hawkers, and 100 labourers. For the half-year the receipts were £489 5*s.* 11*d.* and the expenditure £6503 1*s.* 1*d.* The average cost per week of each patient was 13*s.* 9*d.*, which was increased by 3*s.* 6¾*d.* per week, representing the repayment of loans. The slight increase in the total expenditure was due to an increase in clothing purchased during the six months, the other charges being practically the same as in 1909.

*William Smyth, M.D. R.U.I., J.P.*

I regret to announce the death of Dr. W. Smyth at his residence, Banbridge, Co. Down, on the night of Dec. 31st, 1910. A student of Queen's College, Belfast, Dr. Smyth graduated as M.D. of the old Queen's University of Ireland in 1878. After some time spent in England Dr. Smyth returned to his native town in 1880, and there built up an extensive practice. He was medical officer to the Royal Irish Constabulary and to the Post Office. For a time he was a member of the Banbridge board of guardians and of the town commissioners, but failing health (owing to chronic asthma) obliged him to give up these positions. He was a J.P. for Co. Down. Dr. Smyth leaves a widow and six children to lament their loss.

*Health of Belfast.*

The report of the medical officer of health as to the health of Belfast during the period between Nov. 13th and Dec. 17th, 1910, presented at the usual monthly meeting of the city council, held on Jan. 2nd, showed that 212 cases of infectious disease had been notified—viz., 1 of typhus fever, 2 of enteric fever, 149 of scarlet fever, 2 of simple continued fever, 2 of puerperal fever, 34 of diphtheria, and 21 of erysipelas. 80 cases of pulmonary tuberculosis were also notified. The epidemic of scarlet fever has not yet abated, there being 149 cases notified during the month, as compared with 118 in the preceding four weeks. The average annual death-rate from all causes was 17·6, as compared with 15·5 in the preceding month, and 22·7 in the corresponding period of 1909. The number of deaths of children under one year old per 1000 births during 1910 (as calculated on the number of deaths registered during the 50 weeks ended Dec. 17th, 1910) was 144, as compared with 135 in 1909, 147 in 1908, 135 in 1907, and 143 in 1906. The excess-rate is largely due to the number of deaths caused by measles, of which there were 590 registered, being equal to a rate of 1·3 per 1000 of the population, which rate is as high as that registered from zymotic disease during the year 1909.

*Christmas.*

At the various Belfast hospitals and at many of the county infirmaries and union workhouse hospitals in the North of Ireland, the patients were entertained in the usual way, either by the boards of management, or by friends, at Christmas.

Jan. 3rd.

# PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Thermo-anæsthesia in Zona.*

AT a recent meeting of the Société Médicale des Hôpitaux M. Ramond said that from observations made on 43 cases of primary zona at the Hôpital de la Pitié and the Hôpital Saint Antoine he had found that, in addition to the well-known disorders of sensation, there was almost constantly a condition of thermo-anæsthesia which might persist for several months. Half of the cases also presented the condition of bulbo-capillary reflex, or "gooseskin," a phenomenon which could be easily elicited by rubbing the skin of the affected part with the finger-nail. Moreover, in three cases there was glycosuria for periods varying from 7 to 15 days, and in one case there was obvious polyuria with or without frequent micturition, just as in certain forms of sciatica. The best treatment for the pains which outlasted the eruption seemed to be the injection of sterilised air.

*Preventive and Curative Treatment of Beri-beri.*

At the November meeting of the Société de Pathologie Exotique M. Bréaudat and M. Denier reported that in the epidemic of beri-beri which occurred at Cape Saint Jacques from June 1909, to April, 1910, they had treated patients with the outer covering (*son*) of paddy, which corresponded to the bran of European cereals. They came to the conclusion that in this epidemic the disease presented both the dry and the dropsical form with a predominance of cardiac symptoms. The above-mentioned product obtained from paddy did not in general cause any digestive trouble. It was used both for prophylaxis and also as a remedy. For the former purpose it was given in doses of 40 grammes per day, and principally to the detachment of tirailleurs, on whom it had a well-marked protective influence, but in the case of men who were already suffering from the disease it did not seem to produce any effect. Used as a remedy in doses of 40 grammes and upwards, without any other medicinal treatment and without any change in the food given to the natives, its results were identical with those of the numerous therapeutic agents hitherto recommended in association with a European *régime*, while it possessed the advantages over the latter of being simple, cheap, and always obtainable by the natives.

*Foreign Lepers in Paris.*

At a meeting of the same society, held on Dec. 14th, 1910, Mr. Jeanselme gave the results of observations made on 61 cases of leprosy which he had seen in Paris partly in private practice and partly in a hospital. They had come principally from the West Indies, from Guiana, and from Brazil. Of these 61 lepers moving about freely in Paris 38 presented manifest signs of the disease, including purulent rhinitis, bucco-pharyngeal lesions, laryngitis, and leprous orchitis. Of these 38 carriers of Hansen's bacillus 26 were hospital patients but were not properly isolated, and 12 lived at home. The lepers who came to Paris belonged to all classes of society. Those who were financially well off lived in hotels, furnished lodgings, and boarding houses; they engaged servants, and in summer-time they visited mineral water resorts and sea-side bathing places, scattering the germs of infection wherever they went. Some of those in humbler positions were not less dangerous. M. Jeanselme quoted the case of a Jewish pedlar from Constantinople who carried merchandise (and at the same time the bacillus of leprosy) from village to village. Among the 61 lepers there were three school teachers, a valet, and even a nursemaid. The latter, in whom the disease was complicated with rhinitis, had charge of a child 5 years of age in a middle-class family; a fresh development of her symptoms compelled her to pass two years in the Hôpital Saint Louis, and on recovery to some extent she returned to her former employers, who gave her the care of a new-born child. Leprosy is not one of the compulsorily notifiable diseases, but some supervision of such cases is urgently required. Infected children ought to be removed from schools and lepers ought to be prevented from following certain occupations.

*Ehrlich's Remedy "No. 606" (Arsenobenzol) in the Treatment of Diseases of the Nervous System.*

At a meeting of the Société Médicale des Hôpitaux, held on Dec. 16th, 1910, M. Marinesco said that in two cases of cerebral gumma with probable implication of the meninges he had used arsenobenzol with good results, whilst in four cases of syphilitic hemiplegia there was an improvement but in a less degree. In three patients suffering from tabes the shooting pains were relieved; in a fourth case of the same disease in a quite early stage the Argyll Robertson sign disappeared. In a fifth case a superficial perforating ulcer of the sole of the foot healed up in a few days. In six cases of general paralysis there was no perceptible good effect, even when the disease was only just commencing. In two syphilitic patients suffering from early facial paralysis and neuralgia the results were very satisfactory.

*Chronic Poisoning by Carbon Monoxide.*

At a meeting of the Academy of Medicine held on Dec. 19th, 1910, M. Morel and M. Mouriquand gave particulars of a case in which a number of persons attending a laboratory in Lyons suffered from poisoning by carbon monoxide. These individuals, about 40 in number, passed about eight hours in the laboratory every day except Sunday, and 35 of them presented very similar symptoms of illness, the cause of which was at first unknown, but was eventually traced to the presence of abnormal amounts of carbon monoxide in the atmosphere of the rooms, the proportions varying from 1 part in 10,000 to 1 part in 1000. It was derived from numerous leakages of illuminating gas containing between 12 and 14 per cent. of carbon monoxide, as the addition of water gas to illuminating gas is permitted in towns. It proceeded also, but only in winter, from the defective joints of a heating apparatus. The patients suffered from nervous symptoms, digestive troubles, with hyperchlorhydria, and transient albuminuria and glycosuria. The symptoms appeared in winter when the heating apparatus was in use and disappeared with absolute regularity during the periods of vacation.

*The Huchard Bequest.*

Dr. Huchard, who was a member of the Academy of Medicine and whose obituary was published in THE LANCET of Dec. 24th last, has left to the Academy of Medicine a sum of 100,000 francs for the foundation of an annual prize to be called the "Henri Huchard Prize awarded by the Academy of Medicine for devotion to medical duty: In memory of Marcel Huchard." The intention of the testator was to assist students who had either suffered in consequence of their devotion to science or were unable to continue their studies.

Jan. 2nd.

# CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

*The Grievances of the Medical Students.*

THE following two regulations in the new medical programme submitted by the professors of the Medical Faculty to the Minister of Public Instruction have excited keen protest from all the medical students. First, it is enacted that every student must be examined in all the subjects at one fixed period. Second, a student who has failed three consecutive times in one and the same subject will have his name erased from the list of the candidates. Since these two new regulations apply also to the final students, these latter have determined to boycott the Medical Faculty and have unanimously refused to sit for the examinations until the named regulations are modified. I consider that to some extent the students have right on their side. Some of these students have spent in their medical studies six or even seven years and under extremely unfavourable conditions, inasmuch as the teaching and equipment of the Medical Faculty are not of a satisfactory character as yet, and in some ways altogether primitive. To make it possible that a student after seven years' study should lose for ever the results of his labours because he failed three times in one subject seems a most drastic proceeding, a revolution which should not have been attempted in this sudden way. In the military department of the Medical Faculty the position will be still worse under this reforming scheme, as here a student loses his medical career after a second failure in one subject. The students have submitted their unanimous protest to the Minister of Public Instruction, but without attaining any satisfactory result. In their protest they rightly dwell upon the fact that during the old *régime* they could not attend the lectures in a regular way, as owing to the political disturbances the Medical Faculty was closed for months, while a

number of the students were kept in prison for more or less long periods under the suspicion that they adhered to dangerous principles. Modifications in the new programme have been promised to the students as on previous occasions, but it now seems that the authorities do not intend keeping these promises.

*Count Tolstoy: A Personal Reminiscence.*

I had met my great compatriot only once, but to the end of my life I shall remember the profound impression of this meeting. It happened in a train going from Kieff to Odessa. Tolstoy always travelled third class. To be, at least for some short while, in his closer company I changed my ticket and accommodated myself opposite the count in a filthy railway carriage packed with peasants. Tolstoy delighted to mix with these, to converse with them on their needs and misery, and he always did it with that straightforwardness and naturalness which were such pronounced characteristics of the great man. On one station we saw a group of prisoners being despatched to Siberia. Tolstoy left the carriage and entered into conversation with them. Afterwards he made to me the following characteristic remark: "Government and society engender these outcasts and then send them to Siberia, or, still worse, execute them." When I ventured to ask what, then, should be done with such outcasts, Tolstoy answered: "What do you do with sick and diseased and insane persons? And do you really think that these prisoners are worse than those who condemned them?" Tolstoy had some perplexing incongruities of mind. Thus he disliked medical men and he felt an uncontrollable antagonism to Jews. When the latter were persecuted he never raised his mighty voice of protest. Great as he was he could not rise, in this respect, above the general feeling of the fierce Russian antisemitism. As to medical men, he often ridiculed them and their science and never showed any confidence in their treatment. Yet with all that he was undeniably the greatest Russian of his time.

Dec. 29th, 1910.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*The Jewish Population in Vienna.*

IN Vienna there is a considerable Jewish population, the vital statistics of which are fairly well collected by the Board of Health peculiar to these communities within the general community. A report has recently been issued by the "Cultusgemeinde," or board of guardians, from which the following figures may be quoted. In 1909 there were in Vienna 180,000 adherents of the Mosaic law, forming about 9 per cent. of the entire population of the capital. Their increase was 4 per cent. per annum, whereas that of the entire population was only 2 per cent. The influx of Jews from the country was not considerable, but the non-Jewish inhabitants were augmented by immigration. Thus the increase of the Jewish part of the population must be put down to three factors—namely, larger number of births, better care of the infants, and greater longevity. This can be substantiated by a few figures. There were 2502 Jewish children born alive in 1909, so that they increased the numbers of the community by 1·5 per cent., whilst the average increase of population in this city from this source is 1 per cent. The Jewish death-rate was 12·5 per 1000, while the general death-rate for Vienna was 16 per 1000. Only 185 Jewish infants under 1 year of age died in that year, being less than 9 per cent. of the total mortality, or 75 per 1000 births, whilst in Vienna the mortality of infants is 13 per cent. of all deaths, or 129 per 1000 births. That longevity is not infrequent amongst that part of the population is proved by the fact that 30 per cent. of all deaths happened in persons over 65 years of age. There were, for instance, 283 deaths at the age of 80 years, 134 between 80 and 90 years, and 14 deaths between 95 and 100 years. It is interesting to note that at these advanced ages there were more deaths of females than of males. As regards morbidity, leukæmia, diabetes, and neurasthenia were more frequent among the Jews than among their non-Jewish fellow citizens, whilst obesity with its concomitants, gout, rheumatism, and liver disorders, were frequent amongst women. The hospital registers, in which the religion of the patients is always noted, supply no evidence that mental diseases are exceptionally prevalent amongst Jews. On the whole, the report emphasizes the beneficent result of adherence to the religious rules of the Mosaic law and observance of its injunctions respecting food, personal cleanliness, and the care of pregnant women and infants.

*The State Institute for the Care of Mothers and Infants.*

In anticipation of the eightieth anniversary of his birthday the venerable Emperor expressed a wish that the money which was about to be laid out in celebrating that event should be made use of for the benefit of children. The suggestion was immediately followed and a large sum of money has now been collected, from which the Reichsanstalt für Mutter und Säuglingsfürsorge (Institute for the Care of Mothers and Infants) has been organised. The Emperor has graciously consented to be the Protector of the Institute, whilst some of the highest officers of the State hold various honorary positions in connexion with it. The following is an outline of the system according to which the work of the institute will be conducted. Every district hospital will be asked to send two members of its female nursing staff, and these women will at the institute be formed into classes and will receive instruction, lasting from three to six months, in all subjects pertaining to the management of infants. On the conclusion of this instruction the nurses will return to their hospitals. Midwives will also be eligible for these courses of instruction, and as they are very often the principal advisers of young mothers with regard to the upbringing of their families they will have opportunities of combating popular errors and superstitions relative to the first year of a child's life. It is also intended to organise a special order of children's nurses. In Germany and some other countries the necessity of preliminary training for such positions is recognised, but in Austria there is at present nothing of that kind worth speaking of. An important branch of the institute will be the post-graduate classes for medical practitioners who desire instruction in the care of healthy children, as well as for those who wish to qualify for the position of head of one of the branch institutes to be created later in various cities. Classes will also be formed in which women will be taught how children should be fed and brought up. In connexion with these classes there will be "consulting days," on which mothers who can produce evidence of being in necessitous circumstances may bring their infants to the institute, where they will receive advice as to feeding and other problems of health and disease. An important department of the Institute will be a school, in which young persons suffering from either moral, psychical, or physical defects will be received, educated, and taken care of, special attention being paid to feeble-minded children, to those afflicted with hereditary taints, and to sufferers from the after effects of diseases of the brain and nervous system. A staff of specially trained teachers, medical men, and nurses will be constantly at work, and as the practical care of such afflicted children is hardly known here for the lower classes of the population, the necessity for it is really urgent. The system adopted at the institute will provide for the training every year of 20 special children's nurses and 40 midwives and hospital nurses; there will also be accommodation for 40 infants and 20 older children for six weeks each, or 550 children per year. It is estimated that the children will stay in the infants' department about 15,000 days and in the educational department about 7500 days. It is also expected that many deserted mothers will be able to get employment as nurses after attending the schools and that deserted children will be taken care of. Naturally the effect of the institute will soon be felt all over the empire, if every year only a few hundred mothers and midwives profit by its teachings.

Dec. 26th, 1910.

## CANADA.

(FROM OUR OWN CORRESPONDENT.)

*Cocaine in Montreal.*

IN one police district alone in Montreal there are said to be over 600 young people of both sexes addicted to cocaine. So widespread has the habit become that judges have made several pronouncements upon the danger to the public, one asserting that "Cocaine is the worst danger to our social life in Montreal." The Dominion parole officer states that 12 per cent. of the prisoners ascribe their downfall to cocaine. From Sept. 10th to Nov. 20th the police records

show that 75 people have been arrested for selling the drug. 150 arrests and convictions have been made in the Recorder's Court since last May. Recorder Weir tells of the stream of mothers visiting him and imploring the authorities to save their children. The vice is most prevalent amongst young people between the ages of 16 and 24. In the very heart of the city there is said to exist a Cocaine Club, where children even may get the seductive drug. The Federal authorities are being appealed to to amend the criminal code with regard to cocaine.

*Ontario Medical Council's Wide Powers of Discipline.*

In December, 1909, an Ontario practitioner was charged with using an instrument on an unmarried woman for an unlawful purpose. He was acquitted by the courts. The College of Physicians and Surgeons of Ontario instituted an inquiry into his conduct under that section of the Ontario Medical Act which renders a practitioner liable to have his name erased from the Register if guilty of any infamous or disgraceful conduct in a professional respect. The practitioner objected to the College making this inquiry after having been acquitted in the courts of law of the country, and therefore sought an order from the courts prohibiting the College of Physicians and Surgeons from investigating charges against him. The action for the injunction came before Mr. Justice Riddell of the Ontario bench, who refused the motion of the practitioner in question. The main objection to the College conducting an investigation was that the acts charged were crimes, and that the College could not inquire into a crime. Interpreting the Act, Mr. Justice Riddell states that the causes for removal from the Register of the College are divided into two classes—(1) Crimes which in Canada are felonies or misdemeanours; and (2) infamous or disgraceful conduct in a professional respect. In the former cases these are left to the criminal courts; if convicted the name is to be removed for such cause. Over the second class the criminal courts have no jurisdiction, and therefore the College must itself make inquiry. Mr. Justice Riddell says: "The purport of the Act is, that if a medical man has been publicly tried in a court of criminal jurisdiction and has been there convicted of an indictable offence against the people he no longer has any right to be a registered practitioner. If he has not been so convicted the College must inquire into the facts of an alleged misconduct, and if misconduct is proved, whether such misconduct be a crime or not, so long as it is infamous or disgraceful in a professional respect, it is quite the same as if the medical man has been convicted of a crime." If the finding of the College is not to the liking of the medical man he may appeal to the Divisional Court, appears to be Mr. Justice Riddell's summing up of the situation, one which certainly puts a heavy onus on the accused.

*The Medical Witness and the Expert Witness.*

The same judge addressed the Academy of Medicine, Toronto, recently on the above subjects. As a preface to his remarks the learned judge quoted the ancient joke as to the comparative degrees of liars, and said that the extraordinary antics of some men when called as medical experts were a disgrace to the medical profession. In the main the medical witnesses were honest. If the medical witness gave evidence contrary to the fact or contrary to his real opinion, he was a criminal equal with the man who plunders bank vaults by means of dynamite. The most striking or shocking examples were in cases where insanity was set up as a plea. Too much stress, however, should not be laid on difference of opinion *per se*, for opinion might be the result of honest thought and conviction. In law, too, there was the same divergence, and expert witnesses should not be expected always and necessarily to agree upon matters of opinion, whether in medicine or otherwise. After giving some sound advice for the guidance of the medical witness, he dealt with the expert witness, and thought there was grave danger of the medical profession being discredited by the competition for expert witnesses in damage suits and criminal cases, as many seemed to become advocates for one side or the other. He thought it would be quite possible to have a physician, or a board of physicians, of high standing appointed by the Crown, or retained as Crown counsel are retained in criminal cases. The evidence of such experts would be available alike for prosecution and defence. In certain criminal cases it is now the practice in Ontario to appoint two experienced alienists in the employ of the Ontario Government, whose whole duty it is to determine the exact facts and who are at the disposal of the defence as well as of the prosecution. The whole question is one which has been a puzzling problem to physicians, lawyers, and jurists alike. The suggestion has been made that here in Ontario the Ontario Medical Association and the Ontario Bar Association should join forces towards having an expert testimony law placed on the statute books of the province.

*Dominion Registration.*

Dr. T. G. Roddick of Montreal has been successful in getting the medical councils of all the provinces in Canada to agree to the proposed amendment of the Canada Medical Act, 1902. This amendment has been introduced into the Canadian Parliament, now in session, by Dr. Black, member for Hants, Nova Scotia. If agreed to by the Federal Houses it will then have to be ratified by the local legislatures of each province. As all the provinces, so far as the profession is concerned, have assented to the amendment, there is now every likelihood of Dominion Registration becoming the law of Canada. Then reciprocity will be secured with the General Medical Council of Great Britain.

Dec. 24th, 1910.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*Report of an International Commission on the Control of Bovine Tuberculosis.*

AN International Commission, formed under the auspices of the American Veterinary Association and consisting of members of the medical profession, veterinarians, and some laymen of the United States and Canada, in a recent exhaustive report recommended that legislation regarding the control and eradication of tuberculosis among domestic animals be rendered uniform; that the laws of the United States and Canada and other American countries for the admission into America of animals from without be made stringent and as much alike as possible; and that the laws governing the inter-state and inter-provincial movement of cattle and that between different American countries be harmonised. In concluding its report the Commission suggests that provision should be made to carry on the work, either by continuing the Commission as at present constituted, or with such changes in the *personnel* as may be considered desirable.

*Employer's Liability in the United States.*

It has long been known that the United States is much behind European countries in laws safeguarding workmen from injury and guaranteeing to them compensation for loss of wages through disability from injury, or to their families in case of fatal accident. That ingenious appliances are not lacking is proved by the fact that the American Museum of Safety has recently opened in New York City a permanent exhibition of various machines and models which demonstrate simple, practicable safeguards adapted to the needs of the American employer for protecting the lives and limbs of his workmen. It is hoped that this exhibition, by showing that at least 50 per cent. of the present appalling number of accidents are preventable, will lead to proper legislation in the various States, whereby the employer shall be rendered criminally liable for not providing his factory with safeguarding appliances, as well as be forced to provide some system of insurance for the families of killed or injured labourers.

*A Society of Medical Sociology.*

A new medical society has applied for incorporation in the State of New York, and formulates its somewhat novel purposes as follows:—

Recognising the intimate relationship between disease and the social-economic system under which we live, recognising that many diseases are caused directly by our social and economic conditions, recognising that the efficiency or inefficiency of our treatment often depends upon the economic conditions of the patient, recognising that there are many problems deeply and vitally affecting the welfare of mankind which are left practically untouched by any existing medical society, the American Society of Medical Sociology has been organised for the purpose of studying radically all questions of a socio-medical nature, and invites your cöoperation.

*Organised Relief and Distress in New York.*

The Charity Organisation of the City of New York in its annual report on Dec. 10th, 1910, says that the number of families cared for in the period covered by the report was 7616, as compared with 8172 in the previous period. The

relief disbursed amounted to $79,222, as against $84,625. Altogether the society disbursed for general work $132,377, a decrease of 7 per cent. There was an increase in the deficit in the funds for this work, however, of 22 per cent. The society considers it doubtful if the low figures of relief work in the years preceding the financial disturbance will ever be reached again because of the fact that the society is reaching persons who in former years would not come for help from organised charity. The amount of distress has been seriously increased by the general rise in the cost of all articles of food and clothing without any corresponding rise in wages. The organisation has been obliged to cut down its supplies of meat to each deserving family to twice weekly, to eliminate fresh vegetables, to reduce milk and butter to the lowest possible amounts, and it has well-nigh reached an irreducible minimum of tea and coffee. The effects of these reductions are already plainly apparent in the poorer physique of adult applicants for relief and in the stunted look of the children.

*Public Exhibitions of Bacteriology.*

The American Museum of Natural History is about to open a very completely equipped bacteriological laboratory. Physicians who desire certain specimens are at present obliged to send as far as Prague for them, unless some private laboratory happens to have what they want. This new laboratory will act as a base of supplies for similar laboratories all over the country. A series of public exhibitions is being arranged. These, together with public lectures on bacteriology under the auspices of the public school system, will, it is hoped, eventually have an excellent effect on the public attitude towards the medical profession, and demonstrate to the public the actual scientific basis of modern medicine.

*Traffic in Rotten Eggs.*

The New York Health Department has just inaugurated a crusade against the "rots and spots," as the eggs are called purchased by the cheaper class of bakers and confectioners. Whereas eatable eggs sell for about 2*s.* a dozen in the depth of winter, 1 pound of a mixture of rotten yelks and whites, or the contents of about 12 eggs, can be obtained by a baker for 1½*d.* This nefarious trade is hard to detect, for the cakes and bread made from bad eggs present a very good appearance.

*Cholera.*

Fear of the cholera has led to exceptionally careful examination of all incoming ships. On a ship arriving from Naples on Nov. 17th nine persons were found to be ill of cholera, and there had been two deaths from the disease during the voyage. News came recently from Quebec, Canada, that a case of cholera had been discovered on the steamer *Royal George*. Subsequent investigation proved the case to be merely one of gastro-enteritis, but the officers of the ship in question are in trouble for failing to report it, and the owners are liable to a heavy fine.

*Windfalls for Institutions.*

Munificent gifts of land and money have been made recently to the Tuberculosis Preventorium at Lakewood, N.J., which will soon be able to take care of over 200 children simultaneously on some 300 acres of ground. The New York Hospital for the Ruptured and Crippled also has benefited by the remarkable rise in real estate prices in New York. It has sold its property, mainly to a railway, for £270,000, probably five times what was paid for it many years ago.

*Forged Licences to Practise.*

Discovery has been made of a large number of forged certificates to practise medicine and dentistry in New York, and investigation as to the holders of such forgeries will be difficult and probably incomplete.

Dec. 23rd, 1910.

## NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

*Public Health Matters.*

AN influential deputation, consisting of the members of the standing committee of the South African Medical Congress, and practically all of the medical Members of Parliament, has recently waited by appointment on the Right Hon. the Prime Minister, General Botha, and the Hon. the Minister for the Interior, General Smuts, and communicated to them the unanimous wish of the medical profession in South Africa, as expressed in the resolutions passed at the last meeting of Congress, to the effect that, *inter alia*, a Portfolio of Public Health should be created, to be held, if need be, in combination with some other portfolio, and that a medical officer of health for South Africa should be appointed and should be the sole administrative head of the new department. The views of the profession were admirably voiced by Dr. Mathew Hewat, health officer for the Mowbray municipality. To Dr. C. F. K. Murray, the President of the Congress, were entrusted the resolutions regarding the proposed General Medical Council for South Africa, and he also ably fulfilled his task. At the conclusion General Smuts stated that the matters brought forward were of serious moment, and that the resolutions would be taken into consideration by the Government. Since the interview, however, nothing has been done by the Government in the direction desired, and it is regarded as fairly certain that the resolutions will be pigeon-holed unless the profession continues the agitation. It is felt that before Ministers can be expected to realise the gravity of continuing present methods of administration of public health affairs, and before Parliament can be expected on non-party lines to bring pressure to bear on the Government, the public at large will have to be educated, and the local organising committee now proposes, before taking further steps, that members of the profession should throughout the country attempt by letters to the lay press to show the really urgent need for a State Department of Health. It is thought that the facts regarding existing methods of administration have only to be clearly put before the public when the need for such a department will be realised and its creation undertaken in deference to public opinion. But the local organising committee is desirous above all that the question should not be regarded as a party one. Meanwhile there are grave matters intimately affecting the health of the people within the Union, which, without a proper department under the control of a chief administrative medical officer, can at present but inadequately be dealt with. To mention but a few of these. There is the guarding of the State against the introduction of infectious diseases from beyond its boundaries at the ports and in the north. We know to our cost the need for an efficient and coördinated port health service in South Africa. We have had experience of plague on several occasions introduced from India and elsewhere. This disease is only too likely to be introduced again at any time by sea, and when introduced it will be, as before, exceedingly difficult to eradicate owing to the extreme rat infestation of our ports and many of our inland towns. Apart from the necessity of taking adequate precautions against the introduction of plague by rodents in vessels arriving from India and other infected countries (even England), there are at present epidemics of cholera in Russia, Asia, and Madeira, and if cholera were introduced at this time into South Africa it might be difficult to combat. Beyond the boundaries of the Union in the north there is sleeping sickness, apparently slowly but surely finding its way south. Within the Union there are problems already urgently demanding attention, such as malaria, leprosy, syphilis, tuberculosis, and small-pox, as well as the question of State supervision of the mines. In portions of the Transvaal malaria prevents whole districts from becoming properly developed. A large number of lepers are segregated within the Union, but there are probably over 2000 still at large. Many of these have been reported to the authorities, but owing to lack of accommodation in the leper settlements have not been removed from their homes. Syphilis is rampant and practically uncontrolled in certain native areas, particularly in portions of the Transvaal, in Bechuanaland, and in parts of Zululand. In Bechuanaland it is stated that actually nearly 4 per cent. of the native population is being treated for this disease, but the administrative arrangements are defective, and a large number of infected persons receive no treatment. In the Transvaal the arrangements are even more unsatisfactory, while in Zululand practically nothing is being done by the Government at all. Tuberculosis is prevalent all over South Africa and is becoming year by year more and more serious, particularly amongst the native races. Its spread has been due to defective housing, particularly in the towns, but much more to the unsatisfactory conditions under which natives work and live at the mines. All these matters and many others demand the attention of an active department. They would, however, appear to be

receiving but scanty attention at present, though eventually the country will have to pay, and pay heavily at that, for neglecting the safeguarding of the health of its citizens. As far as the Transvaal is concerned, there has been no efficient health service since Dr. George A. Turner, the medical officer of health under Crown Colony Government, was retrenched, which took place soon after the advent of responsible government in that colony. In the Orange Free State and Natal small but defective health administrations existed prior to Union and have been practically left untouched since Union. In Cape Colony, a strong State department existed until the accomplishment of Union, when it was broken up. It is not too late for this to be reconstructed, and after amalgamation with the other health administrations it might serve South Africa with the success with which it formerly served the inhabitants of Cape Colony. It is the object of the profession in South Africa to see that public opinion is aroused to insist upon reform before it is too late.

*Death of Dr. John Greathead.*

On Oct. 26th, in an almost inaccessible portion of British East Africa, a well-known and greatly respected practitioner in South Africa, Dr. John Greathead, met his death from pneumonia and, so it is stated, sleeping sickness while on a shooting expedition. Dr. Greathead had for many years a large practice at Grahamstown in Cape Colony, and was virtually the only surgeon with any considerable consulting practice in the Eastern Province. He was a brilliant surgeon, with a considerable experience and ability in ophthalmic work. He is perhaps best known to South Africans as a member of the Medical Council of Cape Colony. By his death the profession has suffered severe loss.

*Medical Education.*

During the past two years there has been a movement to cheapen the cost of medical education to South African students who hitherto have had to take out the whole five years' curriculum at a recognised medical school in the British Isles. Last year, however, the passing of the examination in botany, chemistry, physics, and biology was recognised by the authorities of the Edinburgh University as exempting students from the corresponding examination at the latter institution, and the course of study for such examination was in consequence permitted to count as one year in the student's curriculum. Edinburgh has always attracted medical students from South Africa far more than any other educational centre in the old country, and the reason is obvious, for it has always afforded all possible facilities to colonial students. The recognition of the preliminary science examination, as above mentioned, has increased the tendency of students from this country to select the Edinburgh University as their Alma Mater, and it is expected that the other examining bodies and universities, unless debarred by their Charters or Acts of Incorporation, will follow suit, as, indeed, the Royal Colleges in England have already recently done. An arrangement was entered into a few months ago between the South African College (one of the oldest and best endowed colleges affiliated to the Cape University) and certain examining bodies in Great Britain, whereby a proposed course of tuition at the College has been approved of as satisfying the requirements in respect of laboratory instruction for the D.P.H. examinations. The medical officer of health of the City of Cape Town has been appointed honorary lecturer on hygiene to the College, and it is understood that he is expected to give all the laboratory instruction required, at any rate in bacteriology. Proper tuition in chemistry for the purpose of the course is already obtainable at the College and should be given by the professor of chemistry, if this has not already actually been arranged. It is not felt, however, by the profession generally that sufficient instruction in bacteriology can be given except by a specialist in bacteriology, and it is probably this feeling which has hitherto kept intending candidates from taking out the course locally. Under all the circumstances it would not seem amiss if the General Medical Council looked into the matter. Within the last few months another step forward in educational policy has been decided upon by the same College and one which will meet with universal approval—namely, the establishment of chairs of anatomy and physiology. The late Government of Cape Colony was interested in the matter and promised financial support. This promise has been ratified by the Government of the Union, which has placed on the Estimates for consideration by Parliament sums of money in aid of the necessary buildings and provision for the salaries of professors of anatomy and physiology respectively. It is expected that these will be sanctioned by Parliament without difficulty, subject to the condition that if a national teaching university should ever be established the college authorities will not oppose the transfer of such chairs to the university. Plans for the new buildings are now being considered by the college council, and it is expected that building operations will be put in hand at an early date. An Anatomy Act has, I understand, been prepared and will be submitted to Parliament some time this session. It is stated to be framed on the lines largely of other colonial statutes, particularly the State Ordinances of Australia and Canada. It provides, *inter alia*, for the licensing of schools of anatomy and for the appointment of inspectors of anatomy. Also that the body of any person dying in a public hospital, asylum, or penal establishment which is not claimed within 24 hours may be handed over to an inspector of anatomy for the purpose of being prepared for dissection, and if not claimed within a fortnight thereafter may be used at any licensed school for the purposes of dissection. It is not thought that the proposed Act will meet with any opposition, and it will doubtless shortly receive the sanction of Parliament. When these chairs have been established the college will have to obtain recognition of the course of tuition, so as to enable students to proceed home for the purpose of entering for the second professional examination without having to take out courses of instruction in these subjects there, and then it should be possible for a South African student to qualify in medicine after three years' residence at such educational centre out of South Africa as he may select. It will be some years before any further step forward in the direction of providing medical education locally will be possible. If this scheme is energetically carried through it should secure for Cape Town the South African Medical School of the future. Cape Town can no longer be the centre of administration, but it is likely that, besides being the legislative capital of the Union under the constitution, it will become the most important educational centre in South Africa, for which it must be admitted it is admirably fitted on account of its climate and magnificent surroundings, although many would prefer to see such a centre established in the north.

Dec. 4th, 1910.

# Obituary.

## JAMES EDWARD POLLOCK, M.D. ABERD., F.R.C.P. LOND., L.R.C.S. IREL.,

CONSULTING PHYSICIAN TO THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

IN the death of Dr. James Edward Pollock on Dec. 18th medicine has lost another of its distinguished veterans. Born in 1819 he was the son of a barrister, Mr. Edward Pollock, and after pursuing his medical studies in Dublin received his first diploma in 1840 as an L.R.C.S. Irel. In 1842 he began practice in Rome, but a few years later he received the degree of M.D. from King's College, Aberdeen. Coming to London, Dr. Pollock established himself in practice, his first appointment being that of physician to the Western General Dispensary. He was later elected physician to the Brompton Hospital for Diseases of the Chest, with which institution some of his best work is connected, and he held the office of consulting physician thereto at the time of his death.

His work at Brompton was most painstaking and accurate, and he served that institution faithfully, not only in a strictly medical capacity, but also on the committee of management, in which his wide knowledge of affairs proved very valuable in harmonising the sometimes divergent views of the economic and scientific aspects of benevolent institutions. In 1865 he published a work on the "Elements of Prognosis in Consumption," founded on an analysis of about 3500 undoubted cases of the disease. In these days of exact laboratory data upon which to found a correct medical judgment in regard to diagnosis and prognosis, it is remarkable, on looking through Dr. Pollock's book as it was first published, to observe how closely he forestalled, on clinical grounds alone, indications now substantiated and explained

by our modern knowledge of the pathology of pulmonary tuberculosis. As was said by us of the book at the time of its publication, it was "not manufactured from the writings of his predecessors," but was "the result of much honest and painstaking work on his own part." It may even now be consulted with advantage by those well enough versed in modern pathology rightly to interpret its deductions. In 1864 Dr. Pollock was elected to the Fellowship of the Royal College of Physicians of London, of which body he became a Censor in 1884. In 1893 he was Senior Censor, and in the same year, in consequence of the death of Sir Andrew Clark, acted as pro-President for the interregnum until the following presidential election. He was also a member of the Council and examiner in medicine. In 1883 he delivered the Croonian lectures on Modern Theories and Treatment of Phthisis, and in 1889 the Harveian oration.

In 1881 he was president of the Harveian Society and delivered the lectures on the Prognosis of Heart Disease. He was also a former vice-president of the Royal Medical and Chirurgical and Pathological Societies. He took great interest in the subject of life insurance, was medical officer of three societies, and was among the founders of the Life Assurance Medical Officers' Association, of which he was rightly chosen first president. Here, as in other fields, his careful observations, his accurate records, and his clear judgments were of the highest value, and his ripe experience was crystallised in the publication, in 1889, in conjunction with Mr. James Chisholm, an actuary already well known through his writings on the assessment of extra risks, of the "Medical Handbook of Life Assurance," a book the completeness, brevity, and trustworthiness of which were generally recognised. His other writings were chiefly lectures and contributions to the medical press on the subject of consumption. During the later years of his life he had an extensive consulting practice, and in 1895 was appointed physician extraordinary to Her Majesty Queen Victoria.

There were present at his funeral, which took place in Highgate Cemetery on Dec. 22nd, 1910, besides his relatives and friends, the President, the Senior Censor, and the emeritus and present registrars of the Royal College of Physicians of London, and, as representing the Brompton Consumption Hospital, Dr. Theodore Williams, Dr. R. Maguire, Dr. S. H. Habershon, Dr. H Batty Shaw, Mr. R. J. Godlee, and the secretary, Mr. Francis Wood. Dr. Pollock was a kindly genial gentleman, a courteous and learned physician with a dignified presence, and a worthy representative of the best traditions of medicine. After a full life of active work, crowned with the leisure earned thereby, he died at a ripe age, holding the esteem and affection of his colleagues and of a wide circle of friends.

Dr. Theodore Williams writes:—"The Brompton Hospital and the College of Physicians have lost one of their most striking personalities by the death of Dr. J. E. Pollock at the advanced age of 92. From the year 1867, when I joined the staff of the Brompton Hospital as assistant physician, until shortly before his death, I was on very intimate terms with Dr. Pollock, and as a friend and colleague I profited by his sagacious and wise counsel and by his sterling example. As a clinical and scientific physician he was quite a model. His methods of auscultation and percussion, derived, I believe, from the late Dr. Stokes of Dublin, were most accurate and were carried out with the greatest precision. Then came the diagnosis, and, perhaps the most valuable of all, on which this was based, were the succinct notes to be found on Dr. Pollock's ward cards. The worth of his notes can be realised from the fact that his well known work on the 'Elements of Prognosis in Consumption' dealt with 3500 cases, and all these were noted by his own hand. Dr. Pollock held strongly to the large part played by the constitutional powers, the soil as it is termed, in distinction to the seed or tubercle bacillus, in the evolution of phthisis, and always dwelt on the importance of strengthening these powers in every possible way. He was one of the earliest advocates of the open-air treatment of the disease. He laid great stress also on heredity, and was the first in England to point out the large proportion of acute cases in which heredity was present and also how rare hæmoptysis was in these cases. Dr. Pollock's statistics were some of the early factors of the more favourable view of consumption that is now held, and he applied these statistics to life assurance, obtaining many interesting figures and results. He was one of the best examiners for life insurance I have ever known, and he owed this principally to his large experience, both in life offices and in hospital and private practice. With regard to Dr. Pollock's conduct as a colleague on the administration of the Brompton Hospital, I cannot give too much praise. To his colleagues he was most loyal, always considerate and deferential to seniors and even to those of his own standing, and encouraging and stimulating to juniors, often affording them opportunities for work and distinction by placing his wards at their disposal and infusing us all with a high standard of professional duty and honour. Perhaps where he shone most was in his relations with the Brompton Hospital committee of management, which for many years it was his duty, as chairman of the medical committee, to attend. Dr. Pollock had the happy knack of placing the latest appliances of modern medicine and surgery in so clear a light that the desirability of their adoption became at once obvious, and the committee after a time valued his opinion very highly. Naturally Dr. Pollock, while loyal and kind hearted, showed his Hibernian origin in loving a fight, and a right good fighter he was, as might be occasionally witnessed at the medical societies. He was an eloquent speaker and a clear writer. Dr. Pollock was an affectionate husband and a fond father, while truly his left hand did not know of the many self-sacrificing and generous acts of mercy which his right hand did, and which made his name a blessed one in many a poor family, by whom he was loved and respected as much as by his colleagues and his friends."

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## WILLIAM BAIRD McQUITTY, M.A., M.D. R.U.I., D.P.H. CAMB.

IT is with sincere regret that we announce the tragically sudden death of one of the most brilliant of the younger physicians of the Belfast medical school, Dr. W. B. McQuitty, which occurred on Friday night, Dec. 30th, 1910, at his residence, University-square, Belfast, from cerebral hæmorrhage, after only half a day's illness, at the early age of 48. Dr. McQuitty was a native of Belfast, son of the late Mr. James McQuitty, a Belfast merchant. He was a foundation scholar at the Royal Academical Institution, Belfast, from which he entered Queen's College in 1881–82. There he had a most brilliant career, being both a junior and a senior scholar, and at the Royal University he took first-class honours at the B.A., M.A., and M.D. degree examinations, and also gained the studentship in experimental science. He subsequently studied at the Rotunda, Dublin, at the London Hospital, and at the Hospital for Sick Children, Great Ormond-street. He was a D.P.H. of Cambridge. Settling down in his native city, he was first attached to the Ulster Hospital for Children, but on Oct. 27th, 1900, his real life work began when he was appointed assistant physician to the Royal Victoria Hospital. There he used all his previous training to enable him to get a thorough practical acquaintance with disease, and not only did he by this experience become himself a physician, but he gathered round him session after session a large class of students, who appreciated to the utmost his thorough mastery of the diagnosis and treatment of the patients, and who subsequently, when they began practice, frequently called him in consultation. As a result, during the past five years Dr. McQuitty gradually became one of the most valued consulting physicians in the North of Ireland, an advancement due alike to his abilities and to his training in general and in hospital practice. He appeared at times to the greatest advantage at the local medical societies when, with the keenest powers of observation, he showed very rare cases, and at the same time indicated by a few words his complete knowledge of medical literature. Dr. McQuitty was a man of the most amiable and kindly disposition; he had brains, grit, levelheadedness, and the greatest power of work. He impressed all who came into contact with him as a physician who thoroughly examined each case in the most careful way, availing himself of every avenue of diagnosis A man who had no showy or evanescent qualities, he gave one the impression of great reserve power, and those who knew him best clearly saw that every year he improved in both skill and knowledge. His death, at such a comparatively early age, is a great loss to the public of the North of Ireland, to the profession, and to the Belfast Medical School. A true friend, a loyal colleague, and a most conscientious and able physician, his death is lamented by everyone in Belfast. Although Dr. McQuitty was unmarried, one of the saddest features connected with his early decease is the fact that he had quite recently

become engaged. He was buried in the city cemetery, Belfast, on Jan. 2nd, his remains being followed by a concourse of his professional brethren and of the public.

### WALTER BROCK DE JERSEY, M.B., B.C. CAMB., M.R.C.S. ENG., L.R.C.P. LOND.

THE death of Dr. Walter Brock de Jersey of Guildford, which occurred at Ascot last month at the early age of 47 years, has been learned with great regret by a large circle of patients and friends.

Dr. de Jersey was the son of Mr. Carey de Jersey of Guernsey. He was educated at Elizabeth College, Guernsey, and Marlborough. He proceeded to Pembroke College, Cambridge, in 1881, graduated B.A. in 1884, and entered at St. Thomas's Hospital in 1886. In 1889 he qualified as M.R.C.S Eng., L.R.C.P. Lond., and graduated M.B., B.C. Camb. in 1890. He held the posts of house physician and clinical assistant in the Ear Department at St. Thomas's Hospital, and subsequently that of house surgeon and senior resident medical officer at the Evelina Hospital for Sick Children. After a voyage to the West Indies with Lord Brassey on the *Sunbeam*, as medical officer, he married in 1893, and having engaged in private practice in London for a short time finally settled in Guildford in 1895. For several years past he had been honorary medical officer to the Royal Surrey County Hospital, where his loss is much deplored by his colleagues and the staff of that institution.

His health had been failing since the summer, but he continued with his work and only reluctantly gave up some three weeks before his death to go to a nursing home at Ascot. His untimely death came as a painful surprise to his friends and patients, as it was not generally known that he was seriously ill. He was buried at Stoughton Cemetery, Guildford, the first part of the service taking place at Christ Church, which was attended by a large and representative gathering, including all the medical men in practice in the town and many former patients. He leaves a widow, a son, and two daughters to deplore the loss of a much-loved husband and father.

A friend and neighbour writes to us as follows:—"Dr. de Jersey was ever ready to assist his colleagues, and the writer had frequent opportunities of appreciating the kindliness and generosity of his nature. He adopted a high standard of professional etiquette, and his advice on this and other matters was readily given and greatly valued. He was much attached to his work and took a personal interest in all his patients. I am able to quote the following expressions of the esteem and confidence which he inspired in his patients. 'Dr. de Jersey,' writes one patient, 'had characteristics and qualifications which make his loss seem irreparable to those of us who esteemed it a privilege to consult him as the "family doctor." The entire absence of the spirit of the "high priest," a wonderful sympathy, and the perfect courtesy of the best type of an English gentleman united in confirming the confidence which his professional skill inspired.' Another writes: 'Rich in saving common sense, and possessed of a ripe and well-balanced judgment, his advice on matters non-medical was frequently sought with the happiest results.'"

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Wilhelm Jaeger of Darmstadt, for many years surgeon to the Municipal Hospital and previously assistant to Professor Gustav Simon at Heidelberg. His age was 72 years.—Dr. Ludwig Toinwaldt, a well-known laryngologist of Dantzig, aged 67 years.—Dr. Samuel Alexander, professor of genito-urinary diseases in Cornell University Medical College, New York.—Dr. Ch. A. Herter, professor of materia medica and therapeutics in the New York College of Physicians and Surgeons.—Dr. F. Fée, inspecting medical officer of the French Army Medical Service.—Dr. G. Profeta, professor of dermatology in the Genoa Medical School.—Dr. Johann Fritsch, extraordinary professor of mental diseases in Vienna.—Dr. Wilhelm Fischel, *privat-docent* of midwifery and gynæcology in the German University of Prague.

A SOMERSET CENTENARIAN.—Mrs. Elizabeth Andrews died at Street, Somerset, last week in her 102nd year.

# Medical News.

UNIVERSITY OF LONDON.—At examinations held in December the following candidates were successful:—

M.D. EXAMINATION.

*Branch I., Medicine.*—Charles J. Armstrong-Dash, B.S., St. Bartholomew's Hospital; Henry Swarbrick Brown, Guy's Hospital; John Hay Burgess, St. Mary's Hospital; Cecil Clarke, B.S., University of Bristol and University College Hospital; Herbert Rees Davies, B.S., London Hospital; Edward Vincent Dunkley, B.S., St. Thomas's Hospital; Dan Arthur Powell, B.S., Charing Cross Hospital; William Hebert Smailes, B.S., University of Leeds; William Rees Thomas, B.S., University College, Cardiff, and Charing Cross Hospital; and Rawdon Augustus Veale, B.S., University of Leeds.

*Branch II., Pathology.*—Edgar Hartley Kettle, B.S., St. Mary's Hospital.

*Branch III., Mental Diseases and Psychology.*—John George Porter Phillips, B.S., University College and Guy's Hospitals.

*Branch IV., Midwifery and Diseases of Women.*—Mary Alice Blair, B.S., London (Royal Free Hospital) School of Medicine for Women; Herbert Orpe Brookhouse, B.S., Guy's Hospital; Ethel Constance Cousins, B.S., London (Royal Free Hospital) School of Medicine for Women; Herbert Bowly Gibbins, St. Bartholomew's Hospital; William Gilliatt, B.S. (University Medal), Middlesex Hospital; Anna Maude Seaton Smith, London (Royal Free Hospital) School of Medicine for Women; Thomas G. Starkey Smith, B.S., St. Thomas's Hospital; and Bessie Weldon Symington, B.S., Ruth Helen Western, B.S., and Sophia Margaret V. Witts, B.S., London (Royal Free Hospital) School of Medicine for Women.

*Branch V., State Medicine.*—Lilian Ethel Wilson, B.S., London (Royal Free Hospital) School of Medicine for Women.

*Branch VI., Tropical Medicine.*—Leonard Gilbert, B.S., St. Thomas's Hospital; Henry Crewe Keates, B.S., Guy's Hospital; John Preston Maxwell, B.S., St. Bartholomew's Hospital and London School of Tropical Medicine.

M.S. EXAMINATION.

*Pass-list.*—Frederick James Fitzmaurice Barrington, University College Hospital; Harry Blakeway, B.Sc., St. Bartholomew's Hospital; Edward Musgrave Woodman (University Medal), St. Bartholomew's Hospital.

FIRST EXAMINATION FOR MEDICAL DEGREES.

*Pass-list*—Reginald George Abrahams, University of Birmingham; Frank Macdonald Allchin, King's and Birkbeck Colleges; Kevin Doyle Atteridge, St. Bartholomew's Hospital; Christopher Percival Barber, Charing Cross Hospital; Kanshi Ram Betra, University College; Claude Wells W. Baxter, Plymouth Technical Schools; Eric Biddle, University College, Cardiff, and Guy's Hospital; Frank Chadwick, Victoria University of Manchester; Dorothy Chick, London (Royal Free Hospital) School of Medicine for Women; Llywelyn ap Ivan Davies, University College; Eric Gordon Dingley, St. Bartholomew's Hospital; John Ralph Dingley, University College; Geoffrey Barrow Dowling, Dulwich College and Guy's Hospital; *Langdon Percival L. Edwards, Whitgift Grammar School; Robert Hood Fleming, B.Sc., Middlesex Hospital; Ronald Kelson Ford, London Hospital; Annie Mary Forster, London (Royal Free Hospital) School of Medicine for Women; Gerald Francis Petvin Gibbons, Epsom College and St. Bartholomew's Hospital; Olaf Gleeson, private study; George Edwin Heath, Derby Technical College; †Geoffrey Oliver Hempson, University College; Dorothy Muriel Henty, London (Royal Free Hospital) School of Medicine for Women; Ernest Eugène Herga, London Hospital; Hugh Llewelyn Glyn Hughes, Epsom College and University College; John Powell Jones Jenkins and Rhys Bevan John, University College, Cardiff; Louis Gaston Le Blanc, St. Bartholomew's Hospital; Adeline Mabel Matland, London (Royal Free Hospital) School of Medicine for Women; Allan Hawkins Morley, London Hospital; Hugh Roger Partridge, University of Leeds; Leonard George Phillips, Middlesex Hospital; Emma Christine Pillman, London (Royal Free Hospital) School of Medicine for Women; William Kenneth A. Richards, University of Bristol; Ralph Leslie Robinson, University College; Trevor Cecil Russell, St. Mary's Hospital; Lionel Frederick Strugnell, St. Bartholomew's Hospital; Rufus Clifford Thomas and William Henry Thomas, University College, Cardiff; *William Leslie Thomas, Swansea Technical College; and Henry Wardel Snarey Wright, University College.

* Awarded a mark of distinction in Physics.

† Awarded a mark of distinction in General Biology.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

LONDON SCHOOL OF TROPICAL MEDICINE.—The result of the examination at the thirty-fourth session of this school (October–December, 1910), showed that the following passed:—

K. B. Allan, M.B., B.S. Durh., Colonial Service; *W. M. Anderson, Captain, I.M.S., M.D., B.S. Lond.; H. G. Barrie, M.D., C.M.; *F.V.O. Beit, Captain, I.M.S., M.B.Lond.; L. H. Booth, M.R.C.S., L.R.C.P., Colonial Service; *R. St. John Brookes, M.B., B.Ch. Dub., D.P.H. Dub.; Miss N. G. Cotton, M.B., B.S. Lond.; *J. Donnelly, M.B. Irel., Colonial Service; *L. E. Gilbert, Captain, I.M.S., M.B, B.S. Lond.; Miss I. Kahn, M.D. Michigan; *H. C. Keates, Captain, I.M.S, M.B., B.S. Lond.; *C. A. Lane, Major, I.M.S., M.D. Lond.; *J. H. Murray, Captain, I.M.S., M.B, M.R.C.S., L.R.C.P., D.P.H.; G. Rollason, L.M.S.S.A., Colonial Service; R. S. Roper, F.R.C.S. Edin., M.R.C.S., L.R.C.P.; W. A. Ryan, L.R.C.P., L.R.C.S. Irel., Colonial Service; A. J. Smith, M.B. Birm., Colonial Service; C. S. Thompson, M.B., B.S. Durh., Colonial Service; J. F. W. Ward, L.R.C.P. & S. Edin., Colonial Service; *W. G. Watt, M.B., Ch.B. Aberd., Colonial Service; *H. G. Stiles Webb, Captain, I.M.S., L.R.C.P., M.R.C.S., D.P.H.; and F. T. Wills, M.B., C.M. Edin.

* Passed with distinction.

UNIVERSITY OF CAMBRIDGE.—At examinations for Medical and Surgical degrees, held in Michaelmas term, 1910, the following candidates were successful:—

FIRST EXAMINATION (*October, 1910*).

*Part I., Chemistry*.—K. H. Ashby, Emmanuel; A. O. Courtis, Pembroke; E. Forrester-Paton, King's; H. K. Graham-Hodgson, Clare; W. Hillbrook, Emmanuel; P. D. Pank, Caius; S. R. Prall, Emmanuel; H. E. Rhodes, King's; T. Schäfer and J. G. T. Thomas, Caius; F. H. Vey, B.A., Clare; and F. H. Young, Trinity.

*Part II., Physics*.—K. H. Ashby, Emmanuel; F. M. Davis, Caius; E. Forrester-Paton, King's; H. K. Graham-Hodgson, Clare; E. H. V. Hensley, King's; W. Lambert, Corpus Christi; H. W. Leatham, Trinity; F. G. Lewtas, Caius; C. R. Mackenzie, Trinity; T. D. Morgan, Jesus; P. D. Pank, Caius; S. R. Prall, Emmanuel; H. E. Rhodes, King's; T. Schäfer, Caius; F. H. Vey, B.A., Clare; and F. H. Young, Trinity.

*Part III., Elementary Biology*.—J. G. Davies, Emmanuel; F. M. Davis, Caius; E. Forrester-Paton, King's; W. Hillbrook, Emmanuel; C. E. Kindersley, Magdalene; H. W. Leatham, Trinity; T. D. Morgan, Jesus; S. R. Prall, Emmanuel; and T. Schäfer, Caius.

FIRST EXAMINATION (*December, 1910*).

*Part I., Chemistry*.—G. F. V. Anson, Trinity; J. V. Bates, Pembroke; J. T. Bleasdell, H. Selwyn; E. L. Caldwell-Smith and H. Chadwick, Trinity; J. G. Davies, Emmanuel; J. R. Earp, St. John's; J. D. Gabb, Caius; S. G. Galstaun, Trinity; C. Gardiner-Hill and E. O. Goldsmith, Pembroke; J. R. Harris, Queens'; E. H. V. Hensley, King's; L. W. Jones, Emmanuel; H. W. Leatham, Trinity; T. R. M. Livesey, King's; F. McCormick, Magdalene; G. L. Mau'e, Christ's; E. O. Morrison, Caius; P. R. O'R. Phillips, Pembroke; R. L. M. Wallis, B.A., Downing; and Franklin G. Wood, Jesus.

*Part II., Physics*.—G. F. V. Anson, Trinity; J. V. Bates, Pembroke; R. C. Bentley, Queens'; J. T. Bleasdell, H. Selwyn; E. L. Caldwell-Smith and H. Chadwick, Trinity; H. Chell, St. John's; E. H. Dendy, Caius; J. R. Earp, St. John's; J. S. Ellis, Trinity; H. J. Ewart, King's; S. G. Galstaun, Trinity; C. Gardiner-Hill, Pembroke; J. R. Harris, Queens'; W. Hillbrook and L. W. Jones, Emmanuel; M. E. MacGregor, Trinity; E. O. Morrison, Caius; P. R. O'R. Phillips, Pembroke; R. M. Savur, non-collegiate; J. A. D. Skinner and J. G. T. Thomas, Caius; R. L. M. Wallis, B.A., Downing; A. G. P. Wills, Corpus Christi; and Franklin G. Wood, Jesus.

*Part III., Elementary Biology*.—J. V. Bates, Pembroke; J. J. O. Beven, Christ's; E. L. Caldwell-Smith, Trinity; H. K. Graham-Hodgson, Clare; F. G. Lewtas, Caius; T. R. M. Livesey, King's; C. R. Mackenzie, Trinity; H. E. Rhodes, King's; R. M. Savur, non-collegiate; F. H. Vey, B.A., Clare; R. L. M. Wallis, Downing; and U. G. Williams, Caius.

SECOND EXAMINATION (*October, 1910*).

*Part II., Pharmacology and Pathology*.—K. B. Aikman, B.A., Clare; D. C. G. Ballingall, B.A., Emmanuel; R. St. L. Brockman, B.A., Caius; E. N. Butler, B.A., Clare; G. d'R. Carr and G. M. Chapman, Caius, J. Deighton, B.A., Trinity; G. D. East, B.A., Emmanuel; A. T. Edwards, St. John's; H. H. M. Gould, Clare; J. L. Green, B.A., Downing; A. N. Hooper, B.A., Emmanuel; G. D. Jameson, B.A., Pembroke; A. R. Jennings, B.A., Jesus; A. R. MacMullen, B.A., Caius; H. Y. Mansfield, B.A., Emmanuel; F. D. Marsh, B.A., Trinity; E. G. Martin, Trinity Hall; J. A. Martin, B.A., and V. C. Pennell, Pembroke; S. G. Platts, B.A., Caius; Ff. Roberts, B.A., Clare; D. N. Seth-Smith, B.A., Emmanuel; T. H. G. Shore, B.A., and A. V. Stocks, B.A., St. John's; P. Stocks, King's; W. J. F. Symons, B.A., Sidney Sussex; H. F. W. Warden, B.A., Pembroke; and E. Wordley, B.A., Emmanuel.

SECOND EXAMINATION (*December, 1910*).

*Human Anatomy and Physiology*.—E. D. Adrian, Trinity; C. S. Atkin, B.A., and L. W. Barlow, B.A., Caius; H. A. Bell, B.A., Jesus; P. H. Berry, B.A., King's; M. W. K. Bird, Emmanuel; P. R. Boswell, Queen's; E. J. Boyd, B.A., Sidney Sussex; E. C. Bradford, Pembroke; E. J. Bradley, Jesus; E. H. P. Brunton, B.A., Trinity; F. L. Cassidi, B.A., Corpus Christi; W. H. W. Cheyne, B.A., and B. K. T. Collins, B.A., Trinity; G. D. Compston, Trinity Hall; L. P. Costobadie, Caius; G. M. Cowper, Trinity; H. E. Creswell, B.A., Caius; H. L. Cronk, Jesus; J. Ll. Davies, Emmanuel; H. P. Dawson, B.A., and H. V. Deakin, B.A., Trinity; J. M. Evatt, Caius; G. C. Fairchild, B.A., Sidney Sussex; W. D. Galloway, B.A., Clare; C. L. Gimblett, Caius; W. B. Gordon, Clare; A. Griffith-Williams, Trinity; H. Hartridge, B.A., King's; A. D. Haydon, B.A., Caius; R. J. Hearn, Jesus; T. J. H. Hoskin and A. M. Humphry, Trinity; B. L. Hutchence, Caius; J. S. Kennedy, B.A., King's; S. D. Kilner, Emmanuel; G. C. King, B.A., Caius; C. L. Lambrinudi, B.A., Christ's; A. A. Lees, Emmanuel; W. M. Lupton, B.A., Clare; T. W. Maunsell, Caius; E. S. Mawe, King's; C. F. Mayne, B.A., Caius; R. K. Merson, Emmanuel; A. E. Panter, B.A., Clare; F. S. L. Piggott, Emmanuel; H. A. Richards, B.A., Clare; E. L. K. Sargent, B.A., St. John's; C. J. Scholtz, B.A., Emmanuel; J. E. Sharp, B.A., and L. W. Shalley, Caius; W. H. Shephard, Christ's; R. P. A. Starkie, Trinity; M. T. W. Steedman, B.A., Clare; C. R. A. Thacker, Downing; A. G. G. Thompson, Pembroke; E. W. Todd, Trinity; A. W. Uloth, Pembroke; D. C. L. Vey, Clare; P. Wallice, King's; C. A. Weller, B.A., Clare; F. A. Williamson, Queen's; and K. J. Yeo, B.A., Emmanuel.

THIRD EXAMINATION (*December, 1910*).

*Part I., Pharmacology and General Pathology*.—A. H. Birks, Caius; T. R. H. Blake, B.A., Pembroke; L. Bromley, B.A., and H. H. Brown, B.A., Caius; J. D. Clarke, B.A., Sidney Sussex; S. S. Crosse, B.A., Pembroke; J. P. H. Davies, B.A., Jesus; A. J. S. Fuller, B.A., Emmanuel; H. D. Gillies, B.A., Caius; P. Hamill, M.A., Trinity; E. C. Hardwicke, B.A., Corpus Christi; T. L. Hardy, B.A., H. Selwyn; J. P. Hill, M.A., Caius; W. H. Hodgson, B.A., and R. S. Kennedy, B.A., Christ's; G. A. Lilly, Caius; W. M. Oakden, B.A., Peterhouse; W. A. Peacock, B.A., Pembroke; E. G. T. Poynder, Clare; K. Pretty, B.A., King's; E. C. Rayner, B.A., Caius; J. F. Taylor, B.A., H. Selwyn; J. R. A. Todhunter, B.A., J. W. Tonks, B.A., R. J. Vernon, B.A., and C. B. Wainwright, B.A., Caius; H. K. Walker, Trinity; L. C. Walker, B.A., Christ's; and C. Warner, B.A., Pembroke.

*Part II., Surgery, Midwifery, and Medicine*.—The following have now satisfied the examiners in all three sections: H. W. Barber, B.A., Clare; H. G. Baynes, B.A., Trinity; C. C. H. Binns, B.A., Caius; A. S. Cane, B.A., King's; J. R. Dick, B.A., Downing; A. Feiling, B.A., Pembroke; R. Fisher, B.A., Sidney Sussex; A. J. S. Fuller, B.A., Emmanuel; H. D. Gillies, B.A., Caius; H. G. Greaves, B.A., Emmanuel; P. Hamill, M.A., Trinity; T. W. S. Hills, B.A., Downing; T. H. Just, B.A., Trinity; N. Mutch, B.A., Emmanuel; R. L. Rawlinson, B.A., Trinity; A. E. Rayner, B.A., Caius; H. B. Richmond, B.A., King's; J. B. Ronaldson, B.A., St. John's; F. D. Saner, B.A., Christ's; K. I. Singh, B.A., Pembroke; R. M. Soames, B.A., and C. J. Stocker, B.A., Trinity; R. M. R. Thursfield, B.A., H. Selwyn; W. W. C. Topley, B.A., St. John's; J. Van Schalkwijk, B.A., Caius; J. M. Weddell, B.A., Christ's; P. F. Wilson, B.A., Caius; and W. B. Wood, M.A., Jesus.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. B. Heymann of Breslau has been recognised as *privat docent* of Hygiene.—*Breslau:* Dr. R. F. Fuchs of Erlangen has been recognised as *privat-docent* of Physiology.—*Göttingen:* Dr. Albert Fromme has been recognised as *privat-docent* of Surgery.—*Gratz:* Dr. Alois Materna has been recognised as *privat-docent* of Pathological Anatomy.—*Heidelberg:* Dr. Ernst Kürz has been recognised as *privat-docent* of Forensic Medicine.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.—At the prize distribution by the Right Hon. Lord Ilkeston on Dec. 15th last the subject of the relations between hospitals and their attached medical schools was the theme of several of the speeches. Sir John Wolfe-Barry did not think that the benefits of such an alliance were so much appreciated as they should be by the world at large, yet these advantages were both great and mutual. The recommendation of Sir Edward Fry's committee, that no money should be diverted from the individual relief of the sick poor for educational purposes, had prevented the governors of the hospital from coming to any great extent to the assistance of the school, but he looked to the help promised by the Board of Education. The Dean, Mr. E. Rock Carling, also referred to this subject in his report, saying that the conditions which had embarrassed the metropolitan medical schools of late years were still in operation, but they confidently expected some measure of relief from the labours of the Royal Commission on University Education in London, which was now sitting, and the recognition of the school by the Board of Education had also improved its position and status. Lord Ilkeston, also, in addressing the students at the close of the distribution of prizes, said that it was no inconsiderable advantage for the student to have his medical school attached to a hospital such as the Westminster, and the men he was addressing had the further advantage of being students in the school of medicine of London, which, in spite of its bad organisation, was perhaps the greatest school in the world owing to the large collection of clinical material that it offered for the study of medicine and surgery. In this school it was likely that changes would shortly take place, but he trusted that they would not take away from the hospital any of the instruction it at present gave so excellently in the art and science of medicine. The presence of students, he pointed out, raised the efficiency of a hospital and put their teachers through a valuable discipline. While he admitted that some hospitals in which there was no teaching had done excellent work, he was inclined to think that even these schools would have done still better had the work been carried out before the watchful eyes of a clinical class. If the connexion between medical schools and hospitals were removed the public would be injured most of all. A hospital did the public good in two ways: first, by relieving the applicant at its doors; and secondly, by benefiting the mass of the public who did not come into direct touch with the institution. In London with its dozen medical schools, the raising of the whole tone of medical practice, as the effect of the combination of hospital work with medical education, was prone to be overlooked; but in a provincial town the increased efficiency of the profession locally was very evident if a school were attached to the hospital. He hoped that as wise counsels prevailed in committees and conferences of governments, governments would see their way to bestow increasingly public grants on such institutions as the Westminster School of Medicine. Sir Robert Hudson, in proposing a vote of thanks to Lord Ilkeston, said that though he himself was merely a lay member of the hospital committee, he felt that under the conditions at present attaching to the application and disposal of hospital

funds, it behoved everyone concerned with hospitals to look squarely in the face this question of the financial future of the medical schools, which were engaged in supplying to the community a form of higher education, the gain of which was common to the hospital, the students, and the public at large. Sir William Allchin said that among the many reasons which tended to make the London School of Medicine great there was the important, though, perhaps, not very obvious, one that there was in London not only a wealth of clinical material such as that offered by no other city in the world, but also an active sympathy between those who managed the hospitals, on the one hand, and the students and those who taught on the other. Dr. F. de Havilland Hall, in seconding a vote of thanks to the chairman, said that his 35 years' intimate association with hospitals had taught him the inestimable value of having students in the wards. Indeed, he wondered how he would have got through his work without the stimulus of the student.

KING EDWARD'S HOSPITAL FUND.—The honorary secretaries of King Edward's Hospital Fund for London have received from the League of Mercy its contribution for the year 1910 of £18,000.

THE Nottingham Mothers' and Babies' Welcome will be the beneficiary of a grand matinée performance to be given at the Theatre Royal, Nottingham, through the generosity of Mr. Robert Arthur, on Thursday, Jan. 26th, at 2 P.M., when Mr. R. C. Carton's drama, *Liberty Hall*, will be produced.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.—Lectures free to all medical practitioners are held on Thursday afternoons at 4 o'clock. On Jan. 12th Mr. E. M. Corner will lecture on the Functions and Diseases of the Vermiform Appendix, and on Jan. 19th Dr. J. H. Thursfield will lecture on Purpura. In addition to these lectures each Thursday special post-graduate courses are held, for which fees are charged.

THE fifth annual dinner of the past and present students of the Royal London Ophthalmic Hospital will take place at the Imperial Restaurant, Regent-street, W., on Wednesday, Feb. 8th, at 7.45 P.M. Mr. Priestley Smith will preside. Each student is entitled to introduce two guests. Tickets (price 10*s.* 6*d.* each, exclusive of wine) may be had on application to either of the honorary secretaries, Mr. Arnold Lawson, 12, Harley-street, London, W., and Mr. J. Herbert Parsons, 54, Queen Anne-street, London, W.

THIRTY-SECOND BALNEOLOGICAL CONGRESS, BERLIN.—We announced this Congress in THE LANCET of Dec. 3rd, 1910, p. 1638. It will take place in Berlin from March 2nd to 6th, 1911. The President will be Geh. Med.-Rat Prof. Brieger. Forty-five papers have been accepted for submission to the Congress. Interesting references to radium are expected to be made, and Professor Marckwald of Berlin will deal with Radium from the Physico-Chemical Standpoint, and Professor Kionka of Jena will deal with Radium from the Biological Standpoint.

SOCIETY FOR THE STUDY OF INEBRIETY.—This society will hold its next meeting on Tuesday, Jan. 10th, at 4 P.M., in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W. The President of the society, Dr. Theodore B. Hyslop, will open a discussion on "The Influence of Parental Alcoholism on the Physique and Ability of Offspring." Each member and associate of the society is at liberty to introduce a visitor. The minimum annual subscription to the society is a nominal one of 5*s.* The honorary treasurer is Dr. G. Basil Price, 42, Welbeck-street, Cavendish-square, London, W., and the honorary secretary is Dr. T. N. Kelynack, 139, Harley-street, London, W.

## BOOKS, ETC., RECEIVED.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.
The Diseases of China, including Formosa and Korea. By W. Hamilton Jefferys, A.M., M.D., Univ. of Pennsylvania, Medical Missionary in China; Professor of Surgery, St. John's University; Surgeon to St. Luke's Hospital, Shanghai; Editor, *China Medical Journal*, and James L. Maxwell, M.D. Lond., Medical Missionary in Formosa; Chairman, China Medical Missionary Association Research Committee. Price 25*s.* net.
Lectures on Biology. By Dr. Curt Thesing. Translated from the Second Edition by W. R. Boelter. With the original Coloured and other Illustrations. Price 10*s.* 6*d.* net.

CHATTO AND WINDUS, London.
Herbert Fry's Royal Guide to the London Charities. Edited by John Lane. New and revised Edition—the forty-seventh. Price 1*s.* 6*d.*

CONSTABLE AND CO., LIMITED, London.
From Hausaland to Egypt, Through the Sudan. By H. Karl W. Kumm, Ph.D., Author of "Tribes of the Nile Valley"; "The Political Economy of Nubia," "The Sudan." Price 16*s.* net.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.
University of London. Francis Galton Laboratory for National Eugenics. Eugenics Laboratory Memoirs. X. A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring. By Ethel M. Elderton, Galton Research Scholar in National Eugenics in the University of London, with the Assistance of Karl Pearson, F.R.S. Second edition. Price 4*s.*
Eugenics Laboratory Memoirs. XIII. A Second Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring. Being a Reply to Certain Medical Critics of the First Memoir and an Examination of the Rebutting Evidence cited by Them. By Karl Pearson, F.R.S., and Ethel E. Elderton, Galton Research Scholar. Price 4*s.*
Eugenics Laboratory Memoirs. XIV. A Preliminary Study of Extreme Alcoholism in Adults. By Amy Barrington and Karl Pearson, F.R.S., with the Assistance of David Heron, D.Sc. Price 4*s.*

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.
The Racial Anatomy of the Philippine Islanders, introducing New Methods of Anthropology. By Robert Bennett Bean, B.S., M.D., Associate Professor of Anatomy, the Tulane University of Louisiana, New Orleans, La. Price not stated.

MACMILLAN COMPANY, THE, New York.
The Citizen's Library. Child Problems. By George B. Mangold, Ph.D., Associate Director, Saint Louis School of Social Economy. Price 5*s.* net.

MARSHALL BROTHERS, LIMITED, London and Edinburgh. (THE MISSION TO LEPERS, Edinburgh (28, North-bridge); Dublin (Rogaland, Cowper-road); and London (33, Henrietta-street, Strand, W.C.))
Lepers: Thirty-six Years' Work among Them. Being the History of the Mission to Lepers in India and the East, 1874–1910. By John Jackson, F.R.G.S., author of "Mary Reed," "In Leper Land," &c. With a Short Introduction by the Dowager Marchioness Dufferin and Ava. New and revised edition. Price not stated.

PHARMACEUTICAL PRESS, THE, 72, Great Russell-street, London, W.C.
The Chemist's Annual and P.J.F. The Pharmacist's Diary and Year-book, 1911. Edited by John Humphrey. Price 5*s.* net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.
The Practice of Surgery. By James Gregory Mumford, M.D. Price 30*s.* net.

STANFORD, EDWARD, London.
Nigeria and its Tin Fields. By Albert F. Calvert. Price 3*s.* 6*d.*

THACKER, SPINK, AND CO., Calcutta.
The Treatment of Cataract. By Lt.-Colonel Henry Smith, B.A., M.D., M.Ch., Indian Medical Service. With Appendix by Captain A. E. J. Lister, M.B., B.S., F.R.C.S., Indian Medical Service. Illustrations by Dr. Derrick T. Vail, Professor of Ophthalmology, University of Cincinnati, &c. Price not stated.

UNIVERSITY PRESS, Cambridge.
The Cure of Surra in Horses by the Administration of Arsenic. By J. D. E. Holmes, M.A., D.Sc., Imperial Bacteriologist to the Government of India. (From "Parasitology," Vol. III., No. 3, October 22, 1910). Price not stated.

WARD AND CO., 34, Craven-street, Charing Cross, London, W.C.
Photography in Colours. A Text-book for Amateurs. With a Chapter on Kinematography in the Colours of Nature. By George Lindsay Johnson, M.A., M.D., B.S., F.R.C.S. Price 3*s.* 6*d.* net.

WHITAKER, J., AND SONS, LIMITED, London.
An Almanack. For the Year of Our Lord, 1911. By Joseph Whitaker, F.S.A. (Whitaker's Almanack.) Price 2*s.* 6*d.*
Whitaker's Peerage, Baronetage, Knightage, and Companionage for the Year 1911. Price not stated.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, LIMITED, London.)
A Text-book of Organic Chemistry. By A. F. Holleman, Ph.D., F.R.A. Amst. Edited by A. Jamieson Walker, Ph.D. (Heidelberg), B.A., assisted by Owen E. Mott, Ph. (Heidelberg), with the Coöperation of the Author. Third English Edition, partly rewritten. First Thousand. Price, cloth, $2.50.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.
An Introduction to Surgery. By Rutherford Morison, M.A., M.B., F.R.C.S. Edin. and Eng. Price 8*s.* 6*d.* net; interleaved, 9*s.* 6*d.* net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ATKINSON, R. A. H., M.B., Ch.B. Vict., has been appointed Anæsthetist to the Manchester Royal Infirmary.

BARCLAY, A. E., M.B., B.C. Cantab., has been appointed Medical Officer for the Radiography and Electricity Department at the Manchester Royal Infirmary.

BEESLEY, CLARENCE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. Camb., has been reappointed Medical Officer of Health by the Budleigh Salterton (Devon) Urban District Council.

BURTON, ALFRED WILLIAM, M.B., Ch.B. Edin., has been appointed House Surgeon at the Bristol General Hospital.

CLARKE, RICHARD CHRISTOPHER, L.R.C.P. Lond., M.R.C.S., has been appointed Casualty Officer at the Bristol Royal Infirmary.

COOGAN, T., M.B., Ch.B. Vict., has been appointed Anæsthetist to the Manchester Royal Infirmary.

DAVIES, TREVOR BERWYN, M.B., B.S., B.Sc. Lond., has been appointed House Surgeon at University College Hospital.

FLOOD, RICHARD, M.B., B.S. R.U.I., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the County of Down.

HOWARTH, WALTER G., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Surgical Registrar at the Throat Hospital, Golden-square, W.

JACKSON, S. B., M.D., B.S. Durh., D.P.H., has been appointed School Medical Officer to the Gillingham Education Committee.

KING, D. BARTY, M.D. Edin., M.R.C.P. Edin., has been appointed Assistant Physician to the Royal Hospital for Diseases of the Chest, E.C.

LOVEDAY, G. E., M.B., B.C. Cantab., has been appointed Director of the Clinical Laboratory at the Manchester Royal Infirmary.

LYLE, H. WILLOUGHBY, M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon at King's College Hospital.

MACKENZIE, JAMES, M.D. Edin., has been appointed Lecturer on Cardiac Research at the London Hospital Medical College.

MITCHELL, J., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Brigg District of the county of Lincoln.

MOORE, H. E., M.B., B.S. Manch., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Stourport District of the county of Worcester.

MYERS-WARD, C. F., M.R.C.S., L.R.C.P. Lond., has been appointed Dean of Charing Cross Hospital Medical School.

PIPER, F. P., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Whitstable District of the county of Kent.

REARDEN, JAMES P., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer, Divisional Officer, Public Vaccinator, and Medical Officer for the Bute Hospital.

SANKEY, WILLIAM OCTAVIUS, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator for the Ashburton District by the Newton Abbot (Devon) Board of Guardians.

SELLARS, JOHN CHRISTOPHER, L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Medical Referee under the Workmen's Compensation Act, 1906, for the County of Louth.

TUDEHOPE, CLAUDE BARTLEY, M.B., Ch.B. Edin., has been appointed Assistant House Physician at the Bristol General Hospital.

VEALE, PHILIP JOHN, M.B., B.S. Lond., has been appointed Casualty House Surgeon at the Bristol General Hospital.

WILLIAMS, E. V., M.B., Ch.B. Edin., has been appointed House Surgeon to the Swansea Hospital.

WILSON, S. R., M.B., B.S. Lond., F.R.C.S. Edin., has been appointed Anæsthetist to the Manchester Royal Infirmary.

WORTH, F. J., M.D., B.S. Durh., has been appointed Workhouse Medical Officer and Medical Officer for No. 4 District by the Basingstoke Board of Guardians.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ADDENBROOKE'S HOSPITAL, Cambridge.—House Surgeon. Also Second House Surgeon. Salary in each case £80 per annum, with board, residence, and laundry.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon. Salary £100 each per annum. Also One Obstetric and Ophthalmic House Surgeon, and One Throat, Nose, and Ear House Surgeon. Salary £75 each per annum. Also Casualty Officer for six months. Salary £50 per annum. Apartments, board, and laundry are provided. Also Honorary Dental Anæsthetist. Also Honorary Medical Registrar.

CARDIGANSHIRE COUNTY COUNCIL.—Medical Officer. Salary £450 per annum.

CENTRAL FOUNDATION SCHOOLS OF LONDON, Spital-square, E.—Medical Officer (female) for Girls' School. Salary £50 per annum.

CITY OF LEEDS INFECTIOUS DISEASES HOSPITALS AND SANATORIUM.—Two Medical Assistants, unmarried, for six months and three months respectively. Salary at rate of £110 a year, with board, lodging, and washing.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, lodging, and washing.

CLINICAL RESEARCH ASSOCIATION.—Assistant Director. Salary £250 per annum.

EARLSWOOD ASYLUM, Redhill.—Junior Assistant Medical Officer, unmarried. Salary £130, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, laundry, &c.

EAST SUSSEX COUNTY COUNCIL.—Assistant School Medical Officer. Salary £250 per annum.

GLASGOW PARISH COUNCIL, EASTERN DISTRICT HOSPITAL.—Resident Assistant Medical Officer. Salary £100 per annum, with board and lodging.

GLOUCESTER, BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary £160 per annum, with board, &c.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator. Salary £110 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence. Also Fourth Anæsthetist. Salary £15 15s. per annum.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging.

JERUSALEM, BRITISH OPHTHALMIC HOSPITAL.—Chief Surgeon. Salary £500.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

LINCOLN CITY EDUCATION COMMITTEE.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £250 per annum.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LONDON HOSPITAL, WHITECHAPEL, E.—Medical Registrarship. Salary £100 per annum.

LONDON TEMPERANCE HOSPITAL.—Medical Registrar. Salary at rate of 40 guineas per annum.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary £120 per annum, with board and residence.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Honorary Anæsthetist.

NEW HOSPITAL FOR WOMEN, Euston-road.—Three Clinical Assistants (female).

NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £250 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, washing, &c.

NORTH SHIELDS, TYNEMOUTH VICTORIA JUBILEE INFIRMARY, Spring Gardens.—House Surgeon. Salary £100 per annum, with rooms, board, &c.

OCHILTREE PARISH COUNCIL, Ayrshire.—Medical Officer. Salary £25 per annum.

OLDHAM UNION WORKHOUSE.—Resident Medical Officer. Salary £130 per annum, with apartments, washing, and attendance.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Resident Junior Obstetric Physician (female).

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Surgeon.

ST. JOHN'S WOOD AND PORTLAND TOWN DISPENSARY, 96, St. John's Wood-terrace, N.W.—Third Medical Officer. Salary, midwifery and vaccination fees and a third proportionate share of an honorarium of £150.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence and attendance.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistant.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum, with board and residence.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

STOKE-ON-TRENT, NORTH STAFFS. INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Kinghorn, in the county of Fife; at Crediton, in the county of Devon, and at Sheffield (Hillsborough), in the county of Yorks, West Riding.

THE Secretary of State for the Home Department gives notice of a vacancy as Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 55, more particularly to Lymington County Court.

# Births, Marriages, and Deaths.

## BIRTHS.

CLARE.—On Dec. 26th, 1910, at Highcross-street, Leicester, the wife of T. C. Clare, M.D., F.R.C.S., of a son.

CRAWFORD.—On Dec. 28th, 1910 at Orchard Lea, Swanley, Kent, the wife of J. Dawson Crawford, M.D., of a son.

HOWLETT.—On Dec. 24th, 1910, at Springfield-road, Kingston-on-Thames, the wife of Bernard Howlett, M.R.C.S., L.R.C.P., of a son.

LEWIS.—On Dec. 30th, 1910, at Weymouth-street, W., the wife of Ernest E. Lewis, M.D., of a daughter.

POWELL.—On Dec 25th, 1910, at East Liss, Hants, the wife of Edgar Powell, Major, R.A.M.C., of a daughter.

RUSTON-HARRISON.—At Hill Cottage, Exmouth, on Dec. 26th, 1910, the wife of G. H. Ruston-Harrison, M.B., C.M., of a daughter.

SCOTT.—At "Tregenna," Staines, on Dec. 30th, 1910, the wife of Captain Norman Scott, I.M.S., of a son.

SIMPSON.—On Dec. 31st, 1910, at Coldharbour-lane, S.E., the wife of Patrick G. Simpson, M.B., C.M., of a son.

PEARSON.—On Jan. 1st, at Manor-place, Edinburgh, the wife of Charles Mowbray Pearson, M.B., F.R.C.P.E., of a daughter.

## DEATHS.

CLOETE-SMITH.—On Dec. 28th, 1910, at Westbourne-street, Hyde Park Edward Arnold Cloëte-Smith, M.R.C.S., L.R.C.P.

LIPSCOMB.—On Dec. 28th, 1910, in London, Edgar Richard Senhouse Lipscomb, L.R.C.P., M.R.C.S., aged 51 years.

SMITH.—On Nov. 29th, 1910, at Geelong, Victoria, Australia, Stephen Maberly Smith, M.R.C.S. Eng., L.R.C.P., L.M. Dub., aged 56 years.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE NOMENCLATURE OF THE SUPRARENAL PRINCIPLE.

WE note that in the "Year Book of Pharmacy" for 1910, the word "adrenine" is adopted generically for the active principle of the medulla of the suprarenal gland. This word, we believe, was adopted by the committee which published the B.P. codex but was rejected by the General Medical Council. In certain cases it seems to us the adoption of the word adrenine may misrepresent facts, for the extract is sold under various names, and the merits of each may be (and are) widely different. In the number of the "Year Book of Pharmacy" referred to there is an abstract of an article which appeared in THE LANCET of Oct. 2nd, 1909. The abstract is headed "Adrenine as an Emergency Treatment in Cases of Non-Corrosive Poisoning"; whereas, the original article in THE LANCET related exclusively to adrenalin, and the observations in the case were based entirely upon the use of "adrenalin." This seems to us to be a case where the use of a generic term which has not received complete acceptation may do a well-known active and efficient preparation an injustice.

## MEDICINE HAT.

THE *Daily Express* correspondent has informed his paper from New York on Dec. 24th last that Mr. Rudyard Kipling has written a letter to the inhabitants of Medicine Hat, Canada, on being informed that the city contemplated changing its name. "So far as I can make out," he writes, "the chief arguments for the change are that some United States journalists have some sort of joke that Medicine Hat supplies all the bad weather of the United States.' Medicine Hat is in the electoral district of Assiniboia West in the Province of Alberta, Canada. The United States is not without equally curious townships; for instance, it has two Medicines, Medicine Bow, Medicine Creek, Medicine Lodge, as well as a Medicine River, a Medical Lake, and a Medical Springs.

## SPARE MEDICAL JOURNALS.

*To the Editor of* THE LANCET.

SIR,—May I, on behalf of our doctors in the mission field, ask through your columns if the medical men and women of Great Britain who are in the habit of regularly getting medical journals, and who, after reading them, throw them aside, will kindly consider the needs of our medical missionaries in the foreign field? Any jou nals sent to Miss B. Gambier Parry, Bacton, Wokingham, Berks, will be very gratefully received and forwarded without delay to a missionary doctor.

I am, Sir, yours faithfully,

J. ANDERSON ROBERTSON,
Secretary, Medical Missions Department, S.P.G.

Westminster, Jan. 3rd, 1911.

## ROUND SHOULDERS.

ROUND shoulders are sometimes ascribed in boys to the common method of suspending the garments by braces. Although girls wear no braces, it is suggested that frequently their variously arranged waist-belts have the same evil drag on the shoulder tips as braces. In each case the trousers, drawers, or skirts are held up by buttons, the weight being imposed on the shoulders in the boy directly through his braces, and in the girl through the fact that her skirts are fastened to an under garment in itself dependent from her shoulders. In girls there is often added to the weight of their skirts an arrangement of elastic straps known as "stocking suspenders." These properly used are an admirable invention, but the result may be that the pull of these suspenders, added practically to all the weight of the child's clothing, is made to fall on the shoulder tips, and the shoulders being moveable may be influenced to a material and serious degree by a downward drag, the condition known as round shoulders being finally produced. We have had submitted for our inspection specimens of a new bodice-belt made by Mrs. Morison, of 26, South Molton-street, London, which render the use of braces in boys unnecessary and provide free play for the shoulders and chest of children of either sex. The bodice-belt is so constructed that whilst supporting the spine and lower abdomen it does not cause any strain on the chest and avoids any forward drag on the shoulder. Through its use the weight of the child's clothing is equally divided between the back of the shoulders, the spine, and the hips. The belt for the use of boys renders braces unnecessary, and is worn over the shirt, the chest and shoulders being left free by fastening the trousers through button-hole slips arranged in the garment for that purpose.

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*A. B. S.* (*L.M.S.S.A.*).—Our correspondent's proposal that a serum prepared from cases of cancer that have undergone spontaneous cure might be valuable in the treatment of malignant disease has such obvious difficulties in the way of adoption that it must be only in rare instances and in exceptional circumstances that such a remedy could become available.

*E. T.* (*L.R.C.P. Ed.*).—Any case of cerebral hæmorrhage with slowly-spreading paralysis is interesting clinically, but a record in the absence of a post-mortem examination and without a description of the locality and extent of bleeding is too fragmentary for publication.

*D. M.*—Studies in Heterogenesis, 1904; Nature and Origin of Living Matter, 1905; Evolution of Life, 1907; all by Dr. H. Charlton Bastian.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

## A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
April (Berlin).—German Surgical Congress. (Thirty-ninth Annual Meeting.)
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May–October Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Pa'ace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October(?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
" (Los Angeles, Cal.).—American Medical Association.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August 15th–21st (Dublin).—Royal Institute of Public Health.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
" (Genoa).—International Exhibition of Marine Hygiene.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
" 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 18th–24th (Turin).—Fourth National Congress of Hygiene.
" 24th–30th (Rome).—International Congress on Tuberculosis.
" 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Montreal).—Canadian Medical Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—
Spring (London).—Second Optical Convention.
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.

In 191b:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

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THE following journals and magazines have been received:—*Contemporary Review, Cornhill, Burlington Magazine, M.A.B.* (*Mainly About Books*) *Christmas Number, The Child, Paris Médical, Critic and Guide, Monthly Bulletin of the Illinois State Board of Health, Medical Missions, The North American Review, School Hygiene, The Quarterly Journal of Medicine, The Century Magazine, The Military Surgeon* (*Washington, D.C.*), *&c.*

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Jonathan Hutchinson, L. A. Dunn): at 5.30 P.M.

*Debate:*

On the Operative Treatment of Cancer of the Rectum. The following gentlemen will take part:—Mr. F. Wood Jones, Mr. F. Swinford Edwards, Mr. W. Harrison Cripps, Sir Frederick S. Eve, F.R.C.S., and Mr. H. F. Waterhouse.

The DEBATE will be continued on Wednesday, Jan. 18th, when the following gentlemen will take part:—Mr. A. Boyce Barrow, Mr. F. C. Wallis, Mr. P. Furnivall, and Mr. Lockhart Mummery.

Any other gentleman wishing to take part is requested to communicate with Mr. J. Hutchinson, 1, Park-crescent, W.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Albert Carless, James Galloway): at 8 P.M.

*Cases:*

Dr. J. D. Rolleston and Dr. N. S. MacNaughton: Familial Pigmentary Dermo-fibromatosis.

Dr. James Galloway: Congenital Heart Disease; Pulmonary Stenosis. And other cases.

*Communication:*

Dr. F. Parkes Weber and Dr. G. Dorner: A Case of Congenital Pulmonary Stenosis, with Special Consideration of the Nature of the Secondary and Blood Changes.

**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—8.30 P.M., Dr. J. Taylor: Some Ocular and Visual Conditions in Medical Cases.—Mr. P. Fleming: Some Cases of Medical Interest met with in Ophthalmic Work.

**SOCIETY FOR THE STUDY OF INEBRIETY, Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.**

TUESDAY.—4 P.M., Dr. T. B. Hyslop: The Influence of Parental Alcoholism on the Physique and Ability of Offspring (followed by a Discussion).

**HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.**

WEDNESDAY.—8.30 P.M., Mr. D'Arcy Power: Loose Cartilages and the Results of their Surgical Treatment.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—College opens.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. C. O. Hawthorne: Instrumental Methods in the Estimation of the Arterial Blood Pressure.

WEDNESDAY.—4 P.M., Mr. R. P. Rowlands: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. R. W. Allen: Vaccine Treatment in Pulmonary Phthisis.

THURSDAY.—4 P.M., Mr. E. Pritchard: Clinique (Medical). 5.15 P.M., Lecture:—Dr. S. E. Dore: The Present Position of the X Ray Treatment of Ringworm of the Scalp.

FRIDAY.—4 P.M., Mr. L. Paton: Clinique (Eye).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Etherington-Smith: Clinical (Lecture I.).

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Plague.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Morton: Carbon Dioxide.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery (Lecture I.).

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture: Sir Dyce Duckworth: The Significance of Albuminuria.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Tabes Dorsalis.

**HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.**

THURSDAY.—4 P.M., Lecture:—Mr. Corner: The Functions and Diseases of the Vermiform Appendix.

**ANCOATS HOSPITAL, Manchester.**

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: Radiography of Diseases and Injuries of Bones and Joints.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (9th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY (10th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY (11th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY (12th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY (13th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY (14th).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

# MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

### VOLUMES AND CASES.

VOLUMES for the second half of the year 1910 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

## TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Jan. 4th, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Dec. 29 | 30·19 | S.W. | 0·03 | 55 | 48 | 33 | 42 | 42 | Overcast |
| ,, 30 | 30·27 | W. | ... | 50 | 46 | 39 | 39 | 40 | Fine |
| ,, 31 | 30 47 | W. | ... | 44 | 43 | 35 | 37 | 37 | Foggy |
| Jan. 1 | 30·14 | W. | ... | 51 | 47 | 37 | 38 | 39 | Cloudy |
| ,, 2 | 29·96 | N.W. | 0·05 | 49 | 40 | 34 | 33 | 36 | Cloudy |
| ,, 3 | 29 98 | N.E. | 0·25 | 50 | 41 | 34 | 37 | 37 | Snowing |
| ,, 4 | 30·13 | N.E. | 0·05 | 46 | 42 | 36 | 38 | 39 | Overcast |

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# An Address

ON

# THE INFLUENCE OF PARENTAL ALCOHOLISM ON THE PHYSIQUE AND ABILITY OF OFFSPRING.

*Delivered before the Society for the Study of Inebriety on Jan. 10th, 1911, in the Rooms of the Medical Society of London,*

BY THEO. B. HYSLOP, M.D., C.M. EDIN., F.R.S. EDIN.,

PRESIDENT OF THE SOCIETY; LECTURER ON MENTAL DISEASE AND MENTAL PHYSIOLOGY AT ST. MARY'S HOSPITAL MEDICAL SCHOOOL; LATE RESIDENT PHYSICIAN AT BETHLEM ROYAL HOSPITAL.

[AFTER some introductory remarks, in which Dr. Hyslop avowed the sympathy of the Society for the Study of Inebriety with the aims of the Eugenics Laboratory, he stated:—]

## THE PROBLEM.

I feel sure it is agreed that the problem we are met to discuss is not to be proved, or even advanced, by rhetoric, and, in my opinion, it is open to question whether it can be solved satisfactorily by statistics. *Does parental alcoholism—apart from parental degeneracy, which, together with a tendency to alcoholism, is heritable—influence the physique and ability of offspring?*

In order to answer this question we must, so far as is possible, first eliminate such sources of error as are due to the inclusion of side issues, indefiniteness of standards of alcoholism, health, and degeneracy, and we must correct our vague conceptions as to what really constitutes heredity. We ought also to equalise or exclude altogether such variations in environment as may possibly affect the germ-plasm of the parents or the offspring independent of the influence of alcohol itself. It is obvious, however, that it is well-nigh impossible to find a definite uniformity of phenomena on which to base statistics which shall be accurate in every particular. We cannot exclude all variations in environment, nor can we neglect the possibility of the intensification of degeneracy in successive generations due to a continuance of the same or different environmental defects.

In order the better to define our standards of parental degeneracy and alcoholism, it is important to note the sex, age at incidence, and evidences of inheritance, as well as the nature and degree of the defect. Needless to say, the environmental conditions should also be carefully noted. So far as the parental degeneracy and alcoholism are concerned, the Galton Laboratory researches have served the very useful purpose of bringing into prominence the *association*—in contradistinction to *causation*—of alcoholism and degeneration; but it must be confessed that the question as to which came first—the mental defect or the alcoholism—has not received such attention as is needed. As an asylum physician I am almost daily confronted with the difficulty of deciding as to which is cause and which is effect, and if, after full consideration of all the data available, it is well-nigh impossible to decide such an apparently elementary point, how much more difficult must it be to find sufficiently reliable data on which to base statistics! It is also to be noted that the tendency to degeneracy or alcoholism may be latent in the parent, and one or other of these defects may become manifest, owing to some accidental factor, either before or after the tendency has been transmitted to the offspring. This fact renders the question as to which came first—the alcoholism or the child—somewhat futile. At first I believed that parental alcoholism should invariably precede the birth of the child, but I have now come to see that such a stipulation would lead, not only to the suppression of half the truth, but even provide a source for error unless definite distinction were made between parental alcoholism *per se* and parental degeneration plus a psycho-neurotic tendency to alcoholism.

## ALCOHOLISM AT CONCEPTION.

The occurrence of conception at some festival season, when acute alcoholism is rife, has provided some investigators with data for consideration. The assertion that alcohol at festivals is the source of imbecility in offspring is as yet, however, unproven. Undoubtedly, there may be an increase in the number of conceptions on such occasions, but I am not aware of any statistics which take into account the relationship of the alcohol to degeneracy in the parent, and the possibility of any ill results to the offspring being due to direct heredity has not, so far as I am aware, been adequately considered. In this connexion it must be noted that we know but little of the influences, alcoholic or otherwise, which determine conception; and, moreover, the parents are apt to shelve their responsibilities in such matters, and attribute defects in their offspring to some accidental or even fanciful cause. Certain it is that many of the poorer classes attribute the largeness of their families to the abuse of alcohol and the consequent loss of control and other considerations.

The earlier researches of Laitinen,[1] to which reference is made by the same observer in his Norman Kerr lecture[2] and further contribution to the proceedings of the last International Congress on Alcoholism, have been very freely and exhaustively criticised by others. That he made no distinction between parents, one of whom drank, or both of whom drank, provides Professor Karl Pearson and Miss Elderton with matter for self-congratulation, in that they themselves distinguished between the father and mother, and arrived at the conclusion that the drinking of the mother had more influence than the drinking of the father, and that, slight as was the effect, since it influenced girls more than it influenced boys, it was unlikely to have been due to toxic action on the fœtus. That the latter observers carried their observations a few steps farther than did Professor Laitinen cannot be denied, but, needless to say, this fact does not in itself render their conclusions any the more valid. Laitinen's previous researches on the effects of small quantities of alcohol on animals, and the degeneration which he claimed to have found in their offspring would, if correct, appear to have more direct bearing on the subject, inasmuch as it is not probable that the offspring inherited a parental neurosis or psychosis to which the effects of alcohol had been added and transmitted as such to the offspring. For our purposes we must merely take note of Laitinen's statement that the number of young of those animals that received alcohol was somewhat larger, but much weaker, than in the case of the young of animals not treated with alcohol. The truth of this statement will doubtless be fully investigated, and upon its verification much must necessarily depend.

For a long time past I have in many instances attributed mental and physical defects to parental alcoholism, but I must now confess that, after careful consideration of the data so much discussed by the members of the Eugenics Laboratory—Sir Victor Horsley, Dr. Saleeby, Dr. Basil Price, Dr. Demme, Dr. Bezzola, Dr. Laitinen, Dr. MacNicholl, and many others—I have endeavoured to discard my previous conceptions, and I have sought diligently for an instance of defect which I could honestly convince myself as being due solely and entirely to parental alcoholism. Formerly I regarded epilepsy, some forms of insanity, mental enfeeblement and defective inhibition, deaf-mutism and stunted growth, as being mainly due to parental alcoholism. All these conditions, however, fall under the category of defects in what has been aptly termed the "general controlling determinant," and I have as the outcome of much clinical experience imagined I could diagnose parental alcoholism from the symptoms evidenced in the offspring. Now I feel that I cannot truly satisfy myself that in any one case there had not been also other factors than alcohol at work, and that the symptoms in the offspring might possibly have been due to the direct inheritance of a neuro-psychosis as well as alcohol.

It is obvious that instances of defective germ plasm in the stock—which may evidence itself by alcoholic tendencies throughout the stock—are instances of heredity pure and

[1] Lecture delivered at the Anti-Alcohol Congress in Stockholm, 1907.

[2] See British Journal of Inebriety, October, 1909; and "Contribution to the Study of the Influence of Alcohol on the Degeneration of Human Offspring" (Proceedings of Twelfth International Congress on Alcoholism, 1909).

simple, and they ought, for the satisfactory solution of the problem before us, to be rigidly excluded. Such a process of exclusion, however, might result in the elucidation of but half the truth, and, as we shall see presently, in order to obtain the whole truth, the question does really involve the consideration of the degenerate and the problems of heredity.

The Eugenics Laboratory Memoir, No. X., did not profess to deal with the direct heredity of alcoholism. It concerned itself only with the offspring of the alcoholic as children. Of the results that drinking produces in the offspring it is stated with a certain degree of truth that "alcoholism in the parent may, like insanity, be the somatic mark of a defective germ plasm in the stock. The child is defective not because the parent is alcoholic, but because it is the product, like the parent, of a defective germ plasm. The child may be physically and mentally fit, and yet, when adult, exhibit alcoholic tendencies."

This contention does not include, or even refer to, the almost accepted assumption that alcoholism in the normal, as in the degenerate, parent is apt to lead to earlier alcoholism or degeneracy in the offspring. At present my experience leads me to the belief that parental alcoholism accentuates the downward trend, and with each successive generation the period of exemption from alcoholism and degeneracy is shortened, so that the offspring become alcoholic or degenerate at a relatively earlier age.

Doubtless, however, this will form the subject for some future memoir, and possibly it may be ascertained whether parental alcoholism in the degenerate does or does not modify, diminish, or intensify the evidences of defective germ plasm in the stock—i.e., does parental alcoholism alter the character or degree of the inherited degeneracy in the offspring? It would seem to me that alcohol as a complementary factor to parental degeneracy does aid in the devolution of the stock, and it is upon families which are prone to degeneracy that alcohol appears to put the finishing touches and renders the physique and ability of the offspring more and more unsatisfactory with each successive generation.

Certain it is that nature does not permit any prolonged departure from its laws of health and the trend of evolution, as shown by the tendencies for neuroses and psychoses to spread and ultimately wear themselves out in the course of time and with successive generations. This law holds good so long as other complicating factors, such as alcohol, do not add to the burden, and by attacking the more or less attenuated neuroses or psychoses, keep them alight and thereby frustrate the efforts of nature to render them abortive. Alcohol, as we all know, will readily set alight and determine the existence of a neurosis or psychosis which might otherwise be on the wane; and not only does it affect the individual and intensify his degeneracy, but it is also open to belief that it renders the offspring more liable to suffer from the transmission of such degeneracy, not only in its parental intensity, but also to be manifested at an earlier age in the progeny.

In the last report from the Galton Laboratory claim is made that alcohol is, in its *pernicious* forms, consequent on, and not antecedent to, mental defect. This may be true, and if rightly understood and supplemented by an account of the influence of alcohol in intensifying an already existing nervous defect, it can do no harm to the cause of temperance. That it is the aim of the previous memoir to prove that alcohol may be taken with impunity no one with any sense of justice will contend; nor need it be imagined that alcohol is in any sense regarded as being capable of aiding the onward and upward trend of biological evolution. Referring as it does to pernicious forms of alcoholism, it is, of course, hardly likely to take cognisance of any statistics based upon the consumption of one glass of beer per day.

"One man's food, another man's poison," refers to alcohol as much as it does to any other article of consumption, and it is indeed difficult to differentiate the degrees of alcoholism. Another matter about which there has been much contention, yet which has not yet been referred to in its true bearings, is the fact that in asylum practice it is comparatively seldom that we find the various lesions so common to alcoholism in the sane. The reason for this may possibly be that alcohol selects for attack the least stable of the bodily systems in a given individual. The system may be, by its inherent weakness, more susceptible to attack, or it may be less able to eliminate from its substance the effects of toxic action. Whichever way we look at the question, however, it must be conceded that the pathological findings in the insane are in favour of the Galton theorists, and it is difficult to conceive any other explanation of the selective action of alcohol other than by the inherent weakness of the nervous system, as is found in inherited degeneracy.

It is impossible for me to deal with all the points at issue both with regard to parents and offspring and their environmental relations, so I conclude by stating that in my humble opinion it would serve our purpose best could we but find well-defined and accurate instances in which defect in the child could be proved to be due to parental alcoholism without the aid of any other causal factor, such as degeneration or faulty environment. Until this can be done, and until we can multiply such instances, any statistics we may compile can only help us to make hazardous half-guesses, which may lead to misinterpretation and the spreading of doctrines and lines of action which may be for the good or ill of the community.

## General Conclusions.

1. It is easy to make a tangle of a skein of silk, and nothing is easier than to employ destructive criticism to any theory which may be propounded in reference to the influence of parental alcoholism on the physique and ability of offspring.

2. The theory briefly stated is, Does parental alcoholism (of a pernicious kind)—apart from parental degeneracy, which, together with a tendency to alcoholism, is hereditable—influence the physique and ability of offspring?

3. It is practically impossible to exclude side-issues, variations in standards of health, alcoholism, and degeneracy from consideration, and we have as yet but imperfect conceptions as to what is meant by heredity. Hence we cannot obtain sufficiently accurate data for statistical purposes.

4. The *association*—in contra-distinction to *causation*—of alcoholism and degeneration in the parent is insufficiently understood, and the difficulty in distinguishing between cause and effect, both in the parent and offspring, is so great that the decision must be frequently mere guesswork.

5. The present problem requires that parental alcoholism shall precede conception or the birth of the child; whereas, in the transmission of a psychoneurosis by direct inheritance, the parental alcoholic tendency may be latent, and not come into evidence until after the birth of the child. This necessitates complete differentiation between the two series.

6. Alcoholism would appear to be responsible for a relatively greater number of births than would health or degeneracy without alcoholism, and there appears to be some evidence derived from experiments on animals treated by alcohol that their young, although in greater number, were much weaker.

7. Epilepsy, some forms of insanity, defective inhibition and mental enfeeblement, deaf-mutism and stunted growth, although instances of what has been aptly termed the "general controlling determinant," and transmitted by direct heredity, are apt to be not only intensified in the offspring, but they make their appearance at a relatively earlier age, when parental alcoholism has been an additional factor.

8. Parental alcoholism does appear to accentuate the downward trend of inherited psychoneurosis, and with each successive generation the period of exemption from alcoholism and degeneracy becomes shortened, so that the offspring become alcoholic or degenerate at relatively earlier ages. Alcohol would in this way act as a complementary factor to parental degeneracy, and aid in the devolution of the stock.

9. The inheritance of a psychoneurosis (which would tend to diminish in severity with each successive generation, and with the introduction of new correcting influences through marriage) becomes intensified and prolonged when alcoholism becomes a complicating factor. In this way the psychoneurosis is kept alight through a greater number of generations.

10. The conclusions arrived at by the Galton Laboratory School of Eugenics and their critics deal with part only of the general question at issue, and when further investigations shall have demonstrated the influence of parental alcoholism on parental degeneracy, and the combined influence on the physique and ability of offspring, we shall be better able to speak with authority for the guidance of the community.

# An Address
ON
# THE RÔLE OF SEPSIS AND OF ANTISEPSIS IN MEDICINE.

*Delivered at the Opening of the Session of the Faculty of Medicine of McGill University, Montreal, on Oct. 3rd, 1910,*[1]

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[AN introductory section of the address dealt with the objects of medical education.]

## MEDICAL SEPSIS AND MEDICAL ANTISEPSIS.

After these prefatory remarks regarding the objects of your present studies, I pass on to the subject which I have selected as the special theme on which I desire to address you to-day. That theme is the great part played by Septic Infection—prevalent, potent, easily observed and accessible to treatment, nevertheless continuously overlooked and neglected—as an important cause and complication of a whole range of medical diseases. I have selected it not only because of its great practical importance to you in your medical work in after life, but also because the story of its recognition as a great factor in causing disease illustrates in a striking way the truth of what I have just said about the importance of small things in medicine—their observation and interpretation.

For it was while seeking to throw light on the origin and meaning of a piece of blood pigment present in an organ in the first case I ever examined for curiosity's sake, that I stumbled upon the chief subject and interest of my life's work—namely that of anæmia. And it was while observing as fully as I could all the features of the first case of anæmia which I ever studied clinically that I came upon the curious facts that ultimately led me to recognise the importance of sepsis in medicine not only in producing anæmia, but also many other medical affections.

I spent some five years (1885–1890) in experimental and pathological work in trying to explain the meaning of that piece of pigment, and some ten years (1890–1900) in trying to explain the features presented by that one clinical case. And *then I saw*, but not till then—what I have since endeavoured to describe in various papers from 1900 onwards up to the present time regarding the rôle of sepsis in medicine and the importance of oral sepsis as its chief cause.

I desire now to draw your attention to the great province concerned with the action of septic infection in medicine as one deserving your attention as much as sepsis in the great domain of surgery. Like the great North-West Territories of your own land, this province of sepsis in medicine has been with us all the time, awaiting only a fitting recognition and exploitation of its great resources. It is, as yet, but sparsely populated; workers and settlers in it are but few, though they have been steadily drifting into it during the last ten years, first one by one and more recently by scores and hundreds; and already many of these have sent back encouraging and even glowing accounts of its resources. But the field is so large and the work in it is so great that its resources will not be fully exploited till the workers in it include the whole profession, prepared, if necessary, to identify themselves with it by taking the name of this great province of their work. For like many of your territories, it has remained until now without even a definite name. That name I propose now to give it, so that even if you pass it by and are not attracted by its prospects you will at least from henceforth know what portion of the great domain of medicine is meant by it.

Time was, and I am old enough to recall it, when the greatest honour that could be paid a surgeon was to term him a brilliant operator and to expatiate upon the rapidity with which he could carry out a particular operation. Time is, and long has been, when the title which a surgeon is proudest of is that of an "antiseptic surgeon." Possessing the knowledge, the training, and the experience that entitle him to that name, he knows that it is possible for him to become a successful surgeon; he is a worker in the field of "*antiseptic surgery*."

Time, in my opinion, has now come—or if not already come is fast approaching—when the title of "Antiseptic Physician" will become equally distinctive of a good doctor; when it will be equally honoured and honourable as that of "Antiseptic Surgeon" now in the case of the surgeon; when the knowledge and outlook which it implies in regard to the importance of sepsis in medicine will be deemed one of the highest qualifications which a good doctor could possess; when, in short, "Antiseptic Medicine"—the fight against sepsis in medicine—will come to have as distinct a meaning in relation to sepsis in medicine as "Antiseptic Surgery" has in relation to sepsis in surgery; when a knowledge of the principles and practice of "Antiseptic Medicine" will be deemed as essential and necessary to the physician as a knowledge of the principles and practice of antiseptic surgery is now essential to the surgeon. What these principles are it will be the purpose of this address to bring to your notice. They are deeply rooted in the knowledge and experience which it is the purpose of your present studies to give you.

## PRINCIPLES OF ANTISEPTIC SURGERY.

The word "principle" which I have here employed is in common use in medicine. We speak of the principles of surgery, of medicine, of treatment, of pathology. In the sense in which it is thus employed the word means the essentialness, essential part of, important part, quintessence, pith, backbone, marrow, heart, and soul of these subects. It includes not only the *facts*, but also some reference to the *reasoning*-grounds, way of thinking, reflection, conclusion, judgment, motive, springs of action that determine the action we take upon these facts.

If any of you, even the youngest, were asked by a layman what the "principles" of antiseptic surgery were he would probably not be able to give the whole facts and the whole chain of reasoning, observation, and experience on which the practice of antiseptic surgery is based. Even with the limited experience he possesses he would, if he were a wise student, be more likely to reply that the chief principle of antiseptic surgery is, of course, that organisms cause fever, inflammation, suppuration, &c., and hence the necessity for all the surgical precautions and the elaborate surgical ritual witnessed from day to day in the surgical work.

The motives and the grounds for antiseptic surgery are very clear and obvious, and are demonstrated daily in his surgical work. They are thrust upon his notice ever moment of his surgical life; they are driven into him by the whole teaching and surroundings of his surgical work. He lives in a very atmosphere of worship of Antisepsis; he conducts services at her shrine; he places offerings of clean hands and a pure antiseptic conscience and behaviour on her altars. Figuratively, if not actually, he sees in flaming characters written above the doors of her Holy of Holies—the operation theatre—the words—

"Abandon Sepsis all ye who enter here."

And even if this escapes his notice the janitor who guards the door is there to remind him:

"Put on thy shoes, for the place on which thou enterest is antiseptic ground."

Is this ritual connected with surgical antisepsis overdone? Are its surroundings too ornate—its practice too ceremonial, its services too elaborate, its vestments and mitres too striking? I think not, *if* the surgeon or doctor carries these antiseptic principles into practice wherever he meets with sepsis. On the contrary, they are educational to a degree. No shrine in connexion with modern scientific medicine and practice appeals more to the imagination than that constituted by a modern operating theatre. In no department of the whole field of modern medicine are its services to humanity so faithfully, so loyally, so scrupulously and exactly rendered as in that spot dedicated to antiseptic surgery.

What is the object of this whole elaborate ritual of observant practice? It is designed primarily for one great purpose—to prevent the access of organisms into the wounds which the surgeon has necessarily to make in the course of

[1] The delay in publication of the address has been due to the absence of the author in America and Canada for some time after its delivery.

his surgical work. To avoid such an occurrence—such a catastrophe, as he would deem it—the surgeon takes every possible precaution that knowledge and experience suggest to him. No precaution is too minute, no duty, however trivial, appears to him as such in the attainment of his great object. He renders these services, he observes these precautions as faithfully and as strictly in the case of the outcast admitted from the poorest slum as he would to the highest personage in the land.

In the early days of antiseptic surgery the ritual was different, for the principles underlying it were also different. It was at first sight thought that organisms of any kind might produce the untoward results which the surgeon feared; hence the first observances of antiseptic surgery—the use of spraying during the operation and the elaborate and repeated dressings necessitated during the subsequent healing of the wound.

It is now known that the organisms which the surgeon has most to fear are not those in the air, but those present (staphylococci and streptococci) on the patient's skin, or on his own fingers, or on the instruments which he employs. His procedure is therefore now directed primarily, not against the organisms of the air—although precautions against these are involved in the arrangements he makes for the ventilation of his operating theatre; nor yet primarily against the introduction of organisms from the walls and floors, although that source is also scrupulously kept in view in the plans he accepts for his floors and ceilings and walls, and in the ritual he observes in his work.

The full force of his precautions is directed against the introduction of septic organisms into his wound conveyed by his own fingers or those of his assistants, or by his instruments. If he has an untoward result where he confidently expected a successful one, if fever occurs or his wound suppurates without obvious cause, his suspicions, if he is a good surgeon, would probably fall first upon his own fingers, secondly upon those of his assistants, thirdly upon his instruments, and fourthly, or lastly, upon the air in the theatre. If he were a bad surgeon the order of suspicion would be reversed.

You will note that the whole procedure of the antiseptic surgeon is directed against the introduction of organisms into the body as the result of his own operation; or, at least against their conveyance from places where they are already present—e.g., the intestine—into cavities such as the peritoneum, where their effects might be serious or fatal. His responsibility, in short, so far as preventing the access of organisms into the body, begins and ends there. If they gain access through his wounds, through the failure of any precautions on his part, he is responsible, and no one feels this responsibility more than he does. If, however, the organisms are already in the body, as they frequently are in abscesses and suppurations connected with the bones, joints, stomach, intestines, liver, kidney, and other organs which he is called on to relieve by operation, he is only responsible for seeing that, so far as he can help, the organisms shall not be conveyed by his procedure into adjacent parts. He is not—he considers—responsible for their original access to the parts where they are causing trouble. That is a *medical* or *pathological* matter with which he is not primarily concerned, and with which he cannot deal. And yet unknown to him, and unnoted by him, he may be allowing his patient to retain a degree of sepsis (in the mouth) which would receive his immediate attention were it found anywhere else (e.g., Cases 1–6).

### SEPSIS IN MEDICINE.

I have dwelt on this point—the extreme ritualistic regard which the surgeon shows towards sepsis in surgery; for I wish to contrast it with the attitude of the medical profession towards the same (staphylococcal and streptococcal) sepsis in medicine—i.e., in medical diseases.

That attitude is a very curious one, as will presently appear. If a doctor were asked what it was he would probably say that it differed in no way from that shown towards it in surgery. He was as keen to discover and remove sepsis and its various suppurative and necrotic effects in the domain of medicine—e.g., in connexion with the throat, pharynx, stomach, duodenum, gall-bladder, liver, cæcum, appendix, colon or rectum, pelvis of kidney, the brain, the pleura and the lungs, the glands, &c., or failing the presence of actual pus he was as keen and observant about the presence or absence of streptococci in the blood in cases of obscure blood poisonings, septicæmias, ulcerative endocarditis, &c., as the surgeon was in the surgical domain. He could even point out that so much was this the case that these various regions of the body had been largely divided up among specialists, who devoted the greater part of their time to dealing with the various affections of these parts—among these affections septic infection being one of the commonest and most important. In short, his attitude towards sepsis in medicine, he would maintain, was precisely the same observant one as he was taught to show towards it in surgery. The only difference between the two cases, he might point out, was the unfortunate one—viz., that the sepsis he found in medicine was not so easily got at or so easily removeable as it happily was in the domain of External Surgery. But, as we saw, the regard which the surgeon shows towards sepsis in the domain of surgery is not confined to its removal when present. It has another and far greater object—namely, its prevention. It is not so much in the removal as in the prevention of sepsis that surgical antisepsis has won its great triumphs.

### APPARENT RÔLE.

If the doctor were asked how the matter stood with regard to the *prevention of medical sepsis*, he would probably say that that was a matter he unfortunately could not control. These septic suppurations unfortunately occurred in medicine as complications of various medical diseases; in fact, they were often the essential features of these diseases, or actually constituted them—perforations, appendicitis, empyema, liver abscess, cholecystitis, glandular abscesses, septicæmia, ulcerative endocarditis, &c. The occurrence of these grave septic conditions, whether local or general, depended upon the state of health of the parts affected or of the body as a whole; and the factors concerned in giving rise to them were therefore as many and as various as the many and various local or general factors affecting the health of the particular organ, or of the body as a whole. Staphylococcal and streptococcal organisms were always in the body—e.g., the intestinal canal. It was unfortunately impossible to prevent them getting access now and again into other organs or into the blood. In any case, however common the above-named septic conditions might be, they were, after all, rare in comparison with the medical diseases with which he had to deal, of which they were only occasional complications or sequelæ. When they did occur they were matters for the surgeon—not for him. He found sufficient scope for his own work among the more purely medical complaints and illnesses of his patients—the various conditions of general ill-health presented by his patients; the malnutrition, the tonsillitic, naso-pharyngeal and glandular troubles of younger children; the dyspepsias, indigestions, gastric and duodenal ulcers, intestinal catarrhs and ulcerations, and liver disturbances of his older patients; their subacute and chronic rheumatic troubles; the simpler anæmias of young girls which usually yielded easily to treatment, although they sometimes were curiously resistant to treatment; the much more severe and troublesome anæmias of the middle and older periods of life; the multitude of their nervous complaints; their fevers of known nature (influenza or scarlet fever, diphtheria, typhoid, measles, &c.), and their complications; still more, the fevers of unknown or obscure nature which they occasionally suffered from and were so troublesome both in diagnosis and in treatment.

These and other affections of a like kind were numerous and troublesome enough to occupy all his time and call for all his powers of diagnosis and all his skill in treatment by appropriate medicinal and dietetic measures. They took in the medical sphere the place and importance that sepsis and its prevention took in the surgical sphere.

Complications of a septic nature sometimes occurred in connexion with some of them. These called for the help of the surgeon. To the surgeon septic infection was an all-important factor of disease. The doctor, worried to death with the multitudinous complaints of his patients and the apparently multitudinous and obscure causes underlying them, might often feel envious—if he cared to be so—of the surgeon's easier task in having to deal so much and so successfully with the removal or prevention of one well-defined infection—septic infection. If only he were able to prevent the causes of his patient's troubles as quickly and as effectively as the surgeon prevents or gets rid of sepsis, his

work in medicine, he might well say, would be a simpler and more interesting work both to his patients and to himself than it now is. Alas, however, from the point of view of prevention, the medical diseases with which he had to deal arose from many causes connected with the habits of life and surroundings of the patients—difficult to ascertain, and when ascertained not so easily preventable or removeable as the great factor of septic infection in surgery.

Sepsis in surgery, its action, prevention, or removal, was the greatest "principle" of pathology and practice with which the surgeon had to deal. Sepsis in medicine was a causal factor of altogether subsidiary importance; it was only one of many others. Even when it was present it was in most cases, if not in all, only a complication of other diseases, not its primary cause. It was an accident—a "terminal complication" of some other and more important disease.

### ACTUAL RÔLE.

Now, it is with this whole conception of the sphere of activity and importance of sepsis in medicine that my whole work for many years joins issue. What I wish to say to you to-day is that the above conclusions regarding its importance do not in my experience represent even approximately the actual pathological and clinical facts of the case.

In my clinical experience septic infection is without exception the most prevalent infection operating in medicine, and a most important and prevalent cause and complication of many medical diseases. Its ill-effects are widespread and extend to all systems of the body. The relations between these effects and the sepsis that causes them are constantly overlooked, because the existence of the sepsis is itself overlooked. For the chief seat of that sepsis is the mouth; and the sepsis itself, when noted, is erroneously regarded as the results of various conditions of ill-health with which it is associated—not, as it really is, an important cause or complication.

The causal connexion between the two sets of processes—the sepsis and its ill-effects—can be demonstrated by the simple expedient of removing the sepsis, and noting the striking effect which the removal has upon the existence, character, and intensity of the ill-effects. The ill-effects referred to include in individual cases every one of the diseases described in the foregoing section, and regarded as essentially medical in their character—viz., the general ill-health, dirty, sallow complexions, the indigestions, the gastric and intestinal troubles, the anæmias which resist treatment; tonsillitic, pharyngeal and glandular troubles of children; the chronic rheumatisms; obscure fevers, and blood poisonings, &c.

The effects are not the same in all cases, any more than are the effects of septic infection in surgery or those of tuberculous infection in medicine. They affect sometimes one system and sometimes another, in different degrees according to the individual susceptibility, just as a chronic tuberculous infection may in one case affect the glands of the neck, in another the joints, in another the bone, in another the lung, in another the meninges, in another the peritoneum, and in another it may affect them all.

So with this septic infection in medicine, the effects fall sometimes more on the tonsils, pharynx, or glands of the neck; sometimes more on the stomach, intestine, and colon; sometimes more on the blood, causing anæmia, purpuras, chronic septicæmias, obscure fever; sometimes more on the joints, causing so-called rheumatic trouble; sometimes more on the nervous system, or on the kidneys; and sometimes it falls in a fulminating way upon the blood as a whole, causing a general infection with streptococci with or without infective endocarditis.

The sum-total of ill-effects which it produces—of the ill-health and incapacity occasioned by its presence—is very great. It is greater in my observation than that produced by any other single factor in medicine, or by any other single infection operating in general medicine.

Sepsis in medicine therefore ranks, in my experience, as the most prevalent and potent infective disease in the body. It therefore deserves the particular attention of the whole profession, as much as it has hitherto received their particular neglect. It requires this attention at the hands of every branch of the profession. But it concerns especially the medical profession—the doctor whom the patient first consults. The responsibility for first detecting its existence, or realising its significance as a potential cause or complication of the patient's disease, or of applying the first measures of treatment—all devolve upon him. It is his opinion and interpretation that will determine the degree of importance which the patient will attach to his condition. If he belittles what he sees, or, what is even more common, if he fails to observe by close examination what lies before his eyes, the patient will not receive the advice or treatment he needs, and he will not allow others to give it to him.

### "ORAL SEPSIS."

In the foregoing sketch of the chief spheres of the doctor's work and interest I omitted any reference to one other portion of the body which constantly comes under his observation—indeed, more often than any other; I mean the mouth. This omission was intentional on my part. The cases presently to be described—which could be multiplied by thousands and tens of thousands coming under the daily notice of doctors—illustrate how constant this omission is in practice.

There is no part of the human body more commonly looked into by the doctor than the mouth. He looks at the tongue of every patient he sees, and learns much from its condition. It is notoriously a very unruly member, in more ways than one. It constantly "gives away" its owner in the ordinary affairs of his life, and it does the same in the matter of his diseases. For it yields the doctor most instructive and important information regarding the bodily health—the condition of digestion and the general health.

When looking into the mouth of his patients the doctor has often occasion to note incidentally the presence of defective or decayed teeth, as a general accompaniment and apparently as a part result of the poor health, poor nutrition, or wasting diseases from which they suffer. These defects of the teeth are so common that he has ceased to worry about them. He has often asked his patients, How can they expect their digestion to be good? What else but indigestion can they expect if they will not have their "teeth put in order" by the dentist, or get the dentist to supply new ones. How can they expect to masticate their food properly with such defective teeth? But, as he may sorrowfully add, patients are "hopeless" in this matter; they will not "attend to" their teeth; not only so, they are also actually "touchy" on the subject. The patient is quite willing to describe and discuss with the doctor all his other troubles and complaints, to which, as he says, he is a "martyr"—his indigestions, headaches, liver troubles, his rheumatism, his gout, and his "neuritis." But the subject of his teeth is his own affair—one between himself and his dentist. And the doctor regards it as such. "It is a matter of teeth and dentistry," with which he cannot deal.

What I desire to impress upon you students, and all students entering the profession, and all those already engaged in the practice of the profession, is, it is "not a matter of teeth and dentistry." It is an all-important matter of sepsis and antisepsis that concerns every branch of the medical profession, and concerns very closely the public health of the community. It is not a simple matter of "neglect of the teeth" by the patient, as is so commonly stated, but one of neglect of a great infection by the profession—a great infective disease for which the patient is not primarily responsible any more than he is responsible for the contraction of typhoid fever or tuberculosis. The condition referred to is that to which I have given the name of "oral sepsis."

The title "oral sepsis" was first introduced into medical literature in a paper entitled, "Oral Sepsis as a Cause of Disease."[2] My object in seeking for a special name, and after consideration in creating this one, was to emphasise the great fact that it is not the absence of teeth but the presence of sepsis, that it is not dental defects but septic effects, that it is not defective mastication but the effective sepsis associated with such dental defects or often present in conditions of gingivitis apart from such defects, that are responsible for the ill-health associated with "bad" mouths.

The second object was to emphasise the importance of the infection caused by staphylococcal and streptococcal organisms, as distinguished from the purely saprophytic infections in which the mouth abounds; or the temporary presence of specific organisms—e.g., typhoid, tubercle, pneumonia, &c.

The subject of "oral sepsis," as I designated and defined

[2] Brit. Med. Jour., July, 1900.

it—namely, the septic lesions of streptococcal and staphylococcal infection found in the mouth—belongs to no one department of medicine or surgery. It is common ground on which the general doctor, physician, or surgeon; the throat, nose and ear, and eye specialist; specialists in children's diseases, in stomach diseases, in blood diseases, in "rheumatic" diseases, in fevers, in skin diseases, in nervous and mental diseases, and, lastly, the dental surgeon, all meet on terms of equal responsibility. In its earliest manifestations no special knowledge is required to deal with it; a sound grasp of the principles underlying antisepsis alone is required. Unfortunately for the patient, it is precisely this grasp which I grieve to say is wanting.

One would think poorly of a surgeon or doctor who declined to take the responsibility of treating a follicular (that is, a "septic") tonsillitis, but insisted on handing over the case to a throat specialist, or who allowed a patient to suck continuously a number of septic sores on his finger. I think no less poorly of any doctor or surgeon who declines to make himself responsible for the treatment of much of the oral sepsis presented by many of his cases. For this is what patients are constantly doing. Wherein consists the pathological difference between a follicular tonsillitis and a foul, septic suppurating condition of the gums, with deposition of calcareous "crusts and scabs" (so-called tartar), covering and hiding septic wounds and ulcers—loaded, as microscopic examination shows, with staphylococci and streptococci. None whatever, except that the latter is exceedingly common and the tonsillitis is comparatively rare. The pathological condition in both is the same—namely, sepsis. Moreover, it is a sepsis as easily recognised and much of it as easily removed in the case of the one as in that of the other, and the more urgently requiring to be removed since it is more important as a potential disease factor than any other source of sepsis in the body.

But, it is urged, the condition is so common that it is impossible either to prevent it or to deal with it successfully; further, the ill-effects are few and rare compared with the wide prevalence of the condition. As I originally showed (1900), and my further experience of the last ten years, supported by that of many others, fully demonstrates, the ill-effects are both common and grave. That they are not more common is due solely to the great resisting power possessed by the mucosa of the mouth and gums.

This matter of oral sepsis is, therefore, of urgent importance in relation to the whole multifarious and widespread group of affections—medical, surgical, and dental—caused by the actual presence or toxic action of pyogenic organisms (staphylococci and streptococci).

My clinical experience satisfies me that if oral sepsis (and naso-pharyngeal) could be successfully excluded, the other channels by which "medical sepsis" gains entrance into the body might almost be ignored. Sepsis as an important and prevalent cause of disease in medicine would almost cease to exist, instead of being, as in my judgment it is at the present time, a more important and prevalent cause of disease in the domain of medicine than it is in that of surgery. Time was when the positions were reversed—when sepsis was so prevalent in the surgical wards that it overflowed into the medical wards in the form of some of its effects—for example, amyloid disease of kidney and liver and intestine. Now the relations are otherwise. In the form of the various affections above mentioned the greatest variety and most severe manifestations of sepsis and its effects are, in my experience, to be found in medical wards, whence they overflow (in the form of appendicular, gall-bladder, pleuritic, pyelitic inflammation, and suppurations) into the surgical wards.

It is, of course, impossible to keep staphylococci and streptococci out of the mouth, just as it is impossible to prevent occasional access of diphtheria, typhoid, pneumococcus, tubercle, and other infections. But that fact does not deter us from taking the most extensive sanitary and hygienic precautions to keep typhoid or tubercle infection out of the water or milk we drink or the air we breathe. I am satisfied that by suitable measures this far greater evil of oral sepsis could be largely prevented.

I submit, then, once more—as I did in the first communications (1900) and later papers (1903) bearing the title of "Oral Sepsis"—that in the interests of the many sufferers from the great group of medical affections which it produces this condition of oral sepsis, the chief channel of access of all pyogenic affections, is urgently deserving of increased notice and attention. Knowing as we do the pathogenic qualities of staphylococci and streptococci, we have not the slightest excuse for allowing the mouth, so easily accessible to local measures, to remain the chief seat of its open wounds and a veritable hotbed for their development and propagation; on the contrary, it is a severe reflection on our profession if we allow it.

Even if the teeth were not subject to a very marked septic infective process—that which we term caries and cario-necrosis—and always remained intact except in so far as they were affected by the septic infection in the gums and in the periosteum of the sockets, the infective processes in the gums constitute very important septic wounds and are a great source of sepsis to the body. As a matter of experience this is often the case. The teeth remain intact or at least free from obvious caries or cario-necrosis; but the gums and periosteum of the sockets are the seat of numerous septic wounds. These effects are shown by septic suppuration, by deposit of tartar, sometimes in great masses on the teeth, on the gum margin and beneath the gum margins, by the formation of pockets (septic ulceration of periodonteum—periostitis), absorption of bone, and loosening of the teeth in their sockets.

All these conditions are very obvious to the doctor if looked for and observed, and they are very septic and productive of some of the worst septic effects on the bodily health. But in many cases they need not be so obvious. For the septic infection may be confined almost exclusively to the periodonteum (periosteum) of the sockets, and be evidenced only by ulceration of that membrane, pocket formation, loosening of the teeth, suppuration—sometimes, however, by very slight suppuration.

It is in poor patients that these septic conditions are most common. They have had "no care" of their mouths—their fate is the relatively happier one of having their septic roots lying exposed in all their nakedness surrounded with tartar, overgrown it may be by foul, septic, fungating gums. This sepsis is relatively open and above board—it stares one in the face when it is looked for. At the worst it is covered by plates—which they have been told not to remove (!)—covering septic roots—which they have been told to keep (!), in order to prevent any falling in of the gums. The conditions in these cases, atrociously septic as they are, are comparatively easily dealt with, for they can be seen and recognised; and even if the patient refuses to have his roots removed much of the sepsis is superficial and can be got at and removed by careful daily swabbing with antiseptic lotions. And if this can be done regularly the patient may ultimately be induced to have the septic root removed.

But the problem presented by similar conditions in private patients is a much more difficult one. One of the worst cases of sepsis I have ever seen was brought me by a doctor who told me that the mouth had been "carefully seen to and was in good order." The patient was a tall, handsome man in the prime of life—a case of severest Addisonian, so-called "pernicious," Idiopathic Anæmia. His mouth was, indeed, clean to all outside appearance, for it was one mass of gold caps, bridges, crowns, fillings, false teeth, &c., so ingeniously built up that one could hardly tell what was false and what was real. To free that man from his sepsis in his state of health involved what was really equivalent to a major operation in surgery. The conditions of sepsis, necrosis, &c., revealed on removal of this golden architecture were perfectly appalling.

No one has probably had more reason than I have had to admire the sheer ingenuity and mechanical skill constantly displayed by the dental surgeon. And no one has had more reason to appreciate the ghastly tragedies of oral sepsis which his misplaced ingenuity so often carries in its train. Gold fillings, gold caps, gold bridges, gold crowns, fixed dentures, built in, on, and around diseased teeth, form a veritable mausoleum of gold over a mass of sepsis to which there is no parallel in the whole realm of medicine or surgery. The whole constitutes a perfect gold trap of sepsis of which the patient is proud and which no persuasion will induce him to part with. For has it not cost him much money, and has he not been proud to have his black roots elegantly covered with beaten gold, although no ingenuity in the world can incorporate the gold edge of the cap or crown with the underlying surfaces of the root beneath the edges of the gums? There is no rank of society free from the fatal effects on health of this surgical malpractice.

I speak from experience. The worst cases of anæmia, gastritis, colitis of all kinds and degrees, of obscure fever of unknown origin, or purpura, or nervous disturbances of all kinds ranging from mental depression up to actual lesions of the cord, of chronic rheumatic affections, of kidney disease are those which owe their origin to, or are gravely complicated by, the oral sepsis produced in private patients by these gold traps of sepsis. Time and again I have traced the very first onset of the whole trouble of which they complained to a period within a month or two of their insertion. The sepsis hereby produced is particularly severe and hurtful in its effects. For it is dammed up in the bone and in the periosteum, and cannot be got rid of by any antiseptic measures which the patient or the doctor can carry out. Moreover, it is painless, and its septic effects therefore go on steadily accumulating in intensity without drawing attention to their seat of origin.

Such are the fruits of this baneful so-called "conservative dentistry." The title would be a fitting one if the teeth were a series of ivory pegs planted in stone sockets. But the teeth being what they are—namely, highly developed pieces of bone tissue, possessing, I would point out, a richer blood- and nerve-supply than any piece of tissue of the same size in the whole body—and planted in sockets of bone with the closest vascular relations to the bone and the soft tissues of the periosteum and the gums, the title that would best describe the dentistry here referred to would be that of "septic dentistry." Conservative it is, but only in one sense. It conserves the sepsis which it produces by the gold work it places over and around the teeth, by the satisfaction which it gives the patient, by the pride which the dentist responsible for it feels in his "high-class American" work, and by his inability or unwillingness to recognise the septic effects which it produces.

After ten years' experience of the nature of these effects and of the difficulties encountered in removing them, I feel that the only solution of the difficulty may best be described in the terms employed by Huxley, modified to suit this particular case:—

> There can be no doubt that the future of Oral pathology and treatment, and therefore of practical dentistry, depends upon the extent to which those who occupy themselves with these subjects are trained in the principles and impregnated with the fundamental truths of Oral Sepsis and Oral Antisepsis.

The problem is an important one for the dental profession, and its solution is an important one in the interests of public health, especially of our school children, 30 to 50 per cent. of whom suffer from dental and oral sepsis and its tonsillitic, pharyngeal, glandular, and other effects. For while a large body of that profession are engaged in dealing successfully with the difficult problems of dental disease and of oral sepsis, another body is no less steadily engaged in promoting sepsis of the worst character and degree by ignoring the fundamental truths connected with the anatomy, physiology, and pathology of the tissues with which they deal. To gold-cap a healthy or diseased tooth in order to beautify or "preserve" (!) it is the negation of every one of these truths—a veritable apotheosis of septic surgery, and of surgical and medical malpractice.

The medical ill-effects of this septic surgery are to be seen every day in those who are the victims of this gilded dentistry—in their dirty-grey, sallow, pale, wax-like complexions, and in the chronic dyspepsias, intestinal disorders, ill-health, anæmias, and nervous ("neurotic") complaints from which they suffer. In no class of patients and in no country are these, in my observation, more common than among Americans and in America, the original home of this class of work.

### CLINICAL EFFECTS OF SEPSIS.

The chief feature of this particular oral sepsis is that the whole of it is swallowed or absorbed into the lymphatics and blood. Unlike the sepsis of open wounds on the outside of the body none of it is got rid of by free discharge on the surface. The effects of it, therefore, fall in the first place upon the whole of the alimentary tract from the tonsils downwards. These effects include every degree and variety of tonsillitis and pharyngitis; of gastric trouble from functional dyspepsia up to gastritis and gastric ulcer; and every degree and variety of enteritis and colitis, and troubles in adjacent parts—e.g., appendicitis. The effects fall in the second place upon the glands (adenitis); on the blood (septic anæmia, purpura, fever, septicæmia); on the joints (arthritis); on the kidneys (nephritis); and on the nervous system.

I cannot within the time at my disposal bring before you all the facts relating to medical sepsis or to its greatest cause—oral sepsis—on which these conclusions as to their importance are based. This I have already done in the series of papers already referred to. I propose rather to deal with you as you dealt with your assumed inquirer in the matter of antiseptic surgery—namely, enunciate briefly certain definite principles that may appeal to you, and illustrate these by a few recent cases selected at random.

The first of these principles is that the sepsis here had in view is all swallowed or absorbed, and that infection with staphylococcal and streptococcal organisms carries with it certain definite and deleterious effects wherever it is found. These effects vary, naturally, with the site of the infection and the degree of resistance offered by the tissues which are the seat of the invasion.

In the case of the mouth the mere presence of staphylococci and streptococci on the surface of the mucosa, or on the tongue, or in the mouth secretions, or in the saprophytic flora which abounds in the mouth, does not of itself cause disease, any more than their presence on the uninjured skin. But the matter is totally different when they become seated in open wounds in the edges of the gums adjacent to carious teeth; or extend from this, their first site, downwards along the periosteum (periodontal membrane) of the tooth socket. The infection is then no longer a superficial one—it is in connexion with the soft tissues, periosteum, and bone. The resistance of these tissues, especially the gums, is fortunately very great; hence a degree of infection which anywhere else in the body would certainly draw attention to itself by its redness, swelling, heat, and pain, may indeed cause redness and swelling, but does not necessarily cause any pain. This is the more to be regretted, for a feature of the septic infection in the gums, the teeth, or in the sockets of the teeth is that it is infection in contact with diseased bone, and its virulence is intensely aggravated by this fact. For no septic infection is more intensely virulent than that connected with diseased bone. I speak from personal experience on this point. The only two occasions in which I ran a very close risk—in one instance of my life, in the other of a limb or my life—were two in which in my post-mortem work I contracted a blood poisoning from pus arising in connexion with diseased bone. One of these was of a case of "septic anæmia," in which I pricked my finger while handling the tongue from a mouth full of oral sepsis. The symptoms showed themselves in 12 hours and were ushered in by faintness and rigors, fever of 103°–104°, and cellulitis of the whole arm before any local disturbance had shown itself.

Such untoward effects in the case of infection of the gums or jaws are very rare, although I have seen complete gangrenous necrosis of the whole of the alveolus and the bone of the hard palate, pyæmia and death result from this infection. But although such fulminating effects are exceptional, septic effects of various kinds and degrees are invariably present. These effects are not proportionate to the mere amount of the existing sepsis, but depend on its virulence. The most intense anæmia, blood poisoning, hectic fever, and even ulcerative endocarditis may in my experience be produced by one septic amalgam stopping, or by a small deep-seated alveolar abscess, or an unrecognised suppuration of the antrum or nasal sinuses. On the other hand, a man may have the foulest sepsis for years without apparently any ill-effect. But he need not vaunt himself unduly upon this comparative immunity; sooner or later his sepsis will find him out (Case 10). For even if it does not itself produce definite disease of its own, it will certainly complicate any independent disease from which he may afterwards suffer; and its effects, although unrecognised, may really constitute some of the most prominent features of his disease (Cases 7, 8, 9, and 10).

A patient's illness is not necessarily made up of the effects of his chief disease. The degree of ill-health or of the gastric, intestinal, febrile, anæmic, and nervous disturbances from which he suffers are by no means necessarily connected with, and due to, his chief disease. The chief interest of clinical medicine, as distinguished from systematic medicine, lies in the recognition of this great fact—in, so to speak, dissecting out all the causal factors operating in any individual case, and in removing so far as possible every

**adventitious factor, even if the chief one—e.g., permanent organic disease—is beyond control.**

CASES.

CASE 1. *Septic gastritis.*—A patient, a man aged 32, was admitted suffering from chronic indigestion and gastric trouble. His habits had been regular; his bodily physique good. There was no apparent reason why he of all men should be subject to gastric trouble. On examination I found he had a tooth plate in his upper jaw which he had not removed for two and a half years, which he was told not to remove, and which, even now, he could only remove with difficulty and after persuasion. On its removal there was found the most intense septic inflammation and ulceration of the gums around a number of necrosed roots underneath the plate. This was immediately dressed by me. After careful antiseptic dressing for several days to get rid of some of the septic infection, with immediate and obvious benefit to the patient, he ultimately consented to have the roots removed, and the patient left the hospital in a week or two entirely free from all gastric trouble. The condition was "septic gastritis" produced by an intense "oral sepsis," due to the insensate action of a dentist in supplying and fixing a plate to be worn over necrosed roots.

**Nine-tenths of the cases of dyspepsia and gastric trouble which I see are caused or complicated by similar oral sepsis, and respond at once to removal of this sepsis. Nevertheless the sepsis is overlooked because not looked for.**

CASE 2. *Septic gastritis.*—I was shown recently a very severe and obscure case of gastritis in a woman aged 33. She presented a dirty grey complexion and a broken-down appearance. The fullest report of her case was read to me, including the results of a chemical and microscopical examination of her stomach contents and of her fæces. On examination she presented the most intense oral sepsis—ulceration of the gums, with large deposits of tartar covering the ulcers and extending up to, and enclosing, the teeth, many of these being quite loose in their sockets. She had swallowed this infection for years, and it had caused not only "septic" gastritis, but also septic colitis, for, as was duly noted, pus was present in the fæces.

**Everything in connexion with the case had been duly observed and recorded, including the presence of pus in the fæces. But the condition of the mouth, although noted to be bad, had not been dealt with.**

CASE 3. "*Septic colitis.*"—A patient was admitted suffering from chronic colitis of many years' standing; he had been an in-patient of other hospitals for the same complaint. He passed large masses of mucus with each motion. The case was so-called "mucous colitis," a title which seems to mean something definite, but merely means that he has some kind of colitis, and that he is passing mucus. On examination I found he had some 20 rotten roots in his mouth, all of them necrosed down to the level of the gum. The infection had all been swallowed for many years. I termed the condition "septic colitis." The teeth were carefully dressed for several days and then extracted. Three or four days later the patient ceased to pass any more clumps of mucus in his stools, the bowels became regular, and in two or three weeks' time he went out free from all intestinal trouble. The condition was one of septic colitis caused by oral sepsis.

**Even if the colitis had been originally due to some other cause—e.g., dysentery, typhoid—it would have been intensely aggravated and complicated by this additional septic infection. I have seen many similar cases, and the connexion between oral sepsis and colitis is by no means sufficiently recognised.**

CASE 4. *Septic anæmia.*—A patient had suffered from anæmia for six or seven years. Five or six years ago the anæmia was so marked that she was warned by a distinguished surgeon who saw her that it might become "pernicious." When seen by me (1907) she was leading an invalid's life, suffering from chronic anæmia, weakness, giddiness, and palpitation, going about from place to place in search of health. Her history was the following. For the last twelve years she had had pains, very acute, of a neuralgic character over the right frontal region, and this was followed by a discharge of pus from the nose, followed by a similar attack the following winter. From time to time there was tenderness over the right frontal region with increase of discharge. She was sent to me by a well-known nose specialist with the following note: "She has a chronic, foul empyema of the right frontal sinus, and there is muco-pus in the corresponding antrum. Whether these conditions cause the anæmia I do not know; they do not help it getting better. My suggestion is that she should let you relieve her anæmia as far as possible, and when she is well enough she might have the sinus dealt with." My own opinion was quite definite. The whole history and the degree of blood-change—viz., 50 per cent. of hæmoglobin—satisfied me that the anæmia was "septic anæmia," and that it owed its origin to the suppuration of the frontal sinus. I therefore recommended that this latter should be dealt with at once. This was done, and the patient left the home in a few weeks' time entirely cured of her ill-health and anæmia, from which she had suffered for six or seven years.

CASE 5. *Septic anæmia.*—A patient, aged 64, sent to me on Sept. 8th for severe anæmia, from which he had suffered since February. Red corpuscles 41 per cent., hæmoglobin 40 per cent., leucocytes 5000. No history of loss of blood. I suspected septic anæmia and looked for possible causes. I found he had only five teeth markedly septic (oral sepsis 3°), with two small necrosed roots buried in the gum of the right upper alveolus, the gum margin and alveolus being much thickened. The right cheek was somewhat swollen and puffy, with some pain in the left side and tenderness of the last molar. On inquiry I learnt that at the beginning of the illness he had an aching tooth and went to a dentist who supplied him with a set of plates ill-fitting and uncomfortable, which had to be rejected; then supplied another set which also had to be rejected. (The dentist, it will be seen, failed to recognise the actual septic trouble presented by the remaining teeth.) The patient was placed in a home on Sept. 14th. On trans-illumination no antrum disease was discovered. I had the five teeth extracted with difficulty, owing to chronic osteitis. On Sept. 20th the corpuscles and hæmoglobin had risen to 49 and 58 per cent. respectively; and the patient left the home on Sept. 25th looking well, with 75 per cent. of corpuscles and 75 per cent. of hæmoglobin. By Oct. 18th he had 84 per cent. of hæmoglobin, and on Nov. 17th he had 91 per cent. of corpuscles and 94 per cent. of hæmoglobin, and was looking in good health.

CASE 6. *Septic anæmia.*—A man was admitted into a surgical ward on account of gastric symptoms with some hæmatemesis, suggestive of cancer. On examination nothing surgical was found justifying operation. But his anæmia was most profound, and he was transferred to my medical ward. On examination I considered the degree of anæmia to be too great to be accounted for by any loss of blood which he had, and there was marked fever. I therefore examined him for other causes. The gums were very pale and clean, and the teeth good with the exception of one upper bicuspid. Even on inspection I drew the attention of my class to its importance as a possible seat of hidden sepsis. On examining it a teaspoonful of pus burst from it. On further examination by transillumination the antrum above showed a deep shadow. The necrosed root was extracted and the antrum opened up and found full of the most offensively smelling pus. Between the time when he was first examined by me and the operation the pus discharged from the socket of the necrosed tooth was about two or three teaspoonfuls daily. He had swallowed and absorbed this daily—probably for many months—possibly years, with resulting gastritis and anæmia; and he was transferred from the surgical to the medical ward because his condition was essentially a medical one—not a surgical one (!). The condition was one of oral medical sepsis, unlooked for, unrecognised—due to the sepis produced by one septic root, which had probably "never given him any trouble."

CASE 7. *Septic anæmia as a complication of phthisis.*—A man suffering from advanced phthisis looked so exceptionally pale and anæmic that had he had no phthisical signs in the lung he might well have been considered a case of anæmia. His pallor and anæmia, however, were not connected with his phthisis, but with the extremist degree of oral sepsis which he also presented. His health greatly improved when the condition had been dealt with. His anæmia was largely the anæmia which I have termed "septic anæmia."

CASE 8. *Septic anæmia as a complication of chronic nephritis.*—A patient suffering from chronic nephritis may, and often does, present an extremely anæmic appearance, and in many cases a very severe degree of anæmia may be present in the blood. But that also is not necessarily a result of his nephritis, but may be, and often is, due to co-existing oral sepsis, sometimes of an extreme degree. So far from his anæmia being the result of his nephritis, the nephritis may be, and, in my experience and judgment, often is, largely a concurrent effect of the sepsis causing his anæmia.

CASE 9. *Septic anæmia complicating gastric ulcer and chlorosis.*—A girl is admitted suffering from the symptoms of gastric ulcer, and she may, and often does, present an extremely anæmic appearance. In her case the anæmia is promptly designated chlorosis, but it is not necessarily wholly of that character. For she may, and frequently does, present an extreme degree of oral sepsis. This sepsis is, in my observation, largely the cause not only of her anæmia but also of the gastric ulcer. Her trouble is by no means only gastric ulcer; both the gastric ulceration and her anæmia have originally been caused by the overlooked sepsis of her mouth. They are really septic in their nature, and if the temperature of cases of gastric ulcer be watched it will be found that a certain amount of fever is very often present. And a still more interesting practical result may be noted—viz., that on removal of the oral sepsis the whole conditions of gastric trouble, anæmia, and fever clear up together.

CASE 10. *As a complication of nephritis.*—A patient suffered from chronic Bright's disease, and presented all the usual symptoms and features of that condition—urinary changes, vascular changes, eye changes, œdema, headache, drowsiness, &c., including also a varying degree of fever. The temperature suddenly rose, and erysipelatous cellulitis of one side of the face appeared. The condition thus appeared clinically as one of chronic Bright's disease, complicated by erysipelas. On examination a deep ulcer with much stomatitis was found on the buccal mucous membrane of the affected cheek. The condition then appeared clinically to be kidney disease complicated by erysipelas and ulcerative stomatitis. On further examination the ulcer of the mouth was found to be directly in contact with an intensely septic molar root, and many other teeth showed marked septic gingivitis, with tartar deposit and pockets (septic periodontitis). These latter septic lesions had obviously been there for years. The ulcerative stomatitis and the erysipelas were not sequelæ of chronic kidney disease, but the direct manifestations of an entirely different disease—viz., septic infection which had probably existed for many years. The irregular fever presented by the case was also septic. We had thus two intercurrent conditions—kidney disease and sepsis. The latter is euphemistically termed a "terminal" infection—meaning thereby that it has come on towards the end of the patient's chief disease. But this infection was not "terminal"—was not determined by the kidney disease. It has existed for many years prior possibly to the nephritis, and the continuous excretion during these years of its toxins was quite capable of producing a chronic tubular nephritis; or, failing that, was certainly aggravating any nephritis due to other causes.

*As a Complication of Specific Fevers.*

**The following cases show to what extent oral sepsis complicates specific fevers, such as scarlet fever, typhoid, diphtheria, and the striking benefits to be got from its removal.**

**In 648 cases of scarlet fever admitted into the London Fever Hospital under my care in the four years 1904–07, the incidence of oral sepsis, carefully noted by myself, varied from 25 per cent. to 43 per cent. The effect of oral antisepsis—the removal, as far as possible, immediately on admission of every trace of oral sepsis around the patients' teeth and gums by daily swabbings with 1–40 carbolic acid solution—throughout the earlier part of the disease was very striking. The chief complications of the disease were reduced as follows: The incidence of secondary adenitis was reduced from 9·6 per cent. in 1904 to 3·3 per cent. in**

1906, and 1·8 in 1907; of cellulitis of the neck from 5·2 per cent. in 1904 to 2·8 in 1906, and *nil* in 1907; of glandular suppuration from 1·7 per cent. in 1904 to 0·5 in 1906, and *nil* in 1907. The striking improvement was due to the increasing care taken by myself and by my residents and nurses under my instructions. In only one or two cases out of the whole series were any teeth extracted.

### PRINCIPLES OF TREATMENT.

What are the general principles of the treatment applicable to medical sepsis? The first and most important is curiosity about and careful observation of the actual character and degree of the septic foci present in the mouth (naso-pharynx or elsewhere) in every case of medical disease. This observation cannot be made by a cursory glance into the mouth and a general conclusion to the effect that the "teeth are fairly good," or the mouth "fairly clean," or that the mouth "requires to be seen to." *If you look* closely into the mouth of your patients and note what you see *you will observe* every degree and variety of septic gingivitis; every degree and variety of septic ulceration; every degree of tartar deposit as a great effect of this septic inflammation and ulceration; every degree of suppurative inflammation of the gums; every degree and effect of septic periostitis and periodontitis with formation of pockets and loosening of teeth; every degree and effect of septic osteitis—e.g., rarefying osteitis, causing recession of the bone socket, or formative osteitis, causing thickening of alveolus; every degree and variety of septic caries and necrosis of the teeth; and as a result of all these conditions, singly or combined, every degree and variety of septic stomatitis, simple, ulcerative, gangrenous. You will see all this in infinitely less time than it takes to examine a specimen of the gastric contents, or of the fæces, or of the urine, or of the sputum; in far less time and with far less labour than it will take you to examine the nose, or the nasopharynx, or the larynx; in far less time than it takes you to examine the heart, or the liver, or, indeed, any other organ of the body. In particular cases you will observe that all these septic conditions are produced, or intensely aggravated, by toothplates covering necrosed roots, by amalgam and gold fillings which have become septic, by porcelain crowns with gold collars, by gold caps over diseased teeth, gold bridges and other gold fixed dentures which, however good to begin with, are never really aseptic, and are liable to become extremely septic. All these you can observe in a few minutes if you look for them—in less time almost than it takes to mention them.

The prime indication in treatment is thus to recognise the septic infective nature of these mouth lesions and their true relations to each other—to recognise which are the causes and which are the effects.

As I have shown, the course of the septic infection is from the gums to the periodonteum (periosteum) of the root, and thence to the bone of the socket. The results are septic gingivitis with ulceration, septic periodontitis (periostitis) with ulceration (pocket formation), rarefying osteitis of the tooth itself or of the socket with loosening of the tooth. *As a result* and accompaniment of the whole of these processes, we have the formation and deposition of tartar in larger or smaller amounts on the edges of the gums, in the pockets, or on the tooth itself. The prime causal factor in all these processes is the septic infection; all the other processes—gingivitis, periodontitis and periostitis, osteitis, and tartar deposits—are the results of this septic inflammation and ulceration.

I am accustomed to ascertain the degree of oral sepsis present in every case by close examination of the condition of the gum and bone around each tooth; and to indicate the degree of sepsis—whether slight, moderate, or severe—by the figures 1°, 2°, 3° respectively. In many cases these figures do not suffice; for the degree of sepsis is so great that it can only be expressed by figures up to 7° or 10°. The patient may have all his teeth good, excepting one or two; and yet these may present such a degree of septic gingivitis, or ulceration, tartar deposit, or necrosis, or there may be so much tartar deposit in connexion with one or more of all of his teeth, that the degree of sepsis is really severe—3°, 5°, or 7°. Or he may present a veritable mausoleum of gold work in his mouth in, on, and around his teeth, and be regarded as having his mouth "well cared for" and "thoroughly set in order," when, as a matter of fact, the degree of sepsis and necrosis covered and hidden by the gold is perfectly appalling (10°). I speak from experience. I have had many such cases, and they are the most trying and pitiable cases with which one has to deal, for they are produced by dentists. The worst cases of septic gastritis, enteritis, and colitis, of ill-health, anæmia, obscure septic fever, and other manifestations of medical sepsis, are in my experience those in which the greatest so-called "care," the greatest amount of "American skill" in the shape of gold work, has been bestowed on the mouth. For the patient refuses to have it touched. He has paid much for it and he has been told by his dentist that it represents the highest dental skill. As one of them put it to me, "For the life of him he could not see what connexion it had with his condition"!—in his case, one of continuous ill-health, gastric and intestinal trouble, and finally of anæmia, from which he had suffered for 20 years. His death shortly afterwards "saw" the connexion.

In observing the degree of sepsis in my hospital cases I am in the habit of dressing the septic wounds. The method I employ is to swab the edges of the gums and teeth with cotton-wool and 1 in 60 carbolic in order to clean off pus and to enable me to see the character and extent of the underlying wounds. The wounds are thereby dressed at the same time that they are being examined, and all the superficial sepsis is got rid of. This antiseptic dressing of the gums should be carried out daily so long as open wounds are present, by the nurse or by the patient himself; and it is astonishing how quickly the septic conditions of the gums are improved thereby, and how quickly the patient feels and shows by his appearance the benefit of this antisepsis.

Both the observation of the lesions and the treatment here described can be carried out in almost as short a time as they can be described. Pus is removed, pieces—sometimes masses—of soft tartar can be tilted off the edges of the gums, the foul bleeding wounds lying underneath them are exposed and simultaneously dressed. This treatment is applied irrespective of the presence or absence of deeper-seated sepsis—such as that connected with carious or necrosed teeth. For even if such are present, as they so often are, the removal of the superficial sepsis is a great boon to the patient, since if left it would be swallowed. Moreover, if the teeth have to be removed, the preliminary dressing frees the wounds around the necrosed teeth from much of their sepsis, and thus prevents the risks of further infection of the fresh wounds created by the removal of the tooth.

A further, and by no means the least important, advantage of the simple antiseptic measures here described is this: the patient himself learns for the first time that care of the teeth does not necessarily mean extraction of teeth; that, short of extraction, much can be done without any discomfort or pain to himself; moreover, that he himself can in many cases carry out the necessary antiseptic measures. Weak, nervous, highly strung patients, who at first absolutely refuse to allow anything to be done to their mouth, will, after a short experience of antiseptic dressing, of its freedom from pain, and of the benefits they experience from it, consent without demur to the removal of their carious roots. In one such case under my care, admitted very ill with a long-continued fever of unknown nature, the patient ultimately consented to have 10 or 12 necrosed roots removed, and went out quite well—a marvel to herself and to the doctor who sent her in thinking she had some obscure malignant or tuberculous disease. The temperature, which had ranged between 101° and 103° for many weeks, fell to normal on the day after the removal of the septic roots.

These are very simple principles of treatment for a condition that carries with it so many ill-effects—so it may be said. Yes, the principles are simple—they are *only* (!) those of observation and recognition and removal of the sepsis responsible for these effects. They are of the same simple character as those underlying the washings and scrubbings of his own hands and the skin of the patient which the surgeon carries out with such patience and ritualistic care. They have the same object—namely, the removal or prevention of any sepsis that can possibly introduce septic infection into the body. Like these measures, they are most effective when carried out by the doctor himself, not left to others. They differ from the antiseptic measures of the surgeon in one respect—they are not carried out amid the same impressive antiseptic surroundings. They therefore lack the impressiveness of the surgeon's antiseptic precautions both for the patient and the medical onlooker. But this is a fault that can, and will, I hope, in the near future

be remedied. For the evil of sepsis in the mouth is a very prevalent one and can never be adequately dealt with by driving every sufferer from it through the already overtaxed and overburdened hospitals of the dental profession. Even after it is dealt with antiseptically in the manner above described by the doctors and surgeons whose cases it complicates, there will always remain sufficient for the dental surgeon to undertake in his own sphere.

The surroundings which I would fain see provided in both general and dental hospitals and children's schools for carrying out these initial and all-important antiseptic dressings of the mouth would be special dressing-rooms free from all costly appliances of dental chairs and dental apparatus, and furnished simply with the simpler antiseptic furniture of a surgical dressing-room. If patients could learn that they could have their gums and teeth antiseptically dressed by a competent nurse without any pain or discomfort to themselves, the evil of oral sepsis could be greatly prevented or kept in check. For they would learn from this experience what they cannot learn now—namely, the antiseptic objects and the benefits of cleanliness of the mouth. As one hospital patient put it, "No one had ever told me before."

These principles of treatment are indeed simple; they are only those underlying the whole practice of antiseptic surgery—namely, removal of sepsis whenever it is causing ill-effects and can be got at. If they can be put into practice in the domain of medicine to prevent or get rid of some of the most prevalent diseases in medicine, as in my experience they can be, it is the duty of the medical profession as a whole and each member of it within his degree to help to carry them into practice and to devise the necessary measures in their hospitals to enable them to be carried out.

The evil is so common and widespread that it is impossible to deal adequately with it—so it may be said. The same plea might have been urged in connexion with every other great practical advance in preventive medicine—e.g., the sanitary measures for the prevention of typhoid and other water-borne diseases. To deal effectively with such diseases—to teach people how to be clean in their sanitary arrangements—must have appeared an almost hopeless task when sanitary science was first put into practice. But everything can be done in time—if the principles underlying our efforts are sound.

So with this great evil of oral sepsis and its manifold ill-effects, far more widespread in their extent and no less severe in their character than those connected with typhoid or even with tuberculosis. The plea of helplessness to deal with it, I submit now as I did in my first papers on the subject, is a singularly poor one to be put forward or given any support to by the medical or surgical profession, at whose instigation the most elaborate and expensive equipments of hospitals have been, and are daily being, carried out.

# SUBTOTAL HYSTERECTOMY FOR FIBROMYOMA UTERI: FORTY ADDITIONAL HISTORIES.[1]

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IN September, 1905, I read at a meeting of the Obstetrical Society of London a communication bearing the title "Subtotal Hysterectomy: After Histories of Sixty Cases."[2] I had already discovered that long series of "successful cases" of hysterectomy for fibroid tumours, when "success" simply means recovery from operation, teach little or are actually misleading, for "recovery" is by no means synonymous with cure. The tumour is gone, but certain discomforts may for a while embarrass the patient, and the surgeon should be aware of the nature of these possible discomforts. On that account I prepared tables of 60 cases in my own practice where the patient had not reached the menopause and where an after-history of at least two years was obtainable, tables drawn up after Dr. G. Crewdson Thomas's method. When one or both ovaries are saved a two years' history is absolutely needed, for as I then noted and as the present record of further experience will show, a kind of period may be observed for many months after a subtotal hysterectomy where both ovaries have been removed. Therefore I then rejected, as I now reject, many interesting cases where the after-histories were too short or otherwise imperfect. The main object of my memoir was to determine how far patients receive lasting benefit from subtotal hysterectomy, how far they are liable to certain discomforts, how far the preservation of more or less ovarian tissue may save them from these discomforts, and lastly, how far it may be necessary to preserve some of the endometrium, or, in surgical language, how far it is advisable to amputate the fibroid uterus above the level of the os internum.

In this communication I analyse 40 similar cases from my own operative practice as before. The operations in the new series were performed between February, 1903, and February, 1908. Thus I have collected 100 cases, which simplifies, among other things, the calculation of percentages, whilst the value of the two series is in other respects greatly enhanced by their combination. I earnestly hope that operators who prefer panhysterectomy in the treatment of uterine fibroid will see their way to publish similar analyses of their operative practice. I do not deny that the complete operation has its advantages. I will not discuss either the immediate or distant benefits or risks associated with the preservation of the cervix, for the aim of this communication is not the consideration of the purely surgical merits of a certain operation, but the making known of its remote effects on the patient. I exclude all other considerations, many of high importance, such as the value of the cervix as a support to the pelvic floor.[3] On the other hand, I must be excused for avoiding all purely physiological questions, and therefore I will not discuss the important monographs of Scott Carmichael and Marshall,[4] Blair Bell and Hick,[5] Bond,[6] and the British and foreign workers who have recently experimented on transplantation.[7] We must study with care the reports issued by these distinguished authorities; and for my own part I follow their example when I publish the result of my own experience. With all respect to them I must turn attention to the truth that women are not rabbits. When we remember how many fallacies have arisen through theorizing on the homologies of bones, how can we rely on theories about the homologies of the ovary and endometrium in woman and in the lower mammals? We must not take for granted any assumption that lutein is the same in *Lepus* as in *Homo* and that the endometrium immediately above the cervix bears the same relation to the ovary in the rabbit as in our own species. At the same time, we know that the able, painstaking, and experienced workers to whom I have just referred will do their best to throw more light on these dark questions.

Dr. Arthur E. Giles, in an important statistical treatise on his operative work,[8] finds that "after hysterectomy menstruation usually ceases; but if a small portion of the body of the uterus be left, as may happen in a high supravaginal amputation, menstruation may continue regularly for a longer or shorter period, with no other apparent difference than a diminution in quantity." His experience agrees with my own, but his tables are not drawn up quite after the plan which Crewdson Thomas and myself have adopted, as many after-histories are too short for the present purpose, and cases of panhysterectomy and amputations for fibrosis as well as fibro-myomatous tumour are included. Still, although a precise scrutiny of the level of amputation would have been desirable, we must admit that Dr. Giles

[1] A paper read at a meeting of the Royal Society of Medicine, Obstetrical and Gynæcological Section, on Jan. 5th, 1911.

[2] THE LANCET, Nov. 4th, 1905, p. 1310.

[3] In none of my hundred cases did prolapse of the vagina develop. Giles finds that "the fate of the cervical stump after supravaginal hysterectomy need cause no apprehension."

[4] "The Correlation of the Ovarian and Uterine Functions," Proceedings of the Royal Society, B, vol. lxxix. "On the Occurrence of Compensatory Hypertrophy of the Ovary," Journal of Physiology, vol. xxxvi. (1908), p. 431, and (S. Carmichael), "Conservative Surgery of the Uterus and Ovaries," Edinburgh Medical Journal, March, 1909.

[5] "Physiology of the Female Genital Organs," Brit. Med. Jour., vol. i., 1909, p. 517, et seq.

[6] "Uterine and Ovarian Physiology and Pathology in Rabbits," Ibid., vol. i., 1906, p. 121.

[7] S. Carmichael: "The Possibilities of Ovarian Grafting in the Human Subject," Journal of Obstetrics and Gynæcology of the British Empire, vol. xi., p. 215.

[8] "A Study of the After-results of Abdominal Operations on the Pelvic Organs, based on a Series of 1000 Consecutive Cases," Journal of Obstetrics and Gynæcology of the British Empire, vol. xvii., p. 370.

has taken great pains in his analyses of menopause symptoms after subtotal hysterectomy. Mrs. Scharlieb has published two instructive series of tables of operations for fibromyomata of the uterus,[9] but not quite on the same plan as my own. We hope to hear more about after-histories from so competent an authority.

Lastly, in respect to statistical tables designed to throw more light on the questions under consideration, the section would, I am sure, be much interested if certain strong advocates of panhysterectomy,[10] well known and honoured by us all, would furnish us with analytical tables such as I have prepared.

In regard to the recently expressed opinions of others in respect to the saving of ovarian tissue and the preservation of a piece of endometrium by amputation above the os internum, I find that some writers are in accord with views expressed in this communication. Kelly and Cullen[11] declare, on statistical evidence which they publish, that the surgeon should, wherever possible, save every normal ovary. In their series of 56 cases where one or both ovaries were saved the after-histories are shorter than two years in at least the last two cases, a fact which might draw down criticism from those who make light of conservative methods. In order to exclude absolutely any abnormally early appearance of the menopause these writers only include in their table cases in which the patients were not over 41 years of age. I have included in my series all patients who still menstruated, as the sudden arrest of the catamenial function is to be avoided if possible at any age, and if a relatively aged woman in whom that function persists is subjected to operation it is both interesting and important to ascertain the after-history.

Dr. Howard Kelly, however, writing independently, advocates preservation of a piece of endometrium, as well as one or both ovaries.[12] "I have in selected cases proceeded upon the plan of keeping a portion of the uterine body with the mucosa above the cervix in women who were still menstruating, in this way succeeding in preserving regular menstruation in many cases of non-malignant disease, for the most part treated to-day by a cervical amputation of the uterus or even by panhysterectomy. The two classes of patients best fitted for this plan of treatment are, on the one hand, those with fibroid uteri not suitable for myomectomy, nor demanding panhysterectomy, and, on the other, the large group of subinvoluted hæmorrhagic uteri. It is a *sine quâ non* in each case that one or both ovaries must be sound enough to be retained. It is sufficient to retain a little pocket of the mucosa within the uterus big enough to lodge the end of the little finger, while more should be kept if possible; with the mucosa the corresponding portion of the muscular investiture is retained. The tissues so conserved are then sutured face to face as not seriously to interfere with the blood-supply. An amputation of this sort is easily done by simply cutting through the uterine wall well above the cervix, starting, in other words, to make a high amputation in and not below the uterine body."

Thus, like Abel, Zweifel, and myself, Howard Kelly deliberately saves some of the endometrium when possible in order to prevent as far as practicable a sudden cessation of the menopause. He is yet more conservative than other operators, for he "grades the amputations done *in utero* from one which is barely made supracervical to one which is done at the very fundus itself and is principally a myomectomy." He practises a horizontal and a vertical amputation, describing the steps of each operation. He publishes nine results, but no doubt a longer series will some day be issued.

These tables certainly show that there can be no doubt that the preservation of ovarian tissue is advisable, provided that the ovaries are healthy and that their sacrifice is not demanded for certain surgical reasons. The preservation of a piece of endometrium seems almost equally advisable. The saved fragment may, it will be seen, carry on menstrual functions when both the ovaries are sacrificed. The advantages of sparing a piece of the uterine mucosa comes out clearly in Group II., where one ovary was spared. The point is obscured in Group III., where both ovaries were saved, owing to certain non-essential complications present in no less than three cases.

GROUP I.

*Both ovaries removed.*—Twelve cases come under this heading—namely, Cases 61, 64, 69, 73, 77, 78, 81, 84, 90, 93, 96, and 99.

*Age.*—Five between 35 and 40 years (Cases 61, 78, 84, 96, and 99); from 40 to 45 years, five (Cases 64, 73, 77, 81, and 90); from 45 to 50 years, one (No. 69); and one 50 years old (Case 93).

*Married or single.*—Ten married (Cases 61, 64, 69, 73, 78, 84, 90, 93, 96, and 99); and two single (Cases 77 and 81).

*Results.*—1. Menopause neither immediate nor complete: 1 (Case 64). 2. Menopause complete, no symptoms: 3 (Cases 69, 93, and 96). 3. Menopause complete, distinct but mild symptoms: 4 (Cases 61, 73, 78, and 81). 4. Menopause complete, severe symptoms: 4 (Cases 77, 84, 90, and 99).

*Analysis of the case where the menopause was neither immediate nor complete.*—No. 64. Age 44. Married. Four pregnancies, last 12 years. Hæmorrhages: Severe menorrhagia. Size of tumour: Small; it involved the cervix. Line of amputation: Above os internum. Ovaries: Normal. No. 64 may be ranked among those interesting cases where, although both ovaries were removed, it is certain that some of the endometrium was saved and where the periods continued for two years, whilst no flushings or other distressing symptoms preceded or followed their cessation. Last August, close upon seven years after the operation, the patient wrote to inform me that she had grown stout and had never felt so well since her youth, a "history," however, quite common after the menopause. This patient had been under treatment for uterine hæmorrhages, beginning after her last confinement 11 years previously. Recently they had been very severe; one attack two months before the operation lasted five weeks and nearly proved fatal. There was double aortic disease distinct but not pronounced, and small external hæmorrhoids. I enucleated a fibromyoma of the size of a Tangerine orange, which mostly grew in the anterior wall of the supravaginal portion of the cervix. The body of the uterus was very bulky, hæmostasis was difficult, and on that account I did not attempt to finish the operation as a pure myomectomy, whilst the appendages had to be sacrificed in order to secure the ovarian vessels far above the engorged veins on the uterus. The artery of each round ligament required separate ligature. Then the uterus became pale and diminished in bulk. I thought that some endometrium might well be saved, bearing in mind some previous cases, so I amputated above the os internum. The anterior wall of the cervix made a good flap, after careful trimming, over a stump which was not at all bulky.

*Relation to cases in the old tables.*—This case (Case 64) resembles Case 36 in the old tables, where menorrhagia was marked. The periods reappeared three months after the operation, and continued regular for seven months; by the end of two years there was only occasional show. There were no flushings. In Case 64 the periods were regular. In Case 12 the periods, though irregular, persisted for over two years, but there were flushings, which subsided when the periods ceased. In Case 29, not only were both ovaries removed but the line of amputation passed below the os internum. A slight mucous discharge persisted and it was distinctly coloured every four weeks. Possibly, as I suggested when I reported the case, there were endometritic elements in the cervical mucosa. We see clearly, however, that in 10 per cent. in this group and in 4 per cent. of the whole series menstruation continued for some time after the removal of both ovaries, though the influence of the other factor under consideration is not evident. They seem to prove that the endometrium can maintain the catamenial functions when the ovaries have been extirpated.

*Analysis of the three cases where the menopause was complete without symptoms.*—Age: The youngest (Case 96) was 38 years old; the eldest (Case 93) was 50. Case 69 was 48.

[9] See "An Analysis of a Second Hundred Cases of Operation for Fibro-myomata Uteri, with Special Reference to their Degenerations and Local Complications." Proceedings of the Royal Society of Medicine, vol. ii., Obstetric and Gynæcological Section, p. 45.

[10] See J. D. Malcolm "On the Advisability of Removing the Cervix in Performing Hysterectomy for Fibro-myomatous Uterine Tumours," Transactions of the Obstetrical Society, vol. xlix., 1907, p. 148. An instructive discussion followed the reading of this important communication, and is published in full. Salva Mercadé (La Période post opératoire, soins et accidents, 1910, pp. 450–2) shows that the chances of cancerous degeneration of the stump have been greatly overestimated owing to certain sources of fallacy.

[11] Myoma of the Uterus, 1901, p. 603.

[12] "Amputation of the Uterus in the Corpus to Preserve the Menstrual Function," American Journal of Obstetrics, April, 1909, p. 570.

Married or single: All three married. Hæmorrhages: Only in Case 96, where a submucous growth had developed. Size of tumour: 3½ lb. in Case 69; moderate-sized, mesosalpinx invaded, mesenteric adhesion in Case 93. Small in Case 96. Line of amputation: Above os internum in 1 case (Case 93); below in 2 (Cases 69 and 96). Ovaries: Associated with tubal disease in 1 (Case 69), and normal in 2 (Cases 93 and 96). In Case 93, reported in THE LANCET of Nov. 9th, 1907, p. 1309, I operated on account of symptoms of chronic obstruction due to an adhesion of one lobe of the tumour to the mesentery. This adhesion formed an arch under which coils of small intestine became incarcerated. Although the patient was 50 years of age the periods were still present with more free show than when she was in the prime of life; such is not rarely the case in fibroid disease. For surgical reasons it seemed best to sacrifice the ovaries, but the uterus was amputated a little above the os internum; the stump was not fleshy and was easily covered over by a small flap. The menopause was complete and there were no flushings or any other symptoms. This satisfactory after-history is not always to be reported when both ovaries are removed from a relatively elderly woman who has not reached the menopause.

*Relation to cases in the old tables.*—Six came under this group (Cases 1, 6, 31, 37, 41, and 47). In 5 the line of amputation passed below the os internum; adding Cases 69 and 96, the total will be 7; in Case 41 this factor was uncertain. Adding Case 93, the total number of cases where the menopause was complete without symptoms, after removal of both ovaries, will be 9; that is, 22·5 per cent. in this group and 9 per cent. in the whole series.

*Analysis of the four cases where the menopause was complete with distinct but mild symptoms.*—Age: 2 under 40—Case 78 (36) and Case 61 (37); 2 under 45—Case 73 (43) and Case 81 (44). Married or single: 3 married (Cases 61, 73, and 78) and 1 single (Case 81). Hæmorrhages: Severe in 1 case (Case 61); moderate in 2 cases (Cases 78 and 81); and absent in 1 (Case 73). Size of the tumour: 11½ lb. in Case 61; 7 lb. 2 oz. in Case 81; 2½ lb. in Case 73; and 2½ lb.—"cystic perithelioma"—in Case 78. Line of amputation: Above os internum in 3 (Cases 61, 78, and 81) and below in 1 (Case 73). Condition of ovaries removed: Suspicious in appearance in 1 (Case 78); normal but drawn very high up in 2 (Cases 61 and 73). Lastly, in 81 "there was a true corpus luteum hæmatoma appearing as a blood cyst of the left ovary. The opposite (right) ovary has ovarian tissue extending into the ovarian ligament to within a quarter of an inch of the uterine cornu. The ovarian stroma has here produced a corpus luteum of most perfect type containing quite a large amount of compact lutein tissue" (C. Lockyer). Menopause symptoms in these cases: Limited in all four cases to occasional flushings.

The most noteworthy case in this group is Case 61. The patient was relatively young, 37 years of age, and had been married 14 years; she had borne six children, the youngest being three years old. A large bleeding uterine fibroid developed, there were strong omental adhesions, and a hæmatoma appearing as a solid body of the size of a chestnut lay in the omentum immediately above the line of adhesion; it represented an old hæmorrhage, no doubt due to the omentum being knocked backwards against the fibroid. The uterine appendages were very high up, and as the tumour was extremely vascular I found it necessary to tie the ovarian vessels on both sides; the vermiform appendix lay on the capsule on the right side, the broad ligaments were widely opened up, and the base of the tumour was enucleated from their folds. I was able to amputate the uterus immediately above the os internum, leaving a piece of healthy endometrium, whilst the muscular coat was cut thin. It may be noted that although a large vascular tumour, causing severe menorrhagia, was removed, the operation being lengthy on account of adhesions, enlarged vessels and enucleation, and the ovaries being sacrificed, nevertheless the sudden artificial menopause was not associated with severe symptoms in this case where endometrium was designedly saved.

*Relation to cases in the old tables.*—Nine came under this group—namely, Cases 2, 4, 5, 13, 16, 23, 28, 33, and 38. In all the nine mild flushings were noted, Case 23 had tinnitus, and Case 33 vertigo as well. In 4 cases the line of amputation passed below the os internum. Adding Case 73 in the present series the percentage will be 5. In 5 cases the line passed above the os internum. Adding Cases 61, 78, and 81, the percentage will be 8. The gross percentage of cases in this group where the menopause was complete, with distinct but mild symptoms, is 32·5, or 13 per cent. of the whole series.

*Analysis of the four cases where the menopause was complete, with severe symptoms.*—Age: Two between 35 and 40 (Cases 84 and 99) and two between 40 and 45 (Cases 77 and 90). Married or single: Three married (Cases 84, 90, and 99) and one single (Case 77). Hæmorrhages: None in three (Cases 84, 90, and 99) and distinct menorrhagia in one (Case 77). Size of tumour: In none was the tumour large; the operation was undertaken on account of pressure symptoms, &c.; in Case 77 there was also a fibroid in the left broad ligament, and in Case 90 the cervix was involved. Line of amputation: Above os internum in two (Cases 77 and 99) and below in two (Cases 84 and 90). Condition of ovaries removed: In the worst case (Case 77) the appendages were unavoidably damaged during the operation; in Case 90 both ovaries were cystic; in Cases 84 and 99 I found it advisable, for surgical reasons, to remove the ovaries. Menopause symptoms in these cases: Case 77 was the worst in the whole series, as the patient became insane, but it is by no means clear that this mental disease was due to the operation. The patient was aged 42 years, and subject to severe pelvic pains for two years, which kept her from her work; when under Dr. Cuthbert Lockyer's observation for five months she suffered from menorrhagia. Proptosis and tachycardia had been noted by a former medical attendant, but although the eyes were very prominent the pulse on admission was 84. There was no thyroid enlargement as in Case 74. The uterus was enlarged by a fibroid in its anterior wall and pushed to the right by a solid oval body as big as a turkey's egg. I removed the uterus and ovaries in June, 1905, enucleating the fibroid in the left broad ligament. The stump was fleshy and I trimmed it freely. This patient was a rheumatic subject. A little show was observed four times after the operation, but it is doubtful if it were menstrual. She returned to her professional duties and enjoyed very good health until November, 1908, over three years after the operation, when her health broke down. She suffered from constant flushings, worse by day; the last show was then observed. Tinnitus and deafness on the right side developed after November, and disease of the middle ear was detected; the flushings continued through 1909, but grew less severe. The patient complained of vertical headache and a "pumping noise." In the winter 1909–10 she improved greatly, but she rather suddenly became insane in the spring of 1910. Summoned home on account of her mother's illness, she arrived too late, finding her parent dead. This caused severe shock, and she then had an attack of influenza. On June 1st, 1910, the medical superintendent of the Berkshire Asylum reported that she was "very lost and rambling, and has periods of excitement." She was afterwards removed to Hanwell. Her sister had been twice under restraint. In the remaining cases (Cases 84, 90, and 99) the symptoms were nothing worse than severe flushings, generally with perspiration.

*Relation to cases in the old tables.*—Ten cases came under this important group—namely, Cases 3, 10, 14, 25, 26, 30, 35, 42, 44, and 54. In 8 the symptoms were, as in the present group, simply severe flushings, but Cases 25 and 26 were graver cases. The second, Case 26, was already intemperate before the operation; for three years after it the patient was troubled with flushings, which then ceased, and at the same time she resumed her intemperate habits and died from carbolic acid poisoning (suicidal?) at the end of six months. Case 25 resembled Case 77 in one respect, but the patient had already been under restraint before the operation, although I was not informed of the fact until afterwards. About five months after the operation she was troubled with persecutory delusions, which occasionally recurred for a year or two. This patient, 41 years of age, did not suffer from flushings. In 6 cases in the old tables amputation was made below the os internum: adding 84 and 90, the total will be 8. In the remaining 4 there was uncertainty about the level. The gross percentage of cases in this group, where the menopause was complete with severe symptoms, is 35, or 14 per cent. in the whole series. It will be seen that the percentage is much lower in the second and third groups, where the patient was not deprived of all ovarian tissue.

### GROUP II.

*One ovary saved.*—Thirteen cases come under this heading—namely, Cases 62, 63, 66, 72, 74, 76, 79, 80, 88, 39, 95, 98, and 100. Age: One 28 years old (Case 100); three between 35 and 40 (Cases 76, 80, and 98); six between 40 and 45 (Cases 63, 66, 74, 79, 89, and 95); and three between 45 and 50 (Cases 62, 72, and 88). Married or single: Five married (Cases 62, 66, 72, 95, and 98), and eight single (Cases 63, 74, 76, 79, 80, 88, 89, and 100).

*Results.*—1. Menopause neither immediate nor complete: 8 (Cases 62, 63, 66, 72, 79, 80, 89, and 89). 2. Menopause complete, no symptoms: 4 (Cases 74, 76, 95, and 100). 3. Menopause complete, distinct, but mild: 1 (Case 88).

*Analysis of the eight cases where the menopause was neither immediate nor complete.*—Age: Two between 35 and 40 (Cases 80 and 98), four between 40 and 45 (Case 63, 66, 79, and 89), and two between 45 and 50 (Cases 62 and 72). Married or single: Four married (Cases 62, 66, 72, and 98) and four single (Cases 63, 79, 80, and 89). Hæmorrhages: Severe and very chronic, Case 62; moderate menorrhagia associated with adenomatous polypus, Case 80; menorrhagia, Cases 63, 72, and 89; none in Cases 66, 79, and 98. Size of tumour: Very large in Case 66 (15 lb., peritheliomatous elements); large in Cases 63, 79, and 98; moderate in Cases 62 and 80; small in Cases 72 and 89. Line of amputation: Above the os internum in six (Cases 66, 72, 79, 80, 89, and 98) and below in two (Cases 62 and 63). Condition of ovary removed: In one case (Case 89) the left ovary was cystic and the cyst contained a hæmatolith, a perfectly flat triangular body, with a base three-quarters of an inch long. There had been much menorrhagia in this case, but neither pain nor ovarian tenderness. In the 7 remaining cases (Cases 62, 63, 66, 72, 79, 80, and 98) one ovary was sacrificed either to facilitate hæmostasis or because the corresponding broad ligament was opened up and damaged. Menopause symptoms in these cases: In Case 63, where the line of amputation was below the os internum, there were distinct flushings for several years. It is not quite certain that this case should come under this group, but I include it with the remaining seven because the patient declared that the show seen six months and also two years and two months after the operation was in both instances associated with molimen, and the flushings were in a certain measure periodical. In Case 62, where the line of amputation was also below the os internum, distinct show was seen three or four times after the operation, and for as long as six years at least there were occasional flushings with vertigo. The patient at the date of operation was still menstruating regularly, although 49 years old. In all the remaining 6 cases some endometrium was left behind. In Cases 66, 80, and 89 the period continued regular for several years. In Case 66, where the operation described elsewhere was very severe, the period continued for three years and then ceased; I saw the patient two years after the menopause, there had been no neuroses of any kind. In Case 80 the periods were quite regular, although scanty, four years after the operation; there had been no flushings. In Case 89 the condition was precisely similar three years after the operation. In Cases 72 and 98 the periods continued for a few months and there were flushings rather severe, and in Case 98 associated with headache. In Case 79 the periods remained quite regular for one year, and then the menopause came on slowly without any disagreeable symptoms.

*Relation to cases in the old tables.*—As in the new tables, eight cases came under this group, Cases 19, 34, 39, 43, 51, 52, 57, and 60. In all there was persistence of menstruation for a distinct period as in Cases 66, 80, and 89. Case 51 was remarkable, as the periods were regular for 16 months, then the show never reappeared, but a regular periodical molimen continued for at least a year and a half. In seven cases in the old tables the line of amputation was above the os internum, making with the six in the new tables a total of 13 per cent. In the remaining case there was some uncertainty about the level of amputation. The gross percentage of cases under this group is 16. However, another group collected from the old tables has been suppressed as not strictly necessary: I mean instances where the catamenia appeared after operation but were irregular, 5 in all.[13] Such cases are here included under "menopause neither immediate nor complete." In all 5 the line of amputation was above the os internum, making a total of 18 per cent. The gross percentage of cases where one ovary was saved and the menopause was neither immediate nor complete, the periods continuing either regular or irregular, amounts to 53·8 in this group, and 21 in the entire series. I may add that in one of the 5[14] added to the group as at present arranged, the same phenomenon was noted, such as I observed in Case 51. The periods were regular for some time after operation,[15] then the show of blood ceased, but for at least two years after its cessation the menstrual molimen recurred with perfect regularity. In Case 81, belonging to Group III., there was a similar but shorter persistence of molimen.

*Analysis of the four cases where the menopause was complete without symptoms.*—Age: One between 25 and 30 (Case 100), one between 35 and 40 (Case 76), and two between 40 and 45 (Cases 74 and 95—both 41). Married or single: One married (Case 95), and three single (Cases 74, 76, and 100). Hæmorrhages: Severe in one case (Case 76), and slight (distinct menorrhagia) in three cases (Cases 74, 95, and 100). Size of tumour: Very bulky, not weighed in one case (Case 76), 6 lb. in Case 74, 3 lb. 2 oz. in Case 95, and 1 lb. 2 oz. in Case 100. Line of amputation: Above the os internum in all four cases. Menopause symptoms: Flushings and headaches did not trouble any of the four cases. In Case 76 there was, four years after the operation, occasional tympanitic distension of the abdomen, probably due to dyspepsia. Case 74 deserves some notice. The patient was a single woman aged 41 years. She had been in weak health all her life, and latterly very subject to tonsillitis, for which she placed herself under the care of Dr. A. C. Tucker of Barnsbury. She admitted to him that she had frequent attacks of tremors with profuse perspiration ever since she was 20, after he had noted that there was marked exophthalmos with distinct enlargement of the thyroid body; the pulse was also unaccountably rapid. For nearly two years this patient was kept under appropriate treatment for the exophthalmos. At the same time abdominal swelling was observed; it developed into a well-defined tumour which extended for two inches above the umbilicus. The late Mr. Nunn advised operation. When the patient was admitted into the Samaritan Hospital in October, 1904, I found the exophthalmos marked, without nystagmus or defective sight. There were muscular tremors, and the pulse, even when the patient was kept quiet in bed, ranged from 132 to 140. Dr. C. Hubert Roberts examined her with me. Graefe and Stellwag's signs were absent; the thyroid body showed slight enlargement of the lateral lobes. The temperature never rose above 99° F. before operation. The patient's appetite was good; the tongue was rather glossy along the edges. I amputated the uterus above the cervix; the whole mass, which weighed 6 lb., consisted chiefly of a large interstitial fibroid; the left appendages were drawn up very high on the surface of the tumour and rotated to the right of the middle line. I was determined to save one ovary if possible owing to the patient's general condition, and was therefore well satisfied to find that the right ovary lay low down, quite outside the mass. In amputating the cervix I enucleated a large fibroid growth which had developed in the posterior wall of the uterus below the bigger fibroid and invaded the wall of the cervix. After the enucleation I passed the knife above the level of the os internum. Five years later the patient wrote to me saying that she had enjoyed good health ever since the operation, the periods had never returned, but no neuroses of any kind had developed. Dr. Tucker had recently detected renewed enlargement of the thyroid body and administered fresh thyroid tablets for two months, the enlargement steadily subsiding. The question of the relation of exophthalmos to the functions of the generative organs has recently been discussed by Pinard.[16] Condition of ovary removed: Normal in all four cases; sacrificed for surgical reasons.

*Analysis of the case where the menopause was complete with distinct but mild symptoms.*—Case 88. Age between 45 and 50. Single. Hæmorrhages: None, no menorrhagia. Size of

[13] Cases 17, 20, 24, 27, and 58. Case 20 was an instance where the periods continued for four years and perhaps longer, but there was amenorrhœa for six months in the second year. In Case 24 alone were flushings noted.

[14] Case 58.

[15] Not over six months; in Case 51 they continued for 16 months.

[16] "De l'Expression Symptomatique appelée Goitre Exophthalmique dans ses Rapports avec la Fonction de Reproduction chez la Femme," Annales de Gynécologie et d'Obstétrique, May, 1909, p. 257.

tumour: 2 lb. 5 oz., with a cyst in the left mesometrium (below ovary). Line of amputation: Above the os internum. Condition of ovary removed: Normal, but closely connected with the cyst in the mesometrium.

*Menopause symptoms.*—In Case 88 flushings and perspirations appeared in the third year, although there had not been a trace of show since the operation. They seemed to be associated with physical fatigue. On the other hand, the patient gained a stone in weight within three years, yet she had spit blood 15 years before the operation, and there were pulmonary complications during the first week after the removal of the uterus. It is not certain that the symptoms above noted were really due to suppression of the menstrual function.

*Severe menopause symptoms.*—Let it be remembered that in this subseries where one ovary was saved and the amputation carried above the os internum in 11 (all but 2 out of the 13) there was no instance of severe symptoms clearly attributable to the menopause.

*Relation to cases in the old tables.*—Once more I must explain that I have rearranged the groups of the "one ovary saved" series. In the older communication I included under one group all the cases where the menopause was complete and immediate after operation independently of menopause symptoms. The total was 15,[17] against 5 in the present group, Case 88 being added to Cases 74, 76, 95, and 100. In 8 of the old cases the line of amputation was above the os internum, as it was in all 5 of the new cases, making a total of 13 per cent. In 5 of the old cases the line was below. The total percentage of cases where the menopause was immediate and complete is 46·1 in this group and 18 in the entire series. Lastly, whilst in the group "both ovaries removed" in no less than 14 per cent. of the series, or 35 per cent. of that group, the menopause was complete with severe symptoms, in this "one ovary saved" series the percentage is 0, unless we consider that Cases 22, 32, 45, and 48 where sharp flushings occurred should be included under severe cases.

### GROUP III.

*Both ovaries saved.*—Fifteen cases come under this heading—namely, Cases 65, 67, 68, 70, 71, 75, 82, 83, 85, 86, 87, 91, 92, 94, and 97. Age: One between 25 and 30 (Case 67), one between 30 and 35 (Case 71), three between 35 and 49 (Cases 65, 86, and 97), four between 40 and 45 (Cases 68, 70, 85, and 94), four between 45 and 50 (Cases 82, 83, 87, and 91), and two over 50 (Cases 75 and 92). Married or single: Eight married (Cases 68, 70, 71, 75, 82, 83, 86, and 91) and seven single (Cases 65, 67, 85, 87, 92, 94, and 97).

*Results.*—1. Catamenia regular after operation: 5 cases (Cases 67, 71, 85, 86, and 97). 2. Catamenia soon suppressed: 2 cases (Cases 68 and 91). 3. Menopause complete and immediate after operation: 8 cases (Cases 65, 70, 75, 82, 83, 87, 92, and 94).

*Analysis of the five cases where the catamenia were regular after operation.*—Age: One between 25 and 30 (Case 67), one between 30 and 35 (Case 71), two between 35 and 40 (Cases 86 and 97), and one between 40 and 45 (Case 85). Married or single: Two married (Cases 71 and 86) and three single (Cases 67, 85, and 97). Hæmorrhages: Severe in Cases 71 and 85; moderate in Case 86; none in Cases 67 and 97. Size of tumour: Bulky, reaching nearly to the umbilicus, Cases 71 and 97; weight 2 lb., Case 67; 1 lb. 2 oz., Case 86; 1 lb. 1 oz. (bleeding), Case 85. Line of amputation: Above the os internum in all five cases.

*Catamenial history after operation.*—In no less than four cases the periods were still regular according to the last report in Cases 71, 85, 86, and 97; that is to say, they continued for at least five years in Case 71, for at least three years in Cases 85 and 86, and for at least two years and one month in Case 97. In one case they continued regular for well over one year and then became irregular, but had ceased before the date of the last report; this was Case 67. The last period was observed about four years and nine months after the operation: it was unusually free. For several months in the third year there was bleeding from the left nostril about every three weeks, but the patient informed her physician, Dr. D'Esterre, that she felt queer at monthly times though there was no show, and the epistaxis, although regular, was not synchronous with the molimen. This fact makes me distrustful about taking periodical bleedings beyond the area of the genital tract for "vicarious menstruation." I shall return to the subject when I relate the after-history of Case 82. In the fifth year this patient, Case 67, suffered from occasional but irregular attacks of pain in the left breast.

*Relation to cases in the old tables.*—In three cases (Cases 21, 49, and 53) both ovaries were saved and the catamenia remained regular more or less for over two years. In Cases 21 and 49 amputation was above the level of the os internum, in Case 53 there was some doubt about the level. In the two cases where there was no doubt about it the periods were still quite regular three years after the hysterectomy, whilst in the third, Case 53, the periods were regular at the end of the same space of time, but there had been amenorrhœa for three months in the second year after operation.[18] Thus in eight out of the 21 cases in this group, or over 38 per cent., making 8 per cent. in the whole series, both ovaries were saved and the periods continued for over two years after the operation.

*Analysis of the two cases where the catamenia were soon suppressed.*—Age: One between 40 and 45, Case 68; and one between 45 and 50, Case 91. Married or single: Both married. Hæmorrhages: Moderate in Case 91, and none in Case 68. Size of tumour: Large lobulated tumour, Case 91; 2 pound tumour, Case 68. Line of amputation: Above the os internum in both cases.

*Catamenia after operation.*—In Case 68 the periods continued regular for over a year and then ceased altogether; the patient, lean at the time of the operation, grew stout. There were no neuroses of any kind, and the patient's health was quite satisfactory four years after the operation. In Case 91 the patient was highly neurotic, and on that account I was anxious about preserving both ovaries and a piece of endometrium, and I was able to do so although one of the lobes burrowed into the right broad ligament. The patient, although 47 years old, had been perfectly regular until the operation, but from experience I find that a sudden artificial menopause induced near the climacteric may be as severe as when induced in a young subject. Her medical attendant, Dr. T. G. Styan of Ramsgate, carefully watched the case after operation. The phenomenon observed in Cases 51 and 53 in Group II. was present in this instance. Irregular show was observed at least three times, whilst fulness of the breasts, always associated with the periods before the removal of the uterus, occurred very regularly every month for a year and a half. Then they ceased and the patient suffered for a time from depression of spirits with irritability of temper; there were no flushings. The neurosis soon passed away, and the patient within three years after the operation felt free from all physical or mental discomfort. Had the operation been less conservative I suspect that the neuroses would have been more marked.

*Relation to cases in the old tables.*—As in the present tables, there were two cases in which the catamenia were soon suppressed. In Case 40 the period occurred three times after the operation and ceased abruptly, in Case 46 they continued for 18 months and also ceased abruptly, and as in Case 68 the sudden menopause was not associated with any neurosis. In Case 40 the line of amputation passed above the os internum, in Case 46 there was some uncertainty about the level of amputation. Thus, in 4 per cent. of the entire 100 cases, or over 19 per cent. in this group, both ovaries were saved and the catamenia were soon suppressed; neuroses were observed in only 1 out of the 4, and in that instance the patient was already neurotic.

*Analysis of the eight cases where the menopause was complete and immediate.*—Age: One between 35 and 40 (Case 65); two between 40 and 45 (Cases 70 and 94); three between 45 and 50 (Cases 82, 83, and 87); and two still menstruating, though aged, in one case 50 (Case 75) and in the other 52 (Case 92). Married or single: Four married (Cases 70, 75, 82, and 83) and four single (Cases 65, 87, 92, and 94). Hæmorrhages: Severe in Case 94; menorrhagia hardly severe in four cases (Cases 65, 82, 83, and 92) and none in three (Cases 70, 75, and 87). Size of tumour: 8 lb. 4 oz. in

[17] Cases 7, 8, 9, 11, 15, 18, 22, 32, 45, 48, 55, 56, and 59. In Case 11 flushings had been present before the operation.

[18] As in Case 20 in the "one ovary saved" series. In respect to these cases I noted in my first communication how they showed the importance of a fairly long after-history. At a year and a half both patients seemed to have reached the menopause. I have rejected several similar cases where the history could not be clearly traced for at least two years after operation.

*Subtotal Hysterectomy for Fibromyoma Uteri. Forty Additional Histories.*

| Case. | Date of operation. | Years of age, &c. | Character of fibroid. | Treatment of ovaries and line of amputation. | Date of last report. | Condition according to last report. |
|---|---|---|---|---|---|---|
| 61 | Feb. 19th, 1903. | 37, Md. | 11½ lb.; broad ligament opened up; hæmatoma of omentum, severe menorrhagia. | Both removed; above os internum. | May, 1909. | Strong and well, stouter; periods never seen since operation, flushings daily over face still. |
| 62 | March 3rd, 1903. | 49, Md.* | 2 lb. 6 oz., occupying whole posterior wall of uterus and cervix; metrorrhagia ten years; great anæmia. | One (left) saved; below os internum. | June, 1909. | Good health; show three or four times after operation; occasional flushings and vertigo still. |
| 63 | April 28th, 1903. | 43, S. | Bulky fibroid, extending above umbilicus and down into pelvis; menorrhagia. | One (right) saved; below os internum. | February, 1907. | Fair health, obesity; distinct show twice since operation; occasional flushings and vertigo still. |
| 64 | Oct. 15th, 1903. | 44, Md. | Fibroid, size of Tangerine orange, enucleated from anterior wall of supravaginal cervix; severe metrorrhagia, double aortic disease (see text). | Both removed; above os internum. | August, 1910. | Fair health, obesity; periods continued regular for two years; no flushings or other neuroses. |
| 65 | Nov. 12th, 1903. | 38, S. | 3 lb., hard, extending into pelvis; broad ligament invaded; menorrhagia, pressure symptoms. | Both saved; below os internum. | May, 1909. | Good health, gained flesh; no periods since operation, no flushings. |
| 66 | Dec. 12th, 1903. | 40, Md. | 15 lb., cystic perithelioma; rapid increase, tapped once; no menorrhagia. | One (left) saved; right ovary fibromatous; above os internum. | May, 1908. | Good health, obesity; no sign of recurrence, periods regular three years, no flushings (see author and Lockyer, "Two Cases of Uterine Fibroid showing Peritheliomatous Changes," *Journal of Obstetrics and Gynæcology of the British Empire*, xiv., 1908, p. 320). |
| 67 | Jan. 7th, 1904. | 27, S. | 2 lb. oval fibroid, pressing on bladder; no menorrhagia; temporary insanity after influenza four years before operation. | Both saved (see text); above os internum. | June, 1909. | Good health; periods regular for nearly two years, last period four and three-quarter years after operation; periodical epistaxis for about a year, when periods were disappearing; occasional pain, left breast. |
| 68 | Feb. 10th, 1904. | 41, Md. | 2 lb., bulky, rapid growth; no menorrhagia. | Both ovaries saved; above os internum. | March, 1908. | Good health, obesity; periods continued for over one year, no neuroses. |
| 69 | April 21st, 1904. | 48, Md. | 3½ lb. fibroid of cervix, portio vaginalis invaded; no menorrhagia; periods still regular. | Both ovaries removed (double hydrosalpinx); below os internum. | March, 1910. | Good health; one show shortly after convalescence, no flushings. |
| 70 | June 3rd, 1904. | 40, Md. | 8 lb. 4 oz., rapid growth; no menorrhagia. | Both ovaries saved; above os internum. | August, 1908. | Good health; no periods since operation, no flushings. |
| 71 | June 14th, 1904. | 34, Md. | Bulky fibroid in anterior wall, undergoing myxomatous degeneration; severe metrorrhagia; thickened endometrium removed by curette one month before operation. | Both ovaries saved; above os internum. | May, 1909. | Good health, obesity; periods still regular, coloured show four-weekly; occasional flushings third year. |
| 72 | June 21st, 1904. | 49, Md. | 1 lb. 9 oz. multiple interstitial myomata; menorrhagia one year. | One ovary saved; above os internum. | June, 1909. | Good health; periods regular for seven months after operation, then within six months irregular flushings and complete menopause. |
| 73 | Oct. 4th, 1904. | 43, Md. | 4 lb. hard fibroid, pressing on bladder; cervix and broad ligament involved. | Both ovaries removed; below os internum. | July, 1909. | Good health; no periods since operation, flushings once or twice weekly for a year and occasionally still; dyspeptic. |
| 74 | Nov. 3rd, 1904. | 41, S. | 6 lb.; large mass, extending into posterior wall of cervix; menorrhagia (exophthalmos, tachycardia). | One ovary saved; above os internum. | May, 1909. | Very good health; no periods since operation. |
| 75 | Jan. 24th, 1905. | 50, Md. | 2 lb. 12 oz. hour-glass fibroid, dragging on bladder; no menorrhagia. | Both ovaries saved; above os internum. | May, 1909. | Sickly; no periods since the operation; flushings, perspirations, and debility, continuing till date of last report. |
| 76 | Feb. 14th, 1905. | 38, S. | Large fibroid reaching above umbilicus, rapid growth; severe menorrhagia. | One ovary saved; above os internum. | May, 1909. | No periods since operation, no flushings; dyspepsia, occasional tympanitic distension of abdomen. |
| 77 | June 1st, 1905. | 42, S. | Fibroid in anterior wall of uterus, another in left broad ligament; severe pelvic pain; menorrhagia. | Both ovaries removed; above os internum. | September, 1910. | Slight show four times since operation; severe flushings and headaches for several months over three years after operation, then insanity, following mental shock and influenza. |
| 78 | June 17th, 1905. | 36, Md. | 2¼ lb. "cystic perithelioma," rapid growth; emaciation, menorrhagia. | Both ovaries removed; above os internum. | February, 1908. | Good health, no sign of recurrence; no periods since operation, flushings one year (see author and Lockyer, loc. cit., No. 66). |
| 79 | July 6th, 1905. | 43, S.† | 8 lb. 2 oz., rapid growth, no menorrhagia. | One ovary saved; above os internum. | July, 1909. | Good health; periods regularly for one year after operation, last show about six months before date of last report. |
| 80 | Oct. 24th, 1905. | 35, S. | 2¾ lb.; menorrhagia (adenomatous polypus discovered in uterine cavity). | One (left) ovary saved; above os internum. | November, 1910. | Good health; periods regular but very scanty, no flushings. |
| 81 | Dec. 12th, 1905. | 44, S. | 7 lb. 2 oz. invading broad ligament; painful pressure symptoms; slight menorrhagia. | Both removed (corpus luteum hæmatoma in left); above os internum. | May, 1909. | Good health: no periods since operation, occasional flushings. |
| 82 | Jan. 23rd 1906. | 47, Md. | 7½ lb.; very firm pressure symptoms, menorrhagia (see text). | Both saved; above os internum. | July, 1908. | Fair health, plethoric (see text); parametritic abscess and sinus, no show of blood from vagina after operation; blood escaped from sinus (see text) regularly for three months, then irregularly with flushings; last show two years and four months after operation, then flushings ceased. |

* Still menstruating. † Sister to Nos. 6 and 12.

*Subtotal Hysterectomy for Fibromyoma Uteri. Forty Additional Histories (Continued).*

| Case. | Date of operation. | Years of age, &c. | Character of fibroid. | Treatment of ovaries and line of amputation. | Date of last report. | Condition according to last report. |
|---|---|---|---|---|---|---|
| 83 | Feb. 1st, 1906. | 46, Md. | 2½ lb., three lobes, one submucous; menorrhagia. | Both ovaries saved; below os internum. | October, 1908. | Fair health; no periods since operation, no flushings. |
| 84 | March 21st, 1906. | 38, Md. | Small three-lobed tumour; broad ligament opened up; pressure symptoms, no menorrhagia. | Both ovaries removed; below os internum. | June, 1909. | Good health; no period since operation, severe flushings and perspirations for a few months after operation. |
| 85 | May 15th, 1906. | 40, S. | 1 lb. 1 oz., multiple fibroids, some submucous; severe menorrhagia. | Both ovaries saved; above os internum. | May, 1909. | Good health; periods still present though scanty; flushings and faintness after each period till two years and five months after operation; obesity. |
| 86 | May 17th, 1906. | 38, Md. | 1 lb. 2 oz., spherical fibroid; menorrhagia. | Both ovaries saved; above os internum. | June, 1909. | Good health; periods still present and regular, occasional pains at periods, no flushings. |
| 87 | June 26th, 1906. | 45, S. | 2 lb. 1 oz.; increasing quickly; abdominal pains; no menorrhagia. | Both ovaries saved; above os internum. | May, 1909. | Good health, except dyspeptic pains; no periods since operation, no flushings. |
| 88 | June 28th, 1906. | 46, S. | 2 lb. 5 oz., pedunculated myoma and small interstitial myoma in anterior wall; cyst left mesometrium below ovary, dysuria, no menorrhagia; hæmoptysis at 31. | Right ovary saved; above os internum. | May, 1909. | Good health, gained weight; no advance of pulmonary symptoms; no periods since operation; recently occasional flushings and perspirations. |
| 89 | July 10th, 1906. | 41, S. | 1¼ lb., multilobular; left broad ligament opened up; pressure symptoms; menorrhagia. | One ovary saved, the other was cystic and contained large hæmatoma; above os internum. | June, 1909. | Quite well; periods regular, though scanty, no flushings. |
| 90 | July 17th, 1906. | 41, Md. | 3¼ lb., cervix involved, rapid growth; abdominal pains, dysmenorrhœa, no menorrhagia. | Both removed (cystic); below os internum. | June, 1909. | Good health, obesity; no periods since operation. |
| 91 | Oct. 29th, 1906. | 47, Md. | Large multilobular fibroid; no menorrhagia. | Both ovaries saved: above os internum. | June, 1909. | Good health; periodical molimen (see text) for a year and a halt, with show on three occasions; then "depressed spirits" for a month or two, no flushings. |
| 92 | Nov. 20th, 1906. | 52, S. | Mass of interstitial fibroids; pressure symptoms and menorrhagia. | Both ovaries saved; above os internum. | March, 1910. | Good health; no periods after operation; no neuroses. |
| 93 | July 16th, 1907. | 50, Md. | Highly-lobulated fibroid, left mesosalpinx opened up; adhesions to mesentery, chronic obstruction; periods still present, becoming irregular. | Both ovaries removed; above os internum. | January, 1910. | No periods since operation; no menopause symptoms (see author, "Chronic Intestinal Obstruction due to Adhesions of a Uterine Fibroid to the Mesentery," THE LANCET, Nov. 9th, 1907, p. 1309). |
| 94 | July 23rd, 1907. | 42, S. | 2 lb. 6 oz., uterus infested with small fibroids; menorrhagia, recently amenorrhœa; great anæmia. | Both ovaries saved; above os internum. | August, 1909. | Good health, gained colour and flesh; no periods since operation; moderate flushings three to five months after operation; occasional tenderness in region of right ovary. |
| 95 | July 28th, 1907. | 41, Md. | 3 lb. 2 oz., rapid growth; menorrhagia. | One ovary saved; above os internum. | July, 1909. | Good health; no periods since operation, no flushings. |
| 96 | Sept. 22nd, 1907. | 38, Md. | Polypus (adenoma) removed January, 1906; hæmorrhages, August, 1906, till operation; interstitial growth as big as a walnut, also a submucous adenoma. | Both ovaries removed; a little below os internum. | September, 1910. | Good health, obesity; no periods since operation; no menopause symptoms. |
| 97 | Nov. 5th, 1907. | 38, S. | Large sessile subserous tumour, 4 in. diameter, and smaller but similar tumour, both on posterior aspect of uterus; pressure symptoms, no menorrhagia. | Both ovaries saved; 1 in. above os internum. | December, 1909. | Good health; periods still regular, four-weekly, except on two recent occasions, when interval was only two weeks. |
| 98 | Jan. 21st, 1908. | 35, Md. | 4¾ lb., deeply lobulated, one lobe blocking Douglas's pouch; no menorrhagia. | Right ovary saved; above os internum. | January, 1910. | Good health; slight, regular periods for a few months after the operation; flushings and headache. |
| 99 | Jan. 28th, 1908. | 38, Md. | Fibroid size of turkey's egg on fundus, retroversion; right hæmatosalpinx, many adhesions; no menorrhagia; see "Hæmatosalpinx with Acute Symptoms following Retroversion of Fibroid Uterus," Proceedings of the Royal Society of Medicine (Obstetrical Section), i., p. 174. | Both ovaries removed; above os internum. | January, 1910. | Good health, gained flesh; no periods since operation, but severe hot flushes regularly for a few months, now about every two months and less severe. |
| 100 | Feb. 6th, 1908. | 28, S. | 1 lb. 8 oz. firm fibroid posterior wall, growth rapid; menorrhagia. | Left ovary saved; ½ in. above os internum. | February, 1910. | No periods after operation; no unpleasant symptoms. |

Case 70; 7½ lb. in Case 82; 3 lb., opening up broad ligaments, in Case 65; 2 lb. 12 oz., dragging on bladder, in Case 75; 2 lb. 10 oz. in Case 87; 2½ lb. in Case 83; 2 lb. 6 oz. in Case 94; and small in Case 92. Line of amputation: Above the os internum in five (Cases 70, 82, 87, 92, and 94) and below in three (Cases 65, 75, and 83).

*History after operation.*—In five cases (Cases 65, 70, 83, 87, and 92) there was no show of any kind, and none of the patients suffered from flushings or other neuroses. Cases 75, 82, and 94 deserve some consideration. Case 75, age 50, married 29 years; first husband lived 20 years; patient remarried shortly after his death; second husband still living. Never pregnant. Hæmorrhages: No metrorrhagia. Notwithstanding the patient's age, the periods were absolutely regular, there was free show for about three days associated not with pain, but with a feeling of languor. Size of tumour: A large lobular mass weighing, with uterus, 2 lb. 12 oz.; the anterior lobe sprang from the anterior wall, the posterior from the posterior wall of the uterus. The posterior lobe had fallen back into Douglas's pouch which it filled, the cervix was raised high up behind the pubes, and the anterior lobe tipped upwards so as to drag on the bladder. Its upper limits lay within three inches of the umbilicus. Line of amputation: Below the os internum.

*Catamenial history after operation.*—In May, 1909, the patient, in reply to my inquiries, wrote: "I have not seen any monthly period since my operation. I suffer very much with flushings and perspirations of the face and lower parts, at times." She also had bleeding hæmorrhoids and neglected pyorrhœa alveolaris. Before the operation this

patient was a stout woman, with suborbital pigmentation and marked pyorrhœa, which, as above stated, she neglected after convalescence. She had never suffered from any serious illness. The pulse and temperature were normal. She had been under Mr. A. C. Butler-Smythe's observation for a few weeks owing to extreme dysuria caused by the falling back of the tumour, as above mentioned. The operation was not very easy owing to the shape of the mass; there was a heavy drag on the broad ligaments which were clamped and divided, then the tumour was drawn out of the wound, but I was obliged to amputate low down, below the os internum. The after-history is mainly of interest in respect to the conditions noted above as reported before the operation. The patient's menopause was belated; perfectly regular up to the date of operation, it never reappeared afterwards. The pyorrhœa could not fail to have a bad influence on the patient's health, but one fact remains—namely, the appearance of characteristic flushings such as are observed both in healthy and in sickly women in the natural, and also in an artificial, menopause. In my reference to Kelly and Cullen's opinion on the question under consideration, I explained how I thought it advisable to record instances of late artificial menopauses of which Case 75 was an eminent and instructive example. Many natural menopauses in healthy women are more severe, and a subject with pyorrhœa cannot be called healthy. Would the flushings have been milder or absent altogether had the amputation been made above the os internum? Would they have been more severe had the ovaries been removed? I feel fairly sure that a positive reply may be given to the latter question. The former, however, cannot be solved; we cannot calculate how far age and the disease existent at the time would prove disturbing factors, however beneficial the saving of the endometrium might be. Kelly, as I have explained, has recently introduced a method of operation designed to preserve endometrium. I hold it very important that late artificial menopauses, as well as earlier ones, should be carefully reported if we desire a thorough knowledge of the value of this conservative step, one of the main questions to which I have turned attention in this communication, and on that account I have dwelt on Case 75 at some length.

In Case 82 a troublesome complication occurred which raises once more the question of vicarious menstruation. Age 47, married 30 years, two children and one abortion; the second child was 27 years old; the abortion occurred a year earlier. The patient was robust, plethoric, and subject during recent years to attacks of vomiting. The urine occasionally contained a trace of albumin. Catamenia occurred every three weeks, lasting for nine days; the show was very free and clots were expelled after attacks of pain compared by the patient to those of parturition. Size of tumour: It was multilobular; one lobe reached to the left hypochondrium. I operated in January, 1906. When the big lobulated mass was drawn out of the abdominal wound I met with some difficulty in reaching the front of the cervix owing to the presence of two subserous fibroids projecting from the lower segment of the uterus. I made a serous flap by dividing the peritoneum over the fibroids horizontally and turning it down. The uterine arteries were then secured, but in reaching the right artery and vein, the parametric connective tissue, hyperplastic and hyperæmic, was unavoidably subjected to much handling. I amputated the uterus a little *above* the cervix. The stump, which was not very fleshy, was covered over with the serous flap, No. 3 Van Horn catgut being employed. The right parametrium suppurated and the abscess was opened by an incision in the right groin on March 9th.

*History after operation.*—No show of blood passing from the vagina was ever observed after the operation. The sinus gave great trouble, and in the last weeks of July, August, and September, 1906, about the time that the period was due, the patient noticed that blood issued freely for several days from its orifice. Flushings with sensations of fulness in the head came on. On March 18th and April 17th, 1908, blood began to escape from the sinus and to discharge steadily for three days, ceasing abruptly at the end of that space of time. In the week ending May 23rd, 1908, the same phenomenon occurred when the patient was under my observation. The flushings then ceased, and I understand that the periodical discharge of blood has not recurred. The patient's general health remained good, although there was some œdema of the right leg, but the plethora and stoutness were more marked than before the operation, when I last saw her in the summer of 1908.

I think it right to record this case where the after-history was somewhat unsatisfactory. I do not think that the infection must have certainly been derived from the piece of endometrium left in the stump. The tissues in the right parametrium were opened up and the catgut used for the flap probably carried infection into the parametric tissue. I had some trouble with catgut in other cases at the same time, and complications ceased when I discarded that which I had in store and made use of the same material from another stock. The more we learn through experience how to ward off infection the fewer will such cases become even when we spare some endometrium. Not many years ago the tolerably regular hæmorrhages from the sinus would have been reckoned by most gynæcologists as "vicarious menstruation." But in relating Case 67 I noted how Dr. D'Esterre reported that the molimen was regular for some time without show, whilst there were regular attacks of epistaxis, but the molimen and the epistaxis were not synchronous. In Case 82 there was no regular molimen, but the hæmorrhages recurred monthly for three months in the first and in the third year, being associated on the latter occasion with flushings. It is much more likely that the hæmorrhages in Case 82 were directly related to the catamenial function, but I am sure that no physiologist would feel certain about their precise signification.

Case 94: The patient was a single woman, aged 42 years. Hæmorrhages: Chronic menorrhagia, causing great anæmia; more recently no regular period, but irregular passage of clots. Size of tumour: A bilobed, hard mass occupying the right iliac fossa; the outer was a subserous spherical fibroid about 2 inches in long diameter, the inner being the body of the uterus infested with small interstitial fibroids; there were also three small growths of the submucous type all fibromyomatous. No adenomatous polypus existed. The whole weighed 2 lb. 6 oz. Line of amputation: Above the os internum.

*Catamenial history after operation.*—I examined the patient two years and one month after the removal of the tumour. There had been no period since the operation. In the course of the first year she had lumbar pains like the molimen which occurred at the beginning of the normal periods before her illness, but this molimen was never regular for several months as in Case 91. At the same time there were occasional flushings. Whilst these phenomena were present the anæmia caused by the hæmorrhages from the fibroid steadily disappeared, the patient's complexion became rosy, and she gained flesh without growing corpulent. The right ovary was slightly enlarged and tender to the touch. The flushings were probably associated with the changes in the circulation due to the removal of the sole cause of anæmia. The same symptom, but far more severe, was present for a time after operation on one of the worst cases of bleeding fibroid I have ever had under my charge, but as it must be numbered 102 in my series of hysterectomies for fibroid with authenticated after-histories, it could not be included in these tables. The patient was greatly reduced by periodical bleedings which had gone on for nine years. Both ovaries were removed, being diseased; the uterus was amputated above the level of the os internum. For a few months flushings with "attacks of a very cold sensation" gave trouble but completely disappeared, and the patient, 44 years of age, was in good health two years after the operation. This case is not under the same group as Case 94, but in both the sudden stoppage of prolonged hæmorrhages have to be taken into account.

*Relation to cases in the old tables.*—Only one case (Case 50) came under the present group. There was a little show of blood for five weeks about 14 months after the operation, but this show could hardly be reckoned as catamenial. Nearly one year later it had not recurred. The patient was then under the impression that she occasionally felt a slight molimen. She was only 30 years of age when the uterus was removed. This case is really akin to Cases 65, 70, 83, 87, and 92; the molimen, however, should, I suspect, be better ranked as a neurosis. Thus in 9 per cent. of the 100 cases, or in over 42 per cent. of this group, both ovaries were saved and the menopause was complete and immediate. Altogether the results were favourable, though in three (Cases 75, 82, and 94) troublesome symptoms

developed, but certain complications had to be taken into account.

*Summary of the Complete Series of 100 Cases.*

In 40 cases, or 40 per cent., *both* ovaries were *removed*, and the menopause was neither immediate nor complete in 4; in 3 out of the 4 the amputation was above the os internum. In 39 cases, or 39 per cent., *one* ovary was *saved*, and the menopause was neither immediate nor complete in 21; in 18 out of the 21 the amputation was above the os internum. In 21 cases, or 21 per cent., *both* ovaries were *saved*. The menopause was neither immediate nor complete in 8; in 7, possibly all, of the 8 the amputation was above the os internum.

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## GANGRENE OF LIMB DURING CONVALESCENCE FROM DIPHTHERIA.

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BY diligent search in the libraries of the Royal Society of Medicine and of the Royal College of Surgeons of England it has been possible to find records of nine cases of gangrene following diphtheria. We do not mean gangrene of the parts near the situation of the disease, such as sloughing of throat or tonsils; we refer to gangrene of parts distant to the disease, such as of a limb. That such occurrence is very rare is proved by the fact that Dr. F. F. Caiger of the South-Western Fever Hospital in 17 years' work had never heard of a case, as well as by the paucity of records in the literature. In consequence it struck us that it would be a useful work to collect, together with our case, the various items of knowledge of this rare event, so widely scattered through the literature, making nine cases in all. In connexion with this we acknowledge our thanks to Dr. J. D. Rolleston of the Grove Hospital, Tooting, for the details in his letter to Dr. Caiger.

The gangrene in the cases mentioned above was connected with a definite vascular lesion. In seven cases the lesion was a definite embolism; in one it is termed Raynaud's disease, and in two the origin is as obscure as the papers published in Madrid and Venice about 24–34 years ago, and now unobtainable. In no less than 6 out of the 9 cases the leg was affected; in one there were widespread gangrenous lesions in addition. In two other cases there was a widespread necrotic affection. Thus it would appear that in 6 out of the 9 cases the gangrene was due to a vascular lesion, and that in 2 it was due to a vascular lesion with the addition of an infective or septic character in the embolus. In only one case, that which we now record, was the diphtheria treated with antitoxin. The majority of the patients naturally were children.

The origin of these emboli seems to be in the auricles, particularly the left auricle, because in only one case was there also a pulmonary embolism. The embolus occurs during convalescence, at the time of reaction from the illness; in our case on the seventeenth day of the illness. It seems to occur only after a severe diphtheritic attack. Subsequently to the embolism the temperature rose to 99·8°F. from subnormal, to which level it subsided, rising again in a few days' time from septic absorption from the gangrenous part.

It is a curious fact that surgically the femoral or popliteal artery can be ligatured in young subjects without causing gangrene. And yet a post-diphtheritic embolus should cause gangrene. The difference must be due to a thrombus extending from the embolus; and in diphtheria, we would suggest, a arteritis, having arisen from endarteritis, preventing the dilatation of the branches to form an anastomotic circulation and aiding the extension of the thrombus; in addition there is the dystrophy of the diphtheritic paralysis and the possibly infective condition of the embolus.

We will give a full account of our case first and then reproduce briefly those obtainable from the literature.

*Diphtheria; threatened cardiac failure; albuminuria; paralysis; gangrene of foot; amputation of leg; recovery.*—The patient was a boy, aged 6 years. The illness began on Nov. 28th, 1908, with shivering and vomiting. On the 29th the throat was sore but no membrane was visible. On the 30th there was a thick membrane on the throat. 4000 units of antitoxin were injected and the patient was removed to Southgate Isolation Hospital. Dec. 1st: Antitoxin, 4000 units injected. 4th: A piece of tough blood-stained membrane, 2 inches by 1 inch, was syringed from the throat. 5th: Vomiting and pains in the stomach. 12th: The patient vomited for four hours and was threatened with collapse and cardiac failure. The pulse could not be felt and the extremities were cold and the condition remained much the same for three hours. There was gradual improvement during the night, but no nourishment could be retained. 13th: The vomiting still persisted. All nourishment by mouth was stopped except water given in a spoon occasionally. 14th: Nutrient enema of eggs, milk, and brandy given every four hours. 15th (seventeenth day): Very acute sudden cramp in the right leg, the patient screaming with agony. Hot flannels and bathing in hot mustard-water gave temporary relief. 16th: Cramp at frequent intervals, relieved by laudanum fomentations. 17th: The right foot and leg were slightly discoloured in patches, giving the appearance of bruises. 18th: The patches of discolouration over the right foot and leg up to the knee were more marked and were purple in colour, the patches over the foot and lower part of the leg being larger and darker than those higher up. The urine was very scanty; albumin ½. Taking milk from spoon. 19th: Nutrient enemata discontinued. Albumin ¾; no vomiting. 22nd: Albumin down to ½ again. The patches of discolouration at the upper part of the leg were beginning to fade and subside, while those over the foot and lower part of the leg were larger and deeper in colour. The leg was tender. 24th: No albumin. The leg was kept wrapped up in wool. 25th: A little chicken and vegetable given. 28th: The patient was feeding well, taking three eggs daily. The discolouration of the leg had practically subsided down to below the juncture of the middle and lower third of the leg and foot. The patches over the foot and the lower part of the leg had coalesced so that the foot was one even purple colour. Jan. 1st, 1909: The patient complained of pain in the foot and leg; he kept the leg flexed and lying on its outer side, and resented its being touched. 3rd: A blister appeared on the ankle, and the toes were black, dry, and shrivelled. 4th: Fluid nourishment produced coughing. The voice was very nasal, and the general condition very paralytic. 5th: The patient was very weak and he seemed to be sinking. He had great difficulty in swallowing, especially solid food. 7th: The patient was gradually improving, but the pulse, which had been very rapid all along, was still so—130 to 160. He slept well. 15th: Improvement maintained; well-marked line of demarcation at the junction of the lower and middle third of the leg, and sloughing rapidly immediately below the line of demarcation. 30th: The leg was amputated just below the knee. On Feb. 12th the stump had quite healed and the pulse was normal. The patient was in excellent health and was putting on flesh. On March 15th he was discharged.

During the operation, on the forty-sixth day after the embolism and the sixty-first of the illness, the popliteal artery was divided just above its bifurcation. Its lumen was free from clot; it was markedly small and the walls were thin. Hence the embolus was above the bifurcation of the popliteal artery, possibly in the femoral artery at the bifurcation of the superficial femoral. This is supported by the clinical observation that on the third day after the embolism (Nov. 18th) the discolouration reached the level of the knee. The discolouration receded from the knee as the anastomotic circulation improved, and finally established a line of demarcation three inches above the ankle. After the amputation the arteries in the stump were followed until they deliquesced. Their lumina were small but free from clot.

*Brief Details of Cases taken from the Literature of the Subject.*

POUPON. *Embolie de l'artère fémorale dans la convalescence de la diphthérie* (*Le Progrès Médical, 1883, p. 10*).—Patient, aged 7½ months, admitted on Feb. 17th, under the care of Dr. Bouchut for "croup." Tracheotomy on the same day by M. Launois. She was discharged March 2nd, with the wound completely closed, and in very satisfactory health. During her first stay in hospital the urine showed some

albumin, but there was none subsequently. Readmitted on March 13th with intense dyspnœa, fever, and facial pallor. She was said to have discharged some false membrane in the interval, but expectoration of masses of mucus are often mistaken for such by parents. There was no diphtheritic paralysis. Temperature 102° F.; respirations 40 per minute. Dulness at base of right lung. At this level there was a slight expiratory murmur with pleuritic rub. Dr. Bouchut diagnosed pulmonary embolism. Auscultation of the heart was not performed thoroughly on account of the respiration causing a considerable murmur over the tracheal wound which had reopened. Pulse 80. March 14th: Patient complained of pain over the right popliteal space. In the evening there were violet-coloured patches over the whole foot; they were of the size of a franc-piece and the violet hue was that of gangrene. The leg was cold and the pulsations in the popliteal, and even in the femoral artery were imperceptible. The temperature was 31° C. in the right leg and 37° C. in the left. Sensation was absolutely abolished at the level of the patches of gangrene. Next morning (March 15th) Dr. Bouchut diagnosed embolism of the popliteal artery. The child died an hour after his visit.

Necropsy permitted on leg only. In the crural artery, starting from the ring of the great adductor, and proceeding to the centre of the popliteal, a clot three centimetres long was found looking like a pencil. The clot was brownish-grey in colour and was not adherent to the wall. Here and there it showed clearer striæ. It occupied the whole lumen of the artery.

It seems clear that the clot in the femoral artery was due to an embolus around which the thrombus had formed, composing, as in all cases of this nature, almost the whole of the clot.

HYDE AND POWELL. *Case of Raynaud's disease following diphtheria (Brit. Med. Jour., 1886, vol. i., p. 203).*—Patient, aged 48 years, was admitted to Worcester General Infirmary on July 14th, 1884. He had been in the Royal Horse Artillery for 22 years, and was drill instructor to the police for six years. No illness except one or two "colds" from wet feet when on night duty. No syphilis, gout, or rheumatism. Family history good. On May 12th he reported himself ill with sore-throat. A week later he had sudden loss of voice, for which he was treated by a practitioner who said that he had diphtheria. During convalescence his nose became blue and swollen in one night, resembling "an overgrown mulberry." This was followed in a day or two by similar appearances in pulps of finger of the right hand and in the ears. In the following week the ring and little finger of the left hand were similarly attacked, causing pain. In three weeks the fingers were black along their entire length. The blackness then receded to the middle joints, where blebs formed between the sound flesh and mortified parts. Subsequently black patches formed on the second and third toes of the right foot and along its outer margin. His mouth and tongue became swollen and painful, the latter being livid and an ulcer forming near the lip. His nose was obstructed but was cleared by his sneezing out some tough brown matter.

Examination day after admission: Well built, fairly healthy looking; had lost some flesh and become weaker from illness. Hair grey; no arcus senilis, nor signs of general anæmia. Nose cold and livid. Edges of helices of both ears dark blue. Ungual, and part of middle phalanges of ring and little fingers of right hand were black, dried up, and completely mummified. The fingers of the left hand and both thumbs were cold, glossy, devoid of hairs, and of dusky red colour at the tips. Ungual phalanges of second and third toes of the right foot were also sphacelated. Sphacelated portions of fingers were separated from sound flesh by bullæ containing turbid serum. Physical examination showed chest normal. Radial, ulnar, and posterior tibial arteries normal. No paralysis, sensory or motor. Voice regained. Temperature normal. Urine contained little albumin, no casts or sugar. Blood showed increase of white corpuscles. Digestive functions good. Slight pain and tingling in fingers occasionally.

Improved rapidly under dietetic and tonic treatment. Went for change of air on Sept. 3rd. The gangrenous fingers were amputated on his return. Sloughs separated from ears on his return. Sloughs separated from ears and toes without interference, leaving granulating surfaces beneath which healed rapidly. Stumps of gangrenous fingers slow in healing; thumbs and ears still cold and discoloured, but he was well enough to resume work.

BRETON (M.). *Paralysie Méta-diphtérique. (La Médecine Moderne, Paris, 1902, Vol. XIII., p. 216. Société de Pédiatrie-Séance de 17 Juin, 1902.)*—M. Breton has had under his observation a little girl, aged 3 years, suffering from hemiplegia due to multiple embolism, the sequela of diphtheria. The child suddenly manifested paralysis of the right side, and at the same time livid patches, followed by gangrene, appeared on the left leg. The hemiplegia persisted for eight months, although the child had the power of walking—dragging the leg along. There had been present in this case without doubt endocarditis, cardiac thrombosis, and multiple embolisms.

VEDDER (JOHN). *Gangrene of the leg caused by embolism following diphtheria. (Transactions of Medical Society, State of New York, 1879, p. 259.)*—A boy, aged 8 years, whose health had been generally good. First visited on Dec. 21st, 1877. Diphtheria, severe attack, but prognosis favourable. Throat and nares covered with thick membranous deposit; profuse discharge from nose; breath offensive; slight constitutional disturbance; fever moderate. Was visited every day up to the 29th. A sister was taken ill with the disease meanwhile. Continued to visit her after convalescence was established in the boy. On the 31st there was nothing unusual in the boy's condition; convalescence progressing well. In the afternoon of the same day he complained of numbness and pain in the right leg from the knee downwards; pain mostly in the knee, and below that there was sensation of numbness. Leg cold and of waxy appearance. Knee only painful, and upon slightest motion. Pain could not be produced in the leg either by pinching or pricking with needle. Leg dead from knee downwards; it was white and cold. On the next day the leg was of light mahogany colour, which gradually grew darker till it was nearly black. The bottom of the foot became quite dark, dry, hard, and shrivelled up in a few days. Pulse slow and weak at right wrist; normal at left. Respiration good. Mind clear. Jan. 5th or 6th: Arm on right side paralysed. Jan. 6th and 7th: Slight paralysis of tongue and loss of speech. The boy died on Jan. 11th at 2 A.M. He was conscious during the whole illness till a few hours before death. Two days before he had complained of pain in the left leg when it was moved. The patient was of excitable temperament. No necropsy.

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# IMPORTANCE OF REMOVING THE UTERUS IN CERTAIN DISEASED CONDITIONS OF THE ADNEXA.[1]

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ALL gynæcologists of experience, and especially those of obstetric experience, appreciate fully the necessity of conservative surgery in dealing with diseases of the uterus and adnexa. For example, we perform myomectomy rather than hysterectomy, resection of the ovary and tube rather than removal of these organs in women who have not passed the reproductive age; and all of us, I feel sure, can give examples of pregnancies occurring and continuing to term after such operations. Only the other day a medical man informed me that a patient, upon whom I had operated two and a half years ago and where I was only able to save one tube and a small portion of the ovary, had given birth recently to a full-time healthy child.

Appreciating so fully the importance of conservative treatment of the organs we have to deal with, I think we occasionally fall into the mistake of not being radical enough in our operative procedures in those cases of extreme disease where it is obvious that nothing can be done by conservative measures. We are especially inclined, I think, to leave the uterus behind in certain ovarian and grave tubal conditions when we would obtain much better results, both immediate and remote, if we removed the uterus along with the diseased adnexa.

As far as one can judge at present, and the recent researches of Carmichael contributed to this society go to support this, the uterus is merely a bag for retaining the impregnated ovum. It contributes no internal secretion.

I now wish to direct attention to two diseases of the adnexa in which I believe it to be of the very greatest importance that the uterus should be removed along with the appendages. The two diseases I wish to refer to are malignant disease of the ovary and pronounced pyosalpinx.

### *Malignant Disease of the Ovary.*

The frequency of malignant disease in ovarian tumours is variously stated, but it would appear to be found in about 15–20 per cent. of all cases operated upon. In my own experience it has not been quite so high as this.

Within the last year or two it has become my custom in all doubtful malignant tumours, and in all double ovarian tumours, to remove the entire uterus along with these growths. My reasons for adopting this radical treatment are twofold. First of all the experience of other operators that more satisfactory results are obtained with such procedure, but particularly my own personal experience in a few cases, which I shall now very briefly refer to.

Two and a half years ago a patient with an ovarian tumour was sent to me and I opened the abdomen and removed the growth, and the pathologist reported it was a sarcoma. About a year later I had to remove the uterus for malignant disease; at the time of the first operation the uterus and other ovary appeared perfectly normal.

Another case was one in which I saw a patient who

[1] A paper read at a meeting of the Edinburgh Obstetrical Society.

had been operated upon for ovariotomy and who presented features of malignant disease of the uterus and surrounding parts nine months later; at the time of the first operation the surgeon had not deemed the condition malignant.

Twice I have seen a co-existing adeno-carcinoma of the uterus and carcinoma of the ovary. I show you here the coloured drawing of the second case, and you will observe at a glance that I could easily have removed the malignant growth of the one ovary and left behind the other healthy ovary with the uterus apparently healthy. Such a proceeding in this case would have been most unfortunate, for the malignant growth in the uterus would probably have been allowed to continue for some time before a second operation was thought of.

The real practical difficulty is in deciding in many cases when the growth of the ovary is malignant.

About six weeks ago I operated upon a lady for an ovarian tumour. It was connected with the left ovary and was burrowing down into the cellular tissue about the rectum; the other ovary was also diseased, and so I removed both ovaries and the entire uterus. I hardly thought the ovarian growth was malignant, but I had the specimen very carefully examined. I was greatly surprised to get the report from Dr. J. H. Teacher that a small portion of the growth showed evidence of early malignancy.

It is my practice now to remove both ovaries and the uterus in all growths that look malignant or suspiciously malignant, and to remove the entire uterus and ovaries in all bilateral ovarian growths where the ovaries are hopelessly destroyed.

*Pyosalpinx.*

The other condition to which I wish specially to refer is pyosalpinx. The cases of this group, however, which I intend dealing with are only those cases of extreme salpingitis. I will not refer at all to the milder cases of salpingo-ovaritis, in which portions of the ovaries and tubes can often be conserved, and where the operation is of no great difficulty.

In common with most gynæcological surgeons, it used to be my custom to remove the pus-tubes and leave the uterus behind. In many cases I found it extremely difficult to remove the tubes, and I very frequently ruptured them during the operation. My results were moderately satisfactory, for I had a mortality of about 10 per cent. What disappointed me, however, was that in not a few cases the patients continued to have a certain degree of abdominal uneasiness, and in one or two cases so great was this that I was compelled later to remove the uterus. It was chiefly for this reason that I abandoned this method of dealing with the condition.

During the last two and a half years I have in all cases removed the uterus along with the distended tubes. My results from such a procedure have been infinitely more satisfactory than formerly. Neither in my private nor in my hospital cases have I had a single death, and that in spite of the fact that I have had to repair tears in the bowel more than once, and on three occasions have been compelled to resect large portions of the gut. In carrying out the operation I have only twice ruptured the sac. I am quite prepared to admit that rupturing a pyosalpinx during operation is frequently attended with no ill-effects, for in so many cases the pus is sterile and the individual has become immune to the particular organisms present; still, in a few cases pus tubes contain most virulent organisms and these in a very active state. More particularly is this seen in cases where the salpingitis has followed a comparatively recent parturition.

About a year ago I removed with extreme difficulty the uterus and pus tubes in a case of pyosalpinx, which resulted from an infection after an abortion. The patient was lying in my ward in the Maternity Hospital for several weeks. Occasionally she was a little better and the febrile disturbances subsided, but for the greater part of the time she had a temperature of 100° to 101° F., running up sometimes to 102° and 103°. I removed these tubes and uterus without spilling any pus, and I was well pleased that I had succeeded in doing so, for the pus gave a mixed culture of streptococcus and bacillus coli.

In connexion with the spilling of pus, although it is very generally not of very serious moment as regards causing a general peritonitis, it is very apt to lead to the infection of the fresh abdominal wound, and we all know how important it is that the abdominal wound should heal without the slightest suppuration.

In dealing with pyosalpinx my practice is as follows. I make an extensive longitudinal incision; in such cases it is a great mistake to have one's incision too small. I then carefully pack off the intestines as far as I can with rolls of sterilised gauze. I then surround the wound completely with gauze and place a Doyen's retractor at the lower part and self-retaining lateral retractors at the upper part. My whole field of operation then and the abdominal wound are completely protected with gauze. I then carefully examine the condition of the uterus and tubes, and the relationship of the intestinal adhesions to these parts. Having done so, I seize the uterus with a volsellum forceps, so as to steady that organ. I next make up my mind which tube can be most easily dealt with, for in most of the cases I have found it best to go down the easy side and cut across the cervix, and approach the larger pus sac from below. In a few cases I have found it possible to separate each side and clamp off the broad ligament and remove the uterus, just as one does in an ordinary hysterectomy for fibroids, but that has been the exception. I have only twice bisected the uterus, and I am always loth to do this, because it also is infected. Where there are extensive adhesions—and in almost all my cases these have been present—I sponge off the intestine with gauze. Usually the intestines come off easily from the posterior wall of the uterus, but very frequently, indeed, the tubes are extremely intimately blended with the bowel.

The separation of the bowel from the pyosalpinx is often a matter of great difficulty. As I have already indicated, however, one side is usually easy of approach. Once or twice I have pushed down the bladder and cut across the cervix before attempting to separate the tubes. By that means, and by dividing the upper margin of the broad ligament, one is able to approach the sac from all sides, and that is a great advantage. It is very comparable to the homely operation of separating a postage stamp from an envelope without tearing the stamp. One can often do this if one can get round the edges of the stamp, while if one attacks it from below or above it tears across.

In dealing with pyosalpinx in this manner great care must be taken, after dividing the cervix and working up from below, that the ureter is not injured. I have once or twice had to dissect off the ureter from the sac, but undoubtedly the greatest difficulty is with the intestines, and several times I have injured them, sometimes so badly that I had to resect the gut. If one can satisfy oneself that there is only one loop of the bowel involved in the adhesions it is almost better, if the adhesions are extremely intimate, to clamp off the loop of bowel and remove the adherent piece of bowel along with the uterus, tubes, and ovaries. That, however, is often not possible, and so one must generally plod on with patience and separate off the bowel as carefully as possible, attacking it from all sides—sometimes from below, sometimes from the side, and sometimes from above. After the uterus and tubes have been removed the bowel involved in the adhesions should be carefully examined, and if there is any tear in the lumen of the gut that should be repaired in the ordinary way.

Here is a recent grave case of pyosalpinx upon which I operated:—

A married woman, aged 28 years, was admitted to my ward in the Western Infirmary on Jan. 19th on account of severe hæmorrhage and abdominal pain. These symptoms had been present for five months; prior to that time her menstruation was fairly regular, although she had suffered from premenstrual pain for many years. She had no family. Shortly after her marriage she had a severe cystitis. Upon bimanual examination the enlarged uterus was found retroverted and adherent to two elastic swellings which could be defined behind and to the sides of the uterus. The condition was diagnosed as double pyosalpinx. On Jan. 31st I opened the abdomen and found omentum, bowel, tubes, ovaries, and uterus all matted together in the lower part of the abdomen and pelvis. Having tied off a piece of omentum and separated some of the bowel adherent to the uterus and left appendages, I was able to get down the left side of the uterus and tie off its attachments. I then cut across the cervix and working up from below and from above separated the right appendages without bursting the pyosalpinx. Having tied off the uterus

and ovarian vessels I removed the uterus and both tubes. I then found that the appendix was involved in the inflammatory process and so removed it. I now examined very carefully the separated bowel, which I found to be intact. Finding, however, that the whole of the cæcum was very much damaged indeed I was afraid to leave it, and so I divided the small intestine just outside the ileo-cæcal valve and closed both ends of the gut by purse-string and Lembert sutures. I then performed a lateral anastomosis between the ileum and the middle of the ascending colon. I then divided the colon, closed the upper end, and removed the cæcum. I finally inserted a cigarette drain, bringing the end out through the vagina. I also packed the lower abdominal and pelvic cavity with iodoform gauze.

The patient was naturally extremely collapsed after the operation, which lasted two and a quarter hours. She soon rallied, however, with continuous saline rectal infusion. About ten days after the operation fæces began to come by the vagina in considerable amount, but I felt sure this was simply from a fistula in the rectum along the track of my rubber drain. This proved to be correct as there are now practically no fæces coming by the vagina, and the bowels are moving satisfactorily with the aid of mild purgatives.

Now I feel that if I had chanced it in this case and left the badly damaged loop of bowel the result would almost certainly have been unsatisfactory. It is of the greatest importance that the injured bowel should be dealt with in a thoroughly surgical manner. It is folly to leave a very much damaged loop of bowel.

But besides removing the uterus, ovaries, and tubes, the appendix should also be dealt with. In the cases that I have had I have found the appendix involved on many occasions, and I have removed the appendix many times. This part of the operation is usually not very difficult, as in most of the cases the appendix is only secondarily involved and can be separated from the adhesions. I need not, of course, say that occasionally the removal of the appendix is a matter of extreme difficulty.

Having removed the inflamed mass of uterus and tubes and the appendix, and having repaired or resected the bowel if it is very extensively damaged, the abdomen is closed. Upon a few occasions I have drained through the vagina, and always by means of a rubber tube surrounded by gauze. I would not, however, be dogmatic on this point; I have sometimes been a little doubtful about the advantage of draining in such cases. All the vessels are tied with catgut; the abdominal wound is stitched in layers with catgut and silkworm gut.

Naturally the operation is one of considerable length. In the last case I referred to, where, in addition to removing the uterus and pus tubes, I removed the appendix and resected the bowel, the operation lasted two and a quarter hours. In such cases the patients, as a rule, suffer from considerable shock, but the degree of shock depends not altogether upon the duration of the operation, but is influenced very largely indeed by the manner in which the anæsthetic is administered. The ideal anæsthetist, who keeps his patient "under" with a minimum of ether or chloroform, is an absolutely invaluable assistant to the surgeon. Putting aside the surgeon's skill and dexterity and the ideal anæsthetist referred to, the next most valuable aid to the recovery of the patient in these extensive operations is a nurse who can superintend the administration of the continuous saline infusion. I am convinced of the great benefit of continuous saline rectal infusion after these difficult and prolonged operations. If all these precautions are carried out—if the uterus and tubes are removed without spilling any pus, if the injured gut is carefully resected when it has been seriously damaged, if the anæsthesia has been ideal, and if continuous saline infusion is employed—the mortality from these most difficult operations should be very low indeed.

I am very glad to be able to report that neither I nor my assistant, Dr. D. Dickie, have lost any case treated as I have described during the last two and a half years. I am well aware that a few gynæcological surgeons in this country—for example, Wilson of Birmingham—and some in other countries, have advocated a similar line of treatment. This paper is brought forward in support of the treatment, and I trust it will become more commonly practised—this radical operation for grave forms of pyosalpinx.

Glasgow.

# THE ASSOCIATION OF DUODENAL ULCER WITH APPENDICULAR DISEASE.

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SINCE Dr. W. J. Mayo called my attention to the frequency with which chronic appendicular disease is associated with gastric symptoms I have been struck with the frequency with which appendicular disease coexists with duodenal ulcer. I have found, in going over my notes for the last three years, that obvious appendicular disease was also present in 66 per cent. of the cases in which I have at operation found duodenal ulcer. In none of these cases was there any clinical reason to suppose the existence of disease of the appendix.

This association seems to me to be too frequent to be regarded as a mere coincidence and suggests that appendicitis may be one of the causes of duodenal ulcer. Why appendicular disease causes duodenal ulcer may not be easy to explain. There is a certain amount of evidence that gastric ulcers are toxic in origin, and I think it is quite possible that duodenal ulcer is the result of toxic absorption from the appendix or even from the large intestine.

It is now definitely established that appendicular disease does produce definite gastric symptoms, a condition for which I have suggested the term "appendicular gastralgia." Examination of the gastric mucosa in these cases often shows an extreme degree of erosion. It is possible that this condition is the prelude to definite ulceration of the stomach or duodenum. The sequence of events is this—appendicular disease; secondarily, erosion of the gastric mucosa; then superficial ulceration (the so-called "medical ulcer"); and later, a recognisable indurated ulcer.

I have had a patient under my care during the past year, the clinical details of whose case are very suggestive.

The patient was a lady, 42 years of age, sent to me by Dr. Stanley L. Box. Sixteen years before I saw her she had peritonitis, and was ill for months. A year later she had "ulceration of the bowels." Two years after that she began to suffer from gastritis, and a few years later she had hæmatemesis. In January, 1909, she was taken ill, suddenly, with violent vomiting, hæmatemesis, and melæna. Notwithstanding careful dietary and rest in bed, she did not lose her symptoms. She was seen by Dr. Soltau Fenwick, in consultation with Dr. Box, and a diagnosis of appendix trouble was made. I opened the abdomen, carefully explored the stomach and duodenum, and could find no evidence of gastric or duodenal ulcer. She had an enormously large appendix, measuring 3½ inches in circumference, and containing three large foul-smelling concretions. After the removal of the appendix (October, 1909) she was better, but still suffered from acidity. For some months she remained fairly well, and then—in May, 1910—became suddenly worse, and brought up about a pint of bright blood. In July she had several attacks of hæmatemesis and melæna, two of them severe. The pain and the hæmorrhage pointed so strongly to duodenal ulcer that in September, 1910, I again opened the abdomen, and on this occasion found a duodenal ulcer adherent to the liver. A posterior gastro-jejunostomy was performed, and the patient has been completely relieved of all her symptoms.

I have little doubt that in this case a superficial ulcer, which could not be felt, existed at the time of the first operation. The ulcer persisted, and in due time became thickened, so that at the second operation it was palpable as well as recognisable by sight.

Most of the patients suffering from appendicular gastralgia are cured by appendicectomy, but in from 10 to 12 per cent. of the cases, operation is not followed by complete relief. It is possible that the above case affords the explanation. An ulcer may already exist, although it cannot be felt by an external examination of the duodenum. This possibility raises the question whether in these cases a gastro-jejunostomy should be performed as well as appendicectomy. Personally, I am of the opinion that a gastro-jejunostomy should not be performed, unless there exists a definite ulcer which can be seen and felt. I quite admit that it is disappointing, both for the patient and for the surgeon,

if appendicectomy fails to relieve the gastric symptoms and further surgical treatment is necessitated; nevertheless, a 10 per cent. chance of a second operation being necessary does not justify an unnecessary operation in 90 per cent. of the cases.

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## THE TREATMENT OF DISSEMINATED SCLEROSIS: A SUGGESTION.

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THE morbid anatomy of disseminated sclerosis is different from that of any other disease of the nervous system in the actual nature of the lesions by which it is characterised. Not only are the lesions patchy in their distribution, but each lesion presents, as its special feature, a destruction or alteration of the myelin within a well-defined area of the brain or spinal cord. This demyelinisation is often, if not always, followed by some neuroglial sclerosis, less frequently by changes in the axis cylinders which pass through the affected area.

From a clinical point of view the nature of the disease has always been obscure, but during recent years the theory that some toxic agent is responsible has steadily gained ground. From the clinical point of view disseminated sclerosis displays a strong resemblance to only one other disease of the central nervous system—i.e., cerebro-spinal syphilis. This resemblance is chiefly dependent upon the fact that both maladies are distinguished by paroxysmal attacks upon the cerebro-spinal axis occurring at intervals which may vary, according to circumstances and probably in accordance with general states of health, from a few weeks to many years. Recovery from one attack, even if some residual loss of function is the rule, is always possible, perhaps probable; but the liability to recurrence, unless preventive steps are taken in the case of the syphilitic disease, is generally recognised by all medical men.

Recent advances in our knowledge of syphilis tend to show that, having once gained access to the body, the treponema pallidum can be, as it were, stored away for indefinite periods, and yet can maintain the power of attacking one part or another of its host when a suitable occasion presents itself. For the moment it is of little importance to discuss the locality of its hiding-place. Adequate anti-syphilitic treatment will, in the majority of cases, suffice to prevent the occurrence of these tertiary outbreaks.

All attempts to discover a bacterial agent responsible for disseminated sclerosis have failed, just as failure dogged the footsteps of those who for many years sought the syphilitic germ by ordinary bacteriological methods.

The resemblance between cerebro-spinal syphilis and disseminated sclerosis has led me, during the last year or two, to suspect that the latter disease may be caused by some organism belonging to the same class as that of the treponema. The fact that this class of organism is best combated by mercury or arsenic induced me to commence the tedious experiment of treating a few selected cases of disseminated sclerosis by repeated courses, or nearly continuous administration, of arsenic, on the same principle as that which makes the repeated administration of mercury the only effective method of preventing attacks of cerebro-spinal syphilis in syphilised persons. The experiment is tedious, because in the natural history of disseminated sclerosis remissions are frequent and often prolonged, so that observations on many cases over many years would be necessary to establish the value or uselessness of this measure. So far as my experiment has gone there is nothing to show that it is useless, but I should be very sorry to claim any success on the material at present available.

The advent of Ehrlich's "606" preparation to some extent alters the situation. If the use of this preparation is to prove a method of permanently eradicating syphilis after infection, and if there is any basis of truth in the theory I have put forward concerning the pathogenesis of disseminated sclerosis, it might well be that what is efficient in the one case might prove equally so in the other. The difficulty of inducing patients to persevere with the continuous administration of a drug and the difficulty of knowing how far one's orders have been conscientiously obeyed would be overcome by substituting one or two "intensive" injections for years of medicine-taking. The fact that much time must elapse before the method of treatment can be thoroughly tested induces me to publish this suggestion now in the hope that others besides myself may see their way to try Ehrlich's preparation in suitable cases of disseminated sclerosis as soon as the experimental stage in its employment has been completed.

It is justifiable, even on the slender grounds I have offered, to try a therapeutic measure which may possibly be of service in influencing a disease so intractable as disseminated sclerosis, and it is interesting to note that nearly all observers are agreed in regarding arsenic as one of the most useful drugs in the palliative treatment of that disease. So far as I am aware, the use of arsenic in the manner I have described and for the reasons which I have ventured to advance has not yet been advocated, and I should certainly have hesitated in doing so now had not the remarkable results of Ehrlich's discovery in the treatment of syphilis made the means of putting my theory to a practical test so much more simple.

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## TORSION OF THE LEFT BROAD LIGAMENT AND FALLOPIAN TUBE IN A CHILD.

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ON Feb. 20th, 1910, a girl, aged 11 years, was admitted to St. Thomas's Hospital with the following history. Six days previously, while returning home from school, she was suddenly seized with acute abdominal pain associated with vomiting. She was so ill that she was carried to the nearest house, whence she was sent home later. She had been in bed since, suffering from severe abdominal pain, which was at first paroxysmal, but subsequently continuous. The pain was confined to the lower abdomen, and was worse on the left side than on the right. There was a little vomiting on the second day of her illness, but none afterwards. Both micturition and defæcation were painful. The bowels had acted twice on the day of admission and once on the previous day; no blood was passed either per rectum or per vaginam.

Further inquiry elicited the information that some three or four months previously the child had suffered from somewhat similar symptoms; on this occasion also the pain was situated in the left lower quadrant of the abdomen, and it was sufficiently severe to make her roll about in bed and scream. The onset was sudden and associated with collapse and vomiting. This first attack, however, lasted only one day, and between the two attacks she had been perfectly well and free from any abdominal pain.

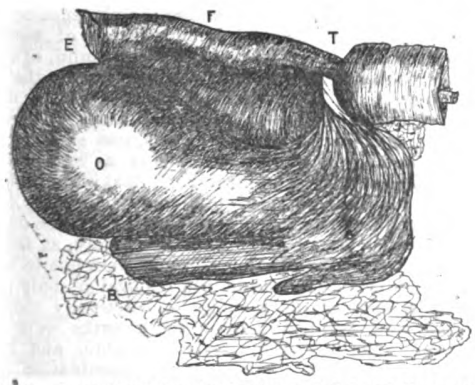
*State on admission.*—The child looked ill: the expression was anxious, and the eyes were sunken. The temperature was 100·6° F., the pulse 120, and respirations 30 per minute. The tongue was moist and but slightly furred. There was no abdominal distension nor retraction, but the respiratory movements were confined to the epigastrium, the lower half of the abdominal wall being quite motionless. No peristalsis was seen. The percussion note was everywhere resonant, and the liver dulness was normal. Palpation revealed great tenderness all over the lower half of the abdomen; this tenderness was most intense in the hypogastric and left iliac regions, where also there was definite cutaneous hyperæsthesia. The lower segments of both recti were rigid, but elsewhere the abdominal wall was flaccid. Per rectum a tender, œdematous mass was felt in Douglas's pouch, a little to the left of the middle line. The urine was normal and there was no evidence of any intra-thoracic disease.

The history and state were considered to be suggestive of a leaking pelvic abscess, probably appendicular in origin;

the very acute and apparently colicky nature of both the present and the previous illness were commented on as being an unusual feature, but one to which no great importance was to be attached, in the entire absence of any other symptoms or signs of intestinal obstruction.

Shortly after admission the abdomen was opened by one of us, under chloroform-oxygen anæsthesia, through the lower segment of the right rectus muscle, one inch from the middle line. On incising the peritoneum no free fluid or peritonitis was found, and the intestines appeared to be normal. There were some old adhesions round the tip of the appendix, but no recent inflammation. On further investigation some blood-stained fluid was found in the pelvic cavity, which was next explored. The uterus and the right Fallopian tube and ovary were normal in appearance; in the pouch of Douglas, however, a large, chocolate-coloured mass was found, which proved to be the strangulated left ovary, with the corresponding broad ligament and Fallopian tube twisted several times. The patient having been placed in the Trendelenburg position, the incision was prolonged downwards and the intestines were packed off by abdominal pads. The attachment of the broad ligament to the pelvic wall was divided, and the whole mass was with some difficulty extracted from Douglas's pouch and brought into the wound. The broad ligament was clamped close to the uterus and ligatured with silk in three portions, and the Fallopian tube and ovary were removed. After the divided edges of the broad ligament had been united by silk sutures, the pelvis was dry-sponged and a considerable amount of blood clot was taken out. The abdominal incision was sutured in layers, silk being used for the peritoneum and rectus sheath, and salmon gut for the skin. Convalescence was uneventful; the wound healed by first intention, stitches were removed on the seventh day, the child got up on the twelfth day, and was discharged on the sixteenth day.

On examination of the parts removed it was found that




Sketch of specimen showing torsion of left broad ligament and Fallopian tube. E, Fimbriated end of tube. F, Fallopian tube. T, Seat of torsion. O, Ovary. B, Blood-clot adherent to Douglas's pouch.

the broad ligament and Fallopian tube had undergone several complete twists in a clockwise direction close to their uterine attachment. The tube and ovary were black, and the broad ligament was infiltrated with blood clot. A large piece of friable blood clot was attached to that portion of the mass which had been adherent to the pelvic wall. The ovary was four inches long, an inch and a half wide (from above down), and an inch thick (from behind forwards). A microscopical examination, kindly made for us by Dr. Leonard S. Dudgeon, showed only extreme vascular engorgement of the ovary. There was no evidence of disease of the ovary, apart from the results of strangulation.

We have ventured to put this case on record on account of the extreme rarity of the condition found. Torsion of the pedicle of ovarian tumours in children is, of course, not uncommon; in fact, the ovarian tumours of childhood appear to be very liable to this accident. Damianos[1] refers to 14 cases of torsion of the uterine adnexa in inguinal herniæ of young children; and Morrel[2] reports a case of torsion of the left Fallopian tube in a woman, aged 32 years, without any concomitant strangulation of the ovary. Haultain[3] has published a case of apparently chronic torsion of the Fallopian tube and broad ligament, with infarction of the ovary; the operation was performed on account of metrorrhagia of 18 months' duration, and there were no acute symptoms. We have been unable to find in the literature any instance of acute strangulation of a healthy and normally situated tube and ovary.

We are much indebted to Dr. T. D. Acland and Mr. H. Betham Robinson for permission to publish this case, and to Mr. W. Victor Corbett for his sketch of the parts removed, which is reproduced here.

[1] Deutsche Zeitschrift für Chirurgie, 1905, Band lxxx.
[2] Bulletins et Mémoires de la Société d'Anatomie de Paris, 1903.

## MASSIVE INFARCTION OF THE RENAL CORTEX.

BY JAMES A. TORRENS, M.B., B.S. LOND., M.R.C.P. LOND.,
MEDICAL REGISTRAR TO ST. GEORGE'S HOSPITAL.

FROM the rarity of this condition the following case seems to be worthy of record.

A woman, aged 29 years, was admitted to St. George's Hospital on August 21st, 1910, under Dr. Arthur Latham's care with the history that seven days previously she had had a miscarriage at the fourth month, followed immediately by complete suppression of urine and two days later by obstinate vomiting which persisted throughout the illness. The patient had always been healthy, except that her first confinement was followed by puerperal septicæmia. Her subsequent children were born prematurely at six and seven months respectively.

On admission the patient was found to be a stout woman; her face was flushed, and her expression bright and eager. The pupils reacted well, were equal, and moderately dilated, and the tongue was moist and clean. She was mentally alert and intelligent, had no headache, and indeed said that she felt quite well except for the discomfort caused by vomiting. There were no twitchings or convulsions; the reflexes were natural and the fundi did not show any change. The temperature was 99° F., the pulse 112 (not high tension), and the respirations were 28. Examination of the thorax and abdomen did not reveal anything abnormal, while an X ray photograph was negative. A catheter was passed and 1 cubic centimetre of urine containing pus and red blood cells was withdrawn. The vomiting persisted, and 24 hours after admission the patient died somewhat suddenly after complaining that she felt sick and faint.

At the necropsy, made 23 hours after death, the following notes were made:—"The body is that of a well-nourished woman inclined to obesity. There is a very slight degree of œdema of the ankles. *Thorax.*—No ascites. The abdominal and pelvic viscera are healthy, with the following exceptions: *Kidneys.*—8 ounces each; the capsules str readily, exposing a smooth mottled red and yellow surface. On section the entire cortex is pale buff in colour, and is surrounded by a bright red line of hyperæmic reaction; the pyramids are dusky red and stand out distinctly in contrast to the pallid cortex. The condition appears to be massive infarction of the entire renal cortex. *Bladder.*—Contracted and empty save for 1 cubic centimetre of muco-pus; no cystitis. *Uterus.*—Measures 5 inches by 4 inches by 4½ inches and contains several ounces of decomposing blood-clot. *Vessels.*—The ovarian and renal veins are thrombosed throughout (the right renal and ovarian veins open simultaneously into the inferior vena cava). The clot, which does not appear septic, is partly canalised in places, and has extended as a tapering prolongation for about three inches down the inferior vena cava, but has not obstructed the lumen of that vessel. The renal arteries do not show any atheroma or endarteritis. Microscopically, the kidneys show general infarction of the cortex. There is hæmorrhage into the tubules and glomeruli, but no evidence of endarteritis; the veins, however, appear thrombosed."

The history of this case and the naked-eye appearance of the kidneys are practically identical with those described by

[3] Journal of Obstetrics and Gynæcology, vol. viii., p. 25.

Bradford and Lawrence,[1] but in their case the condition was ascribed to a definite and selective endarteritis obliterans of the renal arteries. Herringham and Griffith[2] describe a case that is clinically similar but in which, while there was no endarteritis obliterans, there was a definite increase of interstitial tissue throughout the kidneys. Parkes Weber,[3] in describing what appears to be a somewhat different type of case, regards the fault as being a primary defect in the tubal epithelium. In the cases quoted by Herringham and by Bradford, as well as in the present one, the anuria dated from childbirth or miscarriage, but so far as I have been able to ascertain, this is the first case in which the lesion has been shown to be directly attributable to thrombosis of the renal veins, though it has been demonstrated by physiological experiment that obstruction to the renal vein will produce a condition of typical infarction.[4]

I am indebted to Dr. Latham for permission to publish this case.

Upper Berkeley-street, W.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SURGICAL SECTION.

*Cancer of the Rectum.*

A MEETING of this section was held on Jan. 10th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Dr. F. WOOD JONES, speaking on the anatomy of the rectum, pointed out the advisability of recognising Houston's first fold as a really useful indication to mark out the limits of the rectum.

Mr. F. SWINFORD EDWARDS said he would briefly state his own views on the present position of the operative measures necessary for the removal of a rectal cancer and his experience of the various methods he had employed. His chief object was to enter a protest against the performance of an unnecessarily severe operation, with a heavy mortality, for cases of cancer attended with but little risk to life, and which, moreover, entailed no crippling of the patient. All forms of treatment other than operative, whether by radium, X rays, high-frequency currents, trypsin and other digestive ferments, had, and he thought it was generally admitted, proved unavailing. Nowadays the position of the growth—namely, its distance from the anus—was no bar to extirpation. The only real bar to a successful operation was the fact that the growth was no longer confined to the bowel but had become adherent to neighbouring parts, whilst the lymphatics were infected. Another condition which quite barred any attempt at removal was metastasis in the liver, often not discovered until the abdomen had been opened, either for exploration of the growth or for the purpose of forming an artificial anus. In considering the best method to employ for removing the disease due regard must be paid to the immediate mortality of any given operation, the risk of recurrence, and the amount of crippling, if any, likely to follow the operation. Mr. Ernest Miles had advocated a very extensive proceeding, which he called the radical abdomino-perineal operation, for all malignant growths of the rectum and pelvic colon no matter how small they might be or where placed. That operation consisted in the formation of an iliac anus with the entire removal of the rest of the sigmoid colon, the rectum with the soft parts adjacent thereto, and the anus. He stated that his reason for advocating that extensive operation in all cases of rectal cancer was the great frequency of recurrence which followed his perineal operations, under which heading he included parasacral excision with end-to-end anastomosis. Out of 58 operations there were 54 recurrences. Mr. Edwards sympathised with Mr. Miles in the unfortunate results attending his perineal and sacral excisions, nor could he offer any explanation to account for them, unless it were that many of those cases were unfavourable for any operation, the disease having probably passed beyond the limits of the bowel at the time of the operation and had better have been left alone. Mr. Edwards had always held the opinion that all growths fixed anteriorly or laterally, even when involving only a part of the bowel circumference, were best left alone. If the meso-rectal glands and lymphatics were markedly enlarged and remained so, either after a preliminary colotomy or after rest in bed with frequent rectal douching, recurrence after operation was not improbable. It must be admitted that enlarged glands were often only inflammatory and not malignant. He had several times met with those glands when carrying out a parasacral excision and had been much disappointed on finding that he was unable to remove the entire chain. Some of those cases were alive and well to-day, having passed the three years' limit, a proof, he thought, that those glands were not cancerous. For some 10 or 12 years he had abandoned the old perineal operation excepting for cases of epithelioma of the anus, and in the majority of cases had performed the extirpation by the sacral or coccygeal route. He had not concerned himself with the preservation of a bone flap, as patients appeared to suffer no inconvenience from the loss of the coccyx and lower part of the sacrum. If the growth was extensive, involving the removal of, say, four inches or more of bowel, or if it extended so low down that end-to-end union was problematical, he advised a preliminary colotomy. If the anus had been preserved and the continuity of the bowel re-established, the artificial anus could be closed subsequently; but bearing in mind the chance of recurrence that might well be postponed for a year. When performing the colotomy the hand should be passed into the abdomen for the purpose not only of defining the limits of the growth, but also of exploring the liver and ascertaining the presence or otherwise of enlarged glands and lymphatics or of secondary growths elsewhere. The existence of these would, of course, negative any attempt at excision. Extirpation by the sacro-coccygeal route he had carried out 81 times with 4 deaths, or an immediate mortality of 5 per cent. There was recurrence in 22 cases. Hospital cases, lost sight of, numbered 14. Forty-one cases were well as far as was known; of those, one was still in a surgical home making a rapid convalescence. He thought that a preliminary colotomy seemed to offer some bar to recurrence. When recurrence did take place it was with one exception *in situ*—namely, at the level of the bowel section. Partial excisions were not to be condemned. By partial he meant the removal of only part of the circumference of the rectum. Theoretically they were unsurgical, and in all the cases the growths were small, none larger than a florin, freely moveable, and limited to the post-rectal wall. Microscopical examination proved them all to be malignant adenomata. In one case, operated upon four years ago, he removed in addition four enlarged glands, in two of which metastatic deposits were found. That lady was now in perfect (rectal) health and by a digital examination it was almost impossible to say that she had undergone any operation. Most of the cases of recurrence had been either in young subjects or in cases where the section of the bowel was perilously near the disease—namely, the specimen when removed did not show an inch of healthy mucous membrane above and below the growth. In conclusion he expressed the opinion that rectal cancer in persons of 45 and over was not prone to recur if removed sufficiently freely, but in the young it was very malignant and was likely to recur unless removed at a very early stage. Cases of cancer of the sigmoid colon were very favourable ones for operation by the abdominal route, with end-to-end union, unless obstruction was present, when a temporary colotomy should be the rule. Subsequent excision with intestinal anastomosis could then be carried out. In those cases he had had excellent results. For growths involving the upper rectum and pelvic colon an abdomino-perineal operation was necessary. Miles's amplification of it also had its field of usefulness for cases in which the disease had passed beyond the walls of the bowel and which otherwise should be considered inoperable. The radical abdomino-perineal operation entails an artificial anus, which, when necessary, was no great evil. Indeed, it

[1] Bradford and Lawrence: Endarteritis of the Renal Arteries, causing Necrosis of the Entire Cortex of Both Kidneys, Journal of Pathology and Bacteriology, 1898, vol. v., p. 195.

[2] Herringham and Griffith: Necrosis of Entire Renal Cortex of Both Kidneys, Brit. Med. Jour., 1905, vol. ii., p. 1043.

[3] Parkes Weber: Anuria with Necrosis of Renal Convoluted Tubules, THE LANCET, 1909, vol. i., p. 601.

[4] Adami and Nicholls: The Principles of Pathology: Systemic Pathology, Feb. 27th, 1909, p. 42.

might be a positive advantage in preventing a tendency to recurrence. When the artificial anus was intended to be permanent he preferred hypogastric colostomy through the left rectus muscle to an iliac one, as he found it conferred a much larger measure of control. But where a subsequent abdominal section was purposed for an excision the iliac site was the better, for being placed farther out the abdominal wound was not so likely to be infected. To his mind the ideal operation for cancer of the rectum when situated between the fourth sacral vertebra above and a point 2 inches above the anus below was Bardenheuer's modification of Kraske's operation with end-to-end suture. It was true that a dorsal fistula would persist for a time, but that usually healed in from two to three months if the stricture at the line of union was kept dilated. He had always found contraction take place at that point with a very marked anterior spur. That in time practically disappeared if treated by dilatation, for which purpose he found nothing to equal Hegar's double curved metal dilators. In the face of his own results he could not agree with those surgeons who advocated a combined operation for all cases of rectal carcinoma, any more than he agreed with those who for a small and limited cancer of the breast would remove all but the ribs, and thus cripple the patient for life.

Mr. W. HARRISON CRIPPS said he agreed with what Mr. Swinford Edwards had said. It was almost exactly the same as what he had been saying for years. To consider the route by which cancer of the rectum should be removed was a secondary question; the most important point was, could the cancer be removed with advantage to the patient? The class of case that he considered suitable for removal of the cancer was one in which the growth was still confined to the rectum and had not extended beyond; to discover if the growth was confined in that manner it was necessary to find out by feeling whether it was fixed or not; if not fixed, then the disease could be removed with advantage to the patient. Mr. Harrison Cripps said it took him some time to learn when a growth was removeable or not. The chief consideration was whether the growth had gone through the walls of the rectum and extended to the neighbouring tissue. If that were the case his experience was that operation would not secure a permanently successful result. Mr. Harrison Cripps emphasised the importance when examining of making the examination of a rectal cancer under an anæsthetic. As regards recurrence, in most of his cases the cancer when it recurred was found in the tissue surrounding the part from which the growth had been removed. Concerning the method of operation he thought it was impossible to lay down precise rules. Turning to the question of the value of the operation, his view was that if there was any doubt as to whether a growth should be removed or not the benefit of the doubt should be given for the removal of the tumour. He believed a very large number of these cases of cancer of the rectum were curable if operated upon early, and appealed to practitioners to spend more time in studying the symptoms of the disease.

Sir FREDERICK S. EVE said that judged by the best clinical observation and by the percentage of permanent cure there was no doubt in his mind that Kraske's operation or the perineal type had not been sufficiently thorough. In regard to cure every surgeon was aware that a three years' limit was far too small. There were plenty of cases of cancer in which recurrence occurred after ten years. He had seen a melanotic cancer recur after 20 years. It was true that cancer, if it recurred did so soon, but there were many cases in which it recurred late, and he had seen two cases in which recurrence took place after five years' freedom from the disease. It was clear that Kraske's or the perineal method of operation could not be trusted to obtain a permanent cure, and he had come to the conclusion that the operation which filled the most important position, namely, a permanent cure, or the probability of it, at a low mortality risk, was the abdomino-perineal operation combined with a permanent colostomy. Although he advocated the abdomino-perineal operation and colostomy for the greater number of cases of carcinoma of the rectum, he recognised that the disease, if it only affected the anal canal, could be attacked from the perineum.

Mr. H. F. WATERHOUSE emphasized the importance of preliminary preparation. When intestinal obstruction the result of cancer of the rectum was present an inguinal colotomy must be immediately performed, and all attempts at radical cure abandoned for some days. Failure to recognise the importance of that rule had to his knowledge proved disastrous. Even in cases in which no obstruction had occurred and in which daily or more frequent evacuations of the bowel took place it was, in his opinion, essential to attempt to diminish as far as possible the septicity of the bowel. He was accustomed to administer castor oil on the sixth and fifth days preceding the operation. During the four days prior to operation the patient was given beta naphthol and salol, gr. v. of each in a cachet four times daily, and his food was restricted to milk and meat extracts. Eight hours prior to the operation half a grain of opium was given in pill form, and half an hour prior to the administration of the anæsthetic a hypodermic injection of ⅓rd grain of morphine hydrochlorate and 1-80th grain of atropine sulphate was administered. The rectum was washed out twice daily for two days, and again on the operating table with a 1 in 2000 solution of permanganate of potassium. The bowels after that rarely acted until the third, fourth, or fifth day, and a considerable number of incisions (parasacral) healed completely, or more commonly largely by primary union. He was a strong adherent of the parasacral method for which they were indebted to Kraske and Kocher. In his opinion it was the method of choice in almost every case of cancer of the rectum in which radical treatment was justifiable. He was in the habit of making use of that method in practically all the cases that came under his care. He had no doubt but that division of the sacrum markedly increased the shock of the operation and that the existence of a bone wound in a cavity likely to become septic was a very real danger. Even in cases of anal cancer he had long abandoned perineal excision. In such cases admirable access was obtained by the parasacral incision. Operating thus from above downwards was a far less sanguinary procedure than the method of perineal excision, for the reason that the blood-vessels could easily be clamped before division. If the anus were sutured or plugged with gauze at the commencement of the operation the diseased part could readily be pushed downwards outside the anal orifice, and, being there retained by an assistant, the parasacral incision was sutured before the protrusion was amputated. In that way union of the parasacral wound by first intention might almost always be obtained, as no fouling of the wound, hands, or instruments should take place. He was fully aware, however, that the great question they were called upon to discuss, and if possible to settle, was what was the best method of procedure in cases of cancer involving the first and second segments of the rectum of their student days or what should now be called the lower end of the pelvic colon and the rectum proper. Was the operation of the future to be a combined abdomino-perineal or abdomino-anal or some modification of the parasacral method of Kraske and Kocher? His vote was decidedly for the latter. He admitted that the combined abdominal methods appeared at first sight very attractive. They seemed in accord with the modern doctrine of freely removing all possibly infected glands, and he gave the method a fair trial, but he had, however, for all cases which could properly be called rectal cancers practically abandoned it. Among the reasons for his decision the chief was the difference in the mortality of the two methods. So far as he was able to judge the mortality of the combined abdominal method was not less than 30 per cent. and probably more. That of the parasacral method was, he believed, not more than 5 per cent. Adherents of the more serious operation must surely submit reasons more cogent than any he had hitherto heard before they could expect surgeons to abandon the far safer parasacral method. The reasons for the greater mortality of the former method were not far to seek. It was a question of two extensive incisions instead of one, of an operation of much longer duration—a matter of great moment in patients exhausted by pain and sleeplessness, not to mention septic absorption from the cancerous growth. The secret of success was free division of the peritoneal attachments of the bowel and free division of all bands connecting the posterior surface of the rectum with the sacrum. The amount of mobility of the bowel after free division of the peritoneal reflection was a revelation to those who practised that manœuvre for the first time. End-to-end union of the bowel segments had afforded him satisfactory results in many cases, though he was bound to confess that in the majority of instances leakage

had occurred on the posterior aspect of the line of union. As to the various combined abdominal methods, he stated that the more he saw of them the less he liked them. They were, in his opinion, far too severe, certainly for the ordinary run of cases of operable rectal cancer. They were double operations and entailed a severe strain upon debilitated patients. In not a few cases in which he had commenced the operation *viâ* the abdominal route and found a cancer at or just above the pelvic brim he had deemed it safer to perform a colotomy by bringing the upper end of the bowel out through the abdominal incision and closing, after excision of the cancer, the lower segment, without making any attempt to perform an end-to-end anastomosis or to bring the upper segment down to the anal margin. He was convinced that that was a far safer operation than any of the combined methods, and that the disadvantages of an inguinal anus were much exaggerated. He referred to the advantage of the removal of the infected glands which lay along the iliac vessels. In his opinion, when the disease had spread to those glands the prospects of radical cure were practically *nil*. He thought the glands that in all cases called for removal were those between the rectum and the anterior surface of the sacrum, and there could be no question that those could be far more radically removed by the parasacral incision than by the abdominal method.

## MEDICAL SOCIETY OF LONDON.

*Some Ocular and Visual Conditions in Medical Cases.*

A MEETING of this society was held on Monday, Jan. 9th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. JAMES TAYLOR, in the course of a paper on Some Ocular and Visual Conditions in Medical Cases, considered the subject in five sections: (1) Conditions of the pupil; (2) conditions of ophthalmoplegia externa; (3) changes in the optic nerve; (4) retinal changes; and (5) hemianopia. In the pupil conditions inequality was not necessarily of grave significance. The Argyll Robertson pupil he referred to in its association with syphilis; it was said also to occur with lesions in the vicinity of the third ventricle. Dr. Taylor also mentioned its association with definite signs of tabes dorsalis, general paralysis of the insane, with paraplegic or hemiplegic symptoms, the results of syphilitic disease of vessels, and with wasting about the shoulder girdle, the result of syphilitic cervical pachymeningitis. It might also occur as an isolated phenomenon, and the case was mentioned of a man who had been under observation for 16 years with merely neurasthenic symptoms. He had recently developed deafness of both ears probably of syphilitic origin. In speaking of ophthalmoplegia externa isolated sixth nerve paralysis was alluded to, and the question was raised whether it ever resulted simply from neuritis due to exposure to cold. He pointed out that he had never met with it associated with seventh-nerve affection (Bell's paralysis). The sixth nerve frequently suffered from accident—probably because of its prolonged and exposed course—e.g., in fracture of the base. Third-nerve paralysis, isolated, was usually the result of syphilis, sometimes in tabes, sometimes as a precursor of general paralysis. Both those nerves might suffer in general brain conditions—e.g., tumour, meningitis, &c.—and from toxic conditions such as diphtheria. In myasthenia gravis ocular palsies were one of the chief and early signs and varied much in intensity from time to time. Third-nerve paralysis also occurred in the condition known as migraine ophthalmoplégique, probably as a result of an actual lesion of the nerve. He then referred to the occurrence of optic atrophy in tabes dorsalis, and demurred to the statement that it occurred in the pre-ataxic stage of tabes, because in some cases of tabetic optic atrophy no ataxy developed. It also occurred in general paralysis of the insane, not infrequently many years before the mental symptoms were present. The optic atrophy of disseminated sclerosis was also discussed. Optic atrophy also occurred in lesions at the chiasma, optic neuritis in such conditions being extremely rare. Optic neuritis occurred most commonly as a result of intracranial tumour. In spite of assertions to the contrary, it was frequently an early sign, and the impairment of vision which it caused might be the first thing to excite the attention of the patient. In four years at Moorfields Dr. Taylor had had referred to him no less than 20 patients with optic neuritis who went to Moorfields before seeking advice elsewhere. Optic neuritis also occurred occasionally in disseminated sclerosis. It also was said to occur in anæmia and as a result of other toxic conditions such as influenza. Neuroretinitis occurred in glycosuria and albuminuria. The condition of retinal thrombosis and its symptoms were referred to and also the absence in many cases of any signs of associated visual disease. Occasionally cardiac hypertrophy was present. In the other cases a local arteriosclerosis was probably the cause, and the long subsequent life of many who had suffered from retinal thrombosis would seem to indicate that it did not necessarily imply a serious general condition. Embolism of the central artery of the retina was also referred to and its occasional occurrence—namely, after diphtheria—without any recognisable sign of heart disease. Homonymous hemianopia, although usually occurring with hemiplegia, permanent or temporary, slight or severe, might be an isolated phenomenon, the result of vascular blocking, frequently the result of syphilitic endarteritis. Bitemporal hemianopia was always the result of a lesion at the chiasma, occasionally associated with signs of acromegaly, frequently not.

Mr. PERCY FLEMMING read a paper on Some Cases of Medical Interest met with in Ophthalmic Work. He said that myopia in the great majority of cases was of course due to the axis of the eyeball being too long—axial myopia, and the onset of such myopia occurred in youth. A rarer cause of myopia was a change in the refractive index of the lens—index myopia. Such a change in the refractive index might be accompanied by fine changes in the lens visible with the ophthalmoscope, but in a minority of cases no such visible alteration in the lens accompanied the change in refraction. The onset of myopia in a patient over 40 was a striking event. Such patients said that whereas they could formerly see distant objects quite clearly, now everything a few yards away was blurred, and further, that whereas glasses were formerly needed for reading, now print could be read without their aid. An ophthalmoscopic examination usually showed fine lens opacities, but in a few of those cases the lenses were clear. In the latter group of cases examination of the urine would usually show the presence of sugar. Another point in connexion with diabetes to which he wished to refer was the occurrence of retro-ocular neuritis. The characteristic feature of retro-ocular neuritis was a loss of vision with little or no fundus change but with a definite central scotoma for red or white. Diabetes was recognised as a cause of retro-ocular neuritis, but a much more common one was tobacco, or tobacco in combination with alcohol. Although diabetes might produce typical retro-ocular neuritis apart altogether from tobacco, yet those cases were more often seen when the patient was a smoker, although the smoking might not be excessive. In such cases, if the tobacco be omitted improvement in vision usually occurred, but he had usually found the patients refuse to give up their smoking; they were fairly miserable from the diabetes, and they deliberately preferred the solace of their pipe to the prospect of improved vision. That being so, he should like to make the suggestion that those who had the care of diabetics in the early stages should warn them of the possible injurious effect of tobacco, and advise them to give up smoking. In patients over 45 one frequently met with a symptom which Mr. Flemming called morning ptosis. Such patients said that they had a difficulty in separating their lids in the morning, not because they were stuck together, but because they had no power to separate them, and they usually said that they had to push the lid up with their finger. No definite paralysis of any muscle was found, and although there might be a condition of ill-health or weakness present, yet the underlying cause in the majority of cases was the presence of uncorrected or insufficiently corrected presbyopia. The symptom might be taken as an indication of the need of glasses for near work, and with proper correction with spectacles the symptom would disappear. In the examples of that condition which had come before him the swelling had always been noticed first on waking. Another but quite different cause of difficulty in opening the eyes in the morning was the occurrence of angio-neurotic œdema. The swelling of the lids had always been noticed on waking, and had cleared up between 12 and 1 o'clock with what seemed to him rather extraordinary regularity. He had

nothing to say as to the cause of the condition, but some cases seemed to have been benefited by calcium lactate. Another and much more serious cause of transient œdema of the lids was the presence of a chronic frontal or ethmoidal sinus empyema. Cases of paralysis of the cervical sympathetic were fairly common, being due to various lesions in the neck and thorax, but the opposite condition, irritation of the sympathetic, which was often referred to in text-books as preceding paralytic phenomena, was in his experience very rare indeed. He had been on the look-out for such cases for years, and had only found one.

Mr. CHARLES HIGGENS pointed out the necessity for recognising the importance of the occurrence of double vision, and narrated two cases in which this was noticed in men over 60, one dying from a tumour of the brain and the other dying from cerebral softening. Mr. Higgens said that double vision was a symptom which did not have the significance attached to it that it should have amongst practitioners of medicine.

Mr. W. H. H. JESSOP pointed out that patients with ocular symptoms who did well under mercury need not necessarily be classed as syphilitics.

Dr. E. FARQUHAR BUZZARD narrated a case in which there was a condition of optic neuritis apparently due to the combination of alcohol and tobacco without any central scotoma.

Dr. WILFRED HARRIS pointed out how central scotoma may be the initial symptom of a pituitary tumour.

After Dr. THEODORE FISHER had spoken, Dr. C. O. HAWTHORNE commented on the fact that a retro-bulbar neuritis was now and then the first event in the development of disseminated sclerosis.

Dr. HERBERT FRENCH informed the meeting that a medical man in Queensland had put on record the fact that in a number of cases of children lead poisoning caused optic neuritis with paralysis of the sixth nerve.

Dr. H. A. DES VŒUX contended that unless ophthalmic surgeons examined the eyes of patients under atropine they would miss cases of headache due to conditions of the eye.

Mr. ERNEST CLARKE said that when cases of eye-strain were sent to the oculist of the old school for examination and report they might be returned to the practitioner with a statement that the headache was due to general conditions of the health. The only way to avoid that occurring was for the practitioner to insist on the report from the oculist being made after a cycloplegic examination.

After Dr. TAYLOR and Mr. FLEMMING had replied, the meeting concluded.

## LIVERPOOL MEDICAL INSTITUTION.

*Exercise Treatment of Knee Injuries.—Subphrenic Abscess.*

A MEETING of this institution was held on Jan. 5th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. G. P. NEWBOLT showed a patient whom he had observed for many years and on whom he had performed many operations for Intestinal Fistulæ due to Tuberculous Peritonitis. A considerable amount of the intestine had now been resected from time to time and the abdominal wall had become closed.—Mr. R. W. MURRAY pointed out the danger of closing both ends of a piece of intestine.

Dr. W. H. BROAD read a note on the Exercise Treatment of Knee Injuries, and advocated a much earlier resort to massage than was usually practised, even when considerable synovitis was present. Many of his cases had been severe football injuries.

Mr. FRANK JEANS read a paper on Subphrenic Abscess. He had operated with complete success upon three cases recently, one being probably pneumococcal in origin, one following appendicitis, and one possibly arising from an infection of the kidney. Mr. Jeans said that the diagnosis was often difficult and pointed out the frequent obscurity of the etiology. Appendicitis and gastro-duodenal ulcers accounted for more cases than other abdominal causes. In diagnosis he had derived great benefit from radiography. The transpleural operation as far back as possible was the best and most usually applicable. He used a very large rubber drainage-tube, at least 1¼ inches in diameter. The use of the aspirating needle was condemned. He considered that it was of great importance to obtain a vaccine from the material removal since the case might become chronic.—A discussion arose concerning the use of the exploring needle. The general opinion of the surgeons was that this should not be used unless the patient was already prepared for an operation. The President and other physicians, however, maintained that its use in some cases was necessary.—Dr. JOHN HAY thought that œdema of the chest-wall was more likely to be present in subphrenic than in pleural collections of pus.—Dr. W. B. WARRINGTON considered that, excluding those cases in which the pleura had become infected, the important guide was the recognition of normal or exaggeration of normal signs above a somewhat sharply defined line of abnormal thoracic signs.—Mr. F. C. LARKIN said that he had several cases in which a left subphrenic abscess had arisen from infection due to œsophageal injuries from foreign bodies.

## MIDLAND MEDICAL SOCIETY.

*Exhibition of Cases.*

A MEETING of this society was held on Dec. 14th, 1910, at the Medical Institute, Edmund-street, Birmingham, Mr. W. F. HASLAM, the President, being in the chair.

Dr. A. STANLEY BARNES showed a typical case of Progressive Muscular Atrophy in a man aged 30 years. The atrophy was almost universal, but was most marked in the small muscles of the hands, the forearms, and in the shoulder girdle muscles. In the thigh and legs wasting to a moderate extent was present, but there was a considerable degree of spasticity with increase of the knee-jerks, ankle clonus, and extensor plantar reflex on both sides. The most exceptional feature of this case was that coincidently with onset of the muscle atrophy the patient developed epilepsy which was not of the Jacksonian type, and which persisted in spite of treatment throughout the nine months since the illness commenced.

Dr. A. DOUGLAS HEATH showed a female child, aged 2 years, with an eruption of Favus on the abdominal wall. The patch of eruption was circinate in shape and rather larger than a two-shilling piece, flattened in the centre and raised at the margins. On Dec. 2nd on the centre of the area and here and there on the raised margins were sulphur-yellow cups typical of favus. These had disappeared at the time the case was shown. Cultures taken from the yellow cups proved the fungus to be the achorion quinckeanum of Bodin, an uncommon variety of favus growing rapidly in white downy cultures. Another child, 8 years of age, and living in a house next door to the patient exhibited, had a red raised area on the outer side of one elbow with a well-defined favus cup in its centre. Dr. Heath had not seen this variety of favus before, all his previous cases having grown the achorion schoenleinii on culture, but a case had been shown before the Dermatological Section of the Royal Society of Medicine in October, 1908, by H. G. Adamson, which gave similar cultures.

Dr. HEATH also showed a case of Rodent Ulcer of the Nose in a woman aged 60 years. The disease had been present for six years, and for six months or longer had been ulcerated and covered by blood crusts. The ulcer was almost cured, having been treated by three exposures to pure radium bromide using a screen of lead foil and thin rubber. Each exposure had lasted for three-quarters of an hour and had been made at weekly intervals.

Mr. FRANK BARNES showed a case of Aneurysm of the Groin involving the Common Femoral and the Lower Part of the External Iliac Arteries treated by ligature of the external iliac by the transperitoneal route. The patient, a man, aged about 40 years, early in July last had received a blow in the groin from some tubes which he was carrying. He had pains in the groin, but did not complain of anything else until a month later, when he noticed a lump in the same place which grew rapidly larger during the next fortnight and caused him to seek advice. He was admitted to the hospital on Sept. 2nd and was operated upon on the 8th. His previous history included several years in the army, most of which he had spent in India. During that time he had had fever, and was warded for a month, and gonorrhœa, for which he was treated for a month, but never remembered having had syphilis or any sore at the time of his illness. The patient was placed in the Trendelenburg position, and the abdomen was opened half an inch to the right of the right linea semilunaris and the intestines packed off from the iliac fossa by means of

gauze sponges, leaving a clear view of the peritoneum covering the brim of the pelvis and right iliac fossa. The aneurysm was seen to extend about half an inch above Poupart's ligament. The peritoneum was opened half an inch above this in the line of the vessel, which was exposed and ligatured by a double ligature of kangaroo tendon applied separately according to the Ballance and Edmunds method, merely approximating the inner coats of the vessel. The peritoneum was sewn up over the artery with a small catgut suture and the abdomen closed in three layers with mass sutures through the whole wall. Pulsation ceased at once in the aneurysm. Return pulsation was noticed in the sac about the tenth day and then seemed to disappear in the course of the next few weeks. To-day, 14 weeks from the operation, the tumour is hard and is noticeably smaller; pulsation is to be felt both in the mass and in the apparently solid vessel for about two inches below Poupart's ligament, but only on careful palpation.

Mr. W. E. BENNETT showed a man, aged 52 years, suffering from Paresis of the Right Leg associated with Sciatica. The illness commenced in November, 1907, with an acute attack of sciatica on the right side, from which he recovered, and was able to work until July, 1910, when he had a recurrence of the pains in the right leg. On examination there was found to be a spastic contraction of all the muscles around the right hip-joint and those acting on the knee-joint. The muscles below the knee were flaccid and atrophied, and the patient was unable to raise his foot or to move his toes. Sensation was normal. All the muscles on the front of the leg reacted to faradism of medium strength. Those on the back of the leg did so very feebly to the very strongest faradic current. The patellar reflex was exaggerated, but all the other reflexes were normal. Babinski's sign was not present. The wasting of the muscles below the knee was considerable, the difference in the measurement round the calf of each side being 2½ inches.

Mr. B. J. WARD read notes on Four Cases after Resection of Gangrenous Intestine in Strangulated Hernia, giving details of the operation performed on each. End-to-end anastomosis after resection of the gangrenous intestine was effected by simple suturing. All four patients recovered and one was shown at the meeting.

Mr. A. W. NUTHALL exhibited a boy, aged 13 years, over whose right iliac crest was situated a large lymphangioma, the appearance of which agreed with a description given by Sir Jonathan Hutchinson and illustrated by him as lupus lymphaticus in his "Illustrations of Clinical Surgery." The main body of the nævus was a pear-shaped raised plaque three inches in length, and there were a number of isolated papillomatous outgrowths.

# Reviews and Notices of Books.

*A System of Syphilis.* Vol. VI. Edited by D'ARCY POWER, M.B. Oxon., F.R.C.S. Eng., and J. KEOGH MURPHY, M.C. Cantab., F.R.C.S. Eng. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 574. Price £2 2*s.* net per vol., or to subscribers £10 10*s.* net the set of six volumes.

IT is very fitting, as Sir Alfred Keogh points out in the preface to this volume, the sixth and last of the series, that in a work dealing with the subject of syphilis one volume should be devoted to a consideration of that disease as it affects the naval and military services. Not only is the early history of the disease closely bound up with the military history of the fifteenth century, but there is no disease, with the exception of malaria, which plays so important a part in the medical history of the army and the navy. Even at the present day the question as to the complete curability of syphilis still awaits settlement, and there can be no doubt that the soldier or sailor who has once suffered from the disease is no longer the man that he was. He is more likely to break down under the stress of service conditions or the hardships of war, and syphilis undoubtedly has a greater effect in lessening the physical efficiency of the soldier than any one of the infectious diseases.

In the present volume the history and epidemiology of syphilis in the more important armies is dealt with by Lieutenant-Colonel C. H. Melville, R.A.M.C. The charts given showing a steady fall in the admission rate for this complaint are most interesting and encouraging, and demonstrate, as Sir Alfred Keogh points out, the good results which have attended the observance of a higher ideal of conduct on the part of the rank and file of the army, and the ungrudging and persistent efforts of the officers of the Royal Army Medical Corps. That the latter have done much to advance our knowledge of the pathology and treatment of syphilis must be admitted by all workers in this branch of medicine, and the fact that a large number of the articles in this System are written by officers of this branch of the service is further proof, if any were needed.

In the second section of the volume Captain L. W. Harrison, R.A.M.C., describes the pathology and microbiology of syphilis as applied to the public services, and this section is followed by one by Major C. E. Pollock, R.A.M.C., on its clinical course and treatment in the army. Surgeon C. N. Fiske of the United States Navy contributes a chapter dealing with some noteworthy features of syphilis in the navy of the United States of America, and Fleet-Surgeon E. P. Mourilyan, R.N., and Staff-Surgeon Charles K. Bushe, R.N., deal with the epidemiology and treatment of syphilis in the British Navy. The concluding article in the book is a short one on the value of Justus's test in the diagnosis of syphilis by Staff-Surgeon W. P. Yetts, R.N.

The illustrations, as usual, are excellent, and the whole volume forms a worthy conclusion to the System of which it is a part. We must congratulate the editors on the termination of their work and the success with which they have carried it out.

*Memorials of 80 Years.* By JOHN BEDDOE, M.D. Edin., LL.D. Edin., F.R.S. Bristol: J. W. Arrowsmith. 1910. Pp. xi.–322. Price 7*s.* 6*d.* net.

THESE memories of 80 years are really memorials of the quiet life of one of the last members of that band of workers who raised the study of anthropology to a science in this country. The book tells in a pleasant and chatty manner of the years, all too quickly passed, in which a hobby became a serious pursuit, and led Dr. Beddoe to his present position as a recognised authority on anthropology, more especially in relation to the races of Great Britain.

A delicate child, born of an old yeoman stock in south Shropshire, his early life was spent at Bewdley, where he soon became familiar with the flowers and insects of the forest of Wyre. Destined for the law, his dyspeptic troubles led him to study physiological chemistry, whence by easy gradations his attention was turned to medicine. He entered at University College, and ultimately obtained a medical degree both at London and at Edinburgh. Inclined to roam, and having some influence, he was appointed to the civil hospital staff during the Crimean war, and was attached to the hospital of Scutari, having amongst his companions E. A. Parkes, George Rolleston, Holmes Coote, J. Whitaker Hulke, Carsten Holthouse, David Christison, and John Kirk. The life was to his taste; he learnt Turkish sufficiently to carry him through the country, and some of the most interesting passages in the book are those describing the pleasant excursions made in a district which has not even yet become hackneyed. The war being ended, Dr. Beddoe did not immediately settle in practice but made a tour of Europe to observe the colours of the eyes and hair in the inhabitants of the different countries through which he passed, with the occasional measurement of a skull when it was possible without giving offence. In 1857 he settled as a physician at Clifton, not, he himself says, a very fortunate choice of locality, because he

had as his competitors J. Addington Symonds, father of the author, and Ed. Long Fox. In Bristol Dr. Beddoe's life seems to have pursued the even tenour of its way familiar to all practitioners, varied by journeys to Ireland and Brittany, and diversified by attendance at meetings of the British Association. Increasing age brought a respite from work and allowed time for a journey to the Antipodes before Krakatoa had done its fell work of destroying the pink terraces, but giving us the after-glow which was so remarkable a feature of our sunsets in the eighth decade of the last century. This journey showed to Dr. Beddoe the youthfulness which is so striking a characteristic of many of our colonies. It was brought home to him somewhat as a shock, for he says: "I was asked to preside at a teetotal meeting and was a little surprised at its conclusion when a gentleman proposed a vote of thanks to 'our venerable friend in the chair.' I was fifty-nine, and though bald and grey had as yet no feeling of the approach of old age; but when I had spent a little more time in the colony I recognised that there was hardly a man over sixty in the whole of North Queensland."

The Welsh blood running in the veins of Dr. Beddoe must be held responsible for the curious vein of superstition, thinly veiled as "coincidence," which crops up two or three times in the narrative. Here and there, too, are occasional slips, as when Syme is given a title, Rolleston is described as a surgeon, and the name of Sir William Macewen is spelt incorrectly; but these are as nothing, and the interest of the book is great. The frontispiece represents Dr. Beddoe photographed as he stands in front of his house at Bradford-on-Avon.

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*Human Anatomy for Art Students.* By Sir ALFRED D. FRIPP, K.C.V.O., C.B., M.B., M.S. Lond., F.R.C.S. Eng., Surgeon-in-Ordinary to H.M. the King, Surgeon to, and lately Lecturer upon Anatomy at, Guy's Hospital; and RALPH THOMPSON, M.B., Ch.M. Vict., F.R.C.S. Eng., Senior Demonstrator of Anatomy, Guy's Hospital. With drawings by INNES FRIPP, A.R.C.A. Lond., Life-Master, South London Technical Art School, City Guilds; and an Appendix on Comparative Anatomy by HARRY DIXON, M.S.B.S. With 151 illustrations. London: Seeley and Co., Limited. 1910. Pp. 296. Price 7*s.* 6*d.* net.

ALTHOUGH this book is written especially for students of art it is fair to say that there is much in it with which the average student of medicine would do well to have a better acquaintance; for the work possesses what so many so-called "human anatomies" utterly lack—an element of human nature introduced among the many structures of which the human body is composed. There is much sound art in the book, and much anatomy that is good and really human. The style of writing is familiar and easy, and we are glad to see that the customary rigid phraseology of descriptive anatomy is, for the most part, replaced by a much less stilted, but no less effective, style. It is not impossible that in places this change has been carried rather too far, and exception might be taken to the description of the skin as "smooth and moist, yet not messy."

The writing of the book has been ruled by strong common-sense and a keen observation, and such a section as that describing the development of the young child is obviously the outcome of personal and interested study. It is somewhat to be doubted, though, if any special adaptation is to be seen in the fitness of the ball of the infant thumb to furnish an air-tight plug for the infant mouth, or in the fitting of the groove between two fingers to the philtrum of the upper lip when a child sucks its fingers.

The illustrations by Mr. Innes Fripp are excellent, but the reversing of Fig. 66 makes it very confusing, and one or two minor imperfections may be noted. The pelves represented on p. 45 as respectively male and female show two rather obvious sex contradictions, for in the female the centrum of the first sacral vertebra appears to be as large absolutely, and relatively to the lateral masses, as in the male; also in the female the acetabula are as large as they are in the male. The drawings of surface anatomy are excellent, and a series of photographs of the nude goes to complete a human study of the form of the human body which is a useful work and a genuine addition to anatomical literature.

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*Anæmia.* By Professor P. EHRLICH and Professor A. LAZARUS. Part I., Vol. I.: Normal and Pathological Histology of the Blood. Second edition. By Professor LAZARUS and Dr. O. NAEGELI. Translated from the German by H. W. ARMIT, M.R.C.S. Eng., L.R.C.P. Lond. London: Rebman, Limited. 1910. Pp. 218. Price 12*s.* 6*d.*

PRESSING obligations prevented Professor Ehrlich from taking part in the preparation of this second edition, and he therefore requested Dr. O. Naegeli to coöperate with Professor Lazarus.

The first chapter commences with a definition of anæmia. In its etymological sense this word deals with a blood the content of which is smaller than in health, but, as the authors point out, in practice all conditions in which a diminution of the hæmoglobin content is ascertainable must be regarded as anæmic. In the majority of cases, even if this diminution is not quite constant, oligæmia and oligocythæmia exist simultaneously in varying degrees. The most important methods of clinical hæmatology depend, directly or indirectly, on the recognition of these changes, and the rest of the chapter is occupied with a discussion of the methods employed for the examination of the blood.

The author deals next in an exhaustive manner with morphology and pathological histology, and so reaches perhaps the most important section of the book, which contains a detailed consideration of the white blood corpuscles. The normal histology and classification of the cells are first described and explained; then follow some remarks on the origin of the leucocytes and on the demonstration and significance of the cell granules. The wonderful application of intracellular chemistry which characterises Professor Ehrlich's work on the blood is well set forth. The authors of this work maintain that at the present time there is no longer any really earnest opposition to Ehrlich's doctrine of the specificity of the granulations and of the formed mature types of leucocytes. But an energetic struggle may still be said to exist with regard to the further question as to whether a sharp division should be drawn between the lymphatic and the myeloid systems, and between the cells which are derived from these two tissues. Professor Ehrlich has enunciated this dualistic doctrine as the most important result of his long-continued studies. We agree with the authors in the opinion that if all the arguments for and against the dualistic doctrine be reviewed, the past few years have brought some very important facts which speak in favour of this doctrine. Dr. Naegeli has been able to show by embryological investigations that the myeloid system first develops, and that much later, and as an absolutely separate phenomenon, the lymphatic system follows. He considers that in view of this fact the idea that myeloid tissue is only a more highly developed form of lymphatic tissue must be dismissed.

The subjects of leucocytosis and leukæmia are next considered at length, and many interesting points are discussed under these headings with the fulness that might be anticipated. A short description of the blood platelets concludes the work. It should be added that Mr. Armit has performed the task of rendering the ideas of the authors into a readable form of English with great success, and has thus enabled the medical profession in this country to have at its disposal a valuable work. It aims chiefly at defending

the manifold doctrines which Ehrlich has introduced into hæmatology, but these doctrines have earned a right to consideration.

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*Spiritism and Insanity.* By Dr. MARCEL VIOLLET, Médecin des Asiles, Paris. (Library of Experimental Psychology and Metapsychism, edited by Dr. RAYMOND MEUNIER, Paris.) 1910. London: Swan Sonnenschein. Pp. 137. Price 2*s.* 6*d.* net.

THIS is the first of a series of little books addressed to the profession and to the educated public generally, whom it is hoped thus to keep acquainted with all the data acquired by contemporary science in the psychological and psychical domains. The collection will form a sort of synthetic essay on the *ensemble* of psychological questions and problems relating thereto.

Dr. Viollet begins by a description of various spiritualistic phenomena such as he has personally observed at *séances* by professional mediums; and, without passing any critical judgment on them, he emphasises the extent to which the "reality" or otherwise of these phenomena depends on the degree of "preparedness" of the members of the circle, each of whom is doing his utmost to get into *rapport* with the medium. Obviously the sole guarantee for the reality of the facts is the evidence of the senses of the spectators—a very inadequate basis on which to erect any interpretational hypothesis. Are we not accustomed to see the hallucinated insane not only believe in the reality of their hallucinations, but, moreover, rest persuaded that they are perceived by everybody? It is clear that there enter into the constitution of spiritualistic doctrines certain elements analogous to those entering into the constitution of certain forms of insanity; further than this Dr. Viollet does not go. The rest of the volume is taken up with an account of various clinical cases that have come under his own observation, in which frankly insane patients have suffered from mental symptoms that took birth in spiritualism, and these cases provide instructive reading. The anonymous translator of the book is to be complimented on his rendering of the original French.

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*Gynecological Diagnosis.* By WALTER L. BURRAGE, A.M., M.D. Harv. With 207 text illustrations. London and New York: D. Appleton and Co. 1910. Pp. 656. Price 25*s.* net.

THIS clinical manual has been written for those who have not had an opportunity of studying gynæcology in special hospitals or clinics. Whether any manual, however good, will enable a practitioner in such conditions to become an expert in the diagnosis of gynæcological affections is a question to which our answer would be in the negative. Of all the branches of medicine gynæcology is essentially one which demands a considerable amount of clinical experience if any real skill is to be obtained in diagnosis. No doubt, however, many students will use this book in connexion with their practical work in the out-patient department or in the ward, and will thus learn a great deal which will enable them to make the best use of their clinical opportunities. It is an excellent manual, some parts being of especial interest, while on the whole the author has succeeded in his attempt to keep in the background those diseases which only appeal to the specialist and to give prominence to the commoner diseases of more importance to the general practitioner. The book contains chapters on the diagnosis of diseases of the bladder and rectum which should prove very useful, and also one on diseases of the breast, as the author considers these organs a part of the reproductive system, having intimate relations to the genital organs.

The first part of the book is concerned with the process of history-taking, the physical examination of the patient, and the special methods of investigation of the diseases of certain organs, such as the bladder and rectum. In the second part each disease is discussed in detail, a short account being given of the normal anatomy and physiology of each organ, and then the differential diagnosis is gone into. Frequent use is made of tabular statements in the differential diagnosis of different conditions, and a sufficient description is given of each disease to remind the reader of its main features. The author points out that the term endometritis is greatly misused, and that in the great majority of cases of hypertrophy of the endometrium, wrongly called endometritis, there is no evidence at all of any inflammation. Although apparently he agrees with this proper view of the matter, yet we find a certain amount of confusion on his writing, for a number of conditions, the result in reality of chronic congestion of the uterine mucosa, are described under the heading of chronic endometritis.

We regret, also, that the author does not attempt to answer the question as to what is an erosion, although from his description it is clear that his conception of an erosion is perfectly correct from the anatomical point of view, and we are glad to see that he does not label it by the misleading term "adenoma." But here again there is some confusion, for while Dr. Burrage says that "in an erosion there is no inflammatory action," yet on the next page the term endocervicitis is apparently used as signifying the condition of the cervix accompanying an erosion.

In discussing the effect of fibroid tumours upon neighbouring organs, we are told that they are a cause of abortion, and yet figures are quoted giving an abortion-rate of 12·7 per cent. and 15 per cent., as low as, and indeed probably lower than, the abortion-rate in all classes of pregnant women, which most authorities maintain is nearly 20 per cent. There is a good chapter upon the menopause.

The book is a useful compilation of its kind, and should prove helpful to students and practitioners. The index is full and the alphabetical index of the illustrations is a useful feature.

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*Movable Kidney: Its Etiology, Pathology, Diagnosis, Symptoms, and Treatment:* By WILLIAM BILLINGTON, M.S. Lond., F.R.C.S. Eng., Senior Surgeon to Out-patients, Queen's Hospital, Birmingham. With 12 full-page plates and illustrations in the text. London, New York, Toronto, and Melbourne: Cassell and Company, Limited. 1910. Pp. 167. Price 7*s.* 6*d.* net.

THERE are few matters about which greater diversity of opinion exists than the importance of moveable kidney. Though nearly all are agreed that serious symptoms may arise in consequence of abnormal renal mobility, yet while some consider that urgent symptoms very rarely result from moveable kidney, others consider that the most diverse symptoms, often of the greatest severity, may be directly or indirectly due to this cause. Mr. Billington has for several years devoted a great deal of attention to the subject, and he is convinced that moveable kidney is an important factor in the production of many serious symptoms, and that fixation of the kidney will in many cases prove exceedingly effective. He does not operate on every case of moveable kidney which he sees. Relief has been afforded to some by belts and other forms of mechanical support, but he has found it necessary to operate in 230 cases, and he has fixed in place more than 350 loose kidneys.

With regard to the frequency of the condition, the author believes that it is less common among the general community than appears at first sight, but that among the ailing and weakly it is far more often met with. He agrees with all other observers that the affection is much more common in women than in men, and if only the operations were considered the comparative frequency would be 8 to 1; but he believes that these statistics represent the frequency in

men to be greater than it is, for the man with a loose kidney is more likely to seek operation, perhaps, than is the woman. Trauma resulting from muscular overstrain is, he considers, the most common cause of the affection, and he attributes also some of the responsibility to corsets, especially when they are high-waisted.

The operation which Mr. Billington prefers consists in raising a triangular flap of kidney capsule from the upper half of the organ, and below this silkworm sutures are passed through the capsule of the lower half of the kidney. The kidney is pushed up until the base of the flap is level with the lower border of the last rib. The flap of capsule is passed over the rib and stitched to the capsule below. The silkworm-gut sutures are made to pass through the muscle and skin above the incision, and are there tied over a roll of gauze. As to the results of the 350 operations, two deaths occurred, but in neither case was this occurrence apparently due to the operation. Mr. Billington is very satisfied with the effect of the operative treatment, both as to the fixation of the kidney and the relief of symptoms.

There is certainly something to be said in favour of nephropexy, but we are inclined to think that Mr. Billington's enthusiasm has carried him a little farther than most medical men would go. That in certain cases mobility of the kidney may reflexly produce troublesome symptoms we are willing to acknowledge, but we cannot accept the widespread influence which some would attribute to this frequent lesion. We should like to see in a future edition of this work a list of all the cases operated upon by Mr. Billington with the results obtained.

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*A Text-book of Veterinary Anatomy.* By SEPTIMUS SISSON, S.B., V.S., Professor of Comparative Anatomy in Ohio State University, Columbus, Ohio; Member of the American Association of Anatomists. With 588 illustrations. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 826. Price 30*s.* net.

THIS is one of those excellently illustrated text books of anatomy of which so many have been issued in America, but it possesses the distinction of being one of the very few that are devoted to the anatomy of the domesticated animals. A great deal of care has been lavished on the preparation of the book, both by the author and by the publishers, and the result is a very handsome treatise on veterinary anatomy. The book is profusely illustrated, for it contains 588 figures, many of which are coloured, and several of them are original. Most of the new illustrations are done from photographs, and are in every way satisfactory; most are included in the chapters dealing with the digestive and respiratory systems; and it is in the description and illustration of the viscera that the book has made the most welcome additions to the text-book literature of veterinary anatomy. The remaining illustrations are taken from the beautiful plates of Ellenberger and Baum or from the work of Professor Schmaltz.

The method of the book consists in describing the body system by system, and dealing under each heading with the organs of the horse, the ox, the pig, and the dog; while in the case of the digestive system the viscera of the sheep are also included for the sake of comparison. The science of veterinary anatomy has arrived at a stage in which it has corrected many wrong impressions concerning the natural form of most of the viscera, a stage already passed through in the case of human anatomy; for the introduction of formalin hardening by intravascular injection has naturally modified the views of veterinary anatomists, just as it did those of the human anatomist. The author has therefore been at pains to secure illustrations done from photographs of good specimens of the normal viscera hardened *in situ*, and in this he has well succeeded; he has also called to his aid the knowledge gained from the preparation of frozen sections carried out during the last ten years at the Ohio State University. He has presented the whole in a text-book, the general make-up of which is excellent.

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## LIBRARY TABLE.

*Hernia: Its Causes and Treatment.* By R. W. MURRAY, F.R.C.S. Eng., Surgeon, David Lewis Northern Hospital, Liverpool; late Surgeon, Liverpool Infirmary for Children. With 62 illustrations. Second edition. London: J. and A. Churchill. 1910. Pp. 184. Price 6*s.* net.—This is the second edition of a very readable treatise on hernia which Mr. Murray has written dealing especially with its etiology and its treatment. He is a supporter of Mr. R. Hamilton Russell of Melbourne in believing that the presence of a sac is the essential cause of hernia, and he maintains that the really necessary part of the operation for the radical cure of hernia is complete removal of the sac, a doctrine and mode of treatment which are made to apply not only to inguinal hernia, for which the theory of origin was first formed, but also to femoral hernia. There is very much to be said in favour of the congenital origin of a large proportion of herniæ, especially of those passing through the inguinal canal, and every year an increasing number of medical men accept this theory, but to apply it to all cases is perhaps carrying the view too far.

*Atlas und Grundriss der Verbandlehre für Studierende und Aerzte.* (*Atlas of Bandaging.*) Von Dr. ALBERT HOFFA, a.o. Professor an der Universität, Berlin; Geh. Medizinalrat, Direktor der Universitäts-Poliklinik für Orthopädische Chirurgie. Nach der Verfassers Tod bearbeitet von Privatdozent Dr. RUDOLF GRAHSEY, München. Lehmann's Medizinische Handatlanten, Band 13. Vierte, wesentlich vermehrte Auflage, mit 170 Tafeln und 134 Textabbildungen. München: J. F. Lehmann. 1910. Pp. 152. M 10.—We have on many occasions commended the volumes issued in this series, and the favourable opinion which we have expressed with regard to other books belonging to it is certainly equally fully deserved by the volume before us. It is always difficult in preparing a work on bandaging to know where to draw the line between those forms of bandaging of proved utility and those which are merely fantastic variations. We think that Dr. Rudolf Grahsey, who is responsible for this fourth edition, is to be congratulated on the result of his labours. The descriptions are brief and to the point, and the diagrams represent very accurately the various forms of bandage. In most cases the drawing of the bandage applied is accompanied by a diagrammatic key-picture which shows clearly how the bandage should be put on. The application of splints is also shown in figures, and the varieties of trusses illustrated by various figures are also described.

*Pathogeny of the Neurasthenic States.* By Dr. PAUL DUBOIS, Professor of Neuropathology at the University of Berne. Authorised translation by EDWARD G. RICHARDS. London and Edinburgh: William Green and Sons. Pp. 61. Price 2*s.* net.—This is a reprint and translation of a communication presented by Professor Dubois at the Tenth French Congress of Medicine held at Geneva in September, 1908, and in it the reader will find a lucid summary of the views on the psycho-neuroses which he has promulgated in various papers and volumes. In assigning a common origin to the "neurasthenic states"—for Professor Dubois is a convert to the view which prefers the conception of "episodic syndromes" to that of "morbid entities"—in a primitive mental defect, a "psychasthenia" in the general sense, he appears to postulate too much, for in many

patients who have one attack of nervous debility, from which a complete and lasting recovery is made, we fail to find any trace of that fundamental inferiority which Dr. Dubois describes, nor do we require its aid to explain the symptoms. But although the reader may be unwilling to subscribe to all of the author's dicta, he will appreciate the eminently practical spirit that characterises this essay and the clinical acumen of its writer.

*The Vision of the Young Man Menelaus: Modernist Studies of Pentecost and Easter.* By the Author of "Resurrectio Christi." London: Kegan Paul, Trench, Trübner, and Co. 1910. Pp. 211. Price 2s. 6d. net.—It is difficult, and might possibly be unfair, to attempt to summarise the argument in this book, which is concerned with the discrepancies in the differing versions of the resurrection of Christ. These versions present features that can only be described as mutually contradictory, as many scholars have fully recognised. In an endeavour to reconcile the discordances the author develops the hypothesis that many of the Christophanies were subliminal, and supports his opinion by an appeal to the dicta of what he chooses to call the new science of religious psychology, the chiefest assumption of which is that "if God works directly in man He must work through the subconsciousness." Taking this frank assumption for a basis, the author proceeds to elaborate solutions of the problems concerned which culminate in the statement that "subliminal telepathy is only another name for the Communion of Saints." Not only does he take the "facts" of telepathy as proved, and talk of it as a recognised commonplace, but he also appeals so complacently to the phenomena of the subconscious mind, as though that conception in an organised and unvarying form were part of the current coin of the world of thought, that it is hard to believe he can be aware of the difficulties which surround the subject. There are half a dozen differing conceptions of the subconscious mind, some at least of which are mutually incompatible, and from its very nature the mechanism of the phenomena with which we suppose the subconsciousness to be concerned must escape us whenever we attempt to analyse it. If we are once to grant, as the author would have us, "the ability of the subconsciousness to acquire telepathic impressions from outside," then we can follow his argument in its entirety, but whether our admiration of the Apostles of old is thereby augmented is another matter. We recommend our readers, however, to judge the book for themselves; they will be struck alike by the erudition of the author and the spirit of reverence with which the subject is handled.

*Dr. Grey.* By STEPHEN ANDREW. London: Greening and Co., Limited. 1911. Pp. 320. Price 6s.—Stephen Andrew, who acknowledges in his dedication that he is a medical man, has written a book which is quite worth reading. It is not a novel, for there is no plot, no particular story, and the love interest is of quite a secondary character. Incidentally, we do not like a heroine who calls her lover "Arthur boy." But as a picture of the trials and struggles of a general practitioner whose lot lies among the poor, and of the manners and customs of those poor, it is good. It cannot be placed in the same rank with "Liza of Lambeth," for Mr. Andrew does not write with the grim aloofness which Mr. Maugham, also a medical man, employed so effectively in his first literary work; "Liza of Lambeth" is permeated with the atmosphere of the Virgilian Fatum; such things as are described therein happen because they must happen. Mr. Andrew's pictures of medical life are simply and accurately drawn; St. Dorothea's Hospital, at which Dr. Grey studied, had one curious custom in which we hope it is unique among London hospitals—namely, that the house physician on his rounds at night examined all the new cases which had been admitted during the day, but otherwise he draws a faithful portrait of the modern *interne*. The pictures of club practice are lifelike, and the descriptions of the various types of practitioners with whom Dr. Grey comes in contact in his search for a practice are very well done. The practitioner who, buried in a little country practice, is on the verge of becoming a drunkard, owing to the loneliness of his position, is now an obsolete type, but such cases occurred 50 years ago, especially in the fen country, where many a man took to opium eating as a remedy in malaria, and as a stimulant and narcotic. Dr. Grey eventually settles down in a midland ironworks town, where his experiences are described with much realism. One of his friends, a Radical journalist with whom he has many a discussion on medical politics, suggests as a remedy for poverty, both that of the poor medical man and that of his poor patients, the formation of a State Medical Service, a question of great moment just now.

## JOURNALS AND MAGAZINES.

*Quarterly Journal of Microscopical Science.* Edited by Sir E. RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., E. A. MINCHIN, M.A., and GILBERT C. BOURNE, M.A., F.R.S. December, 1910. London: J. and A. Churchill. Price 10s.—This number, the first part of Vol. LVI., is mainly occupied by a contribution to the Embryology of the Marsupialia, by Professor J. P. Hill, containing an account of the principal results and conclusions at which he has arrived after a protracted and much interrupted study of an extensive collection of early developmental stages of marsupials, ranging from the fertilised egg to the blastocyst, in which the two primary germ-layers are definitely established. The material at his disposal was obtained in Australia and comprised a fairly complete series of stages of the native cat (Dasyurus viverrinus), together with a few early stages of other marsupials—namely, Parameles and Macropus. Our knowledge of the processes of cleavage and germ-layer formation in the marsupialia is based largely on the observations of Selenka on the development of the Virginian opossum. The divergence between Professor Hill's and Selenka's results is explained by the fact that Selenka's early material was derived from but two pregnant females, and consisted of many eggs which had failed to develop normally. The conclusions at which Professor Hill arrives are, first, that the embryonal or formative region of the unilaminar marsupial blastocyst is the homologue of the inner cell mass or embryonal knot of the eutherian blastocyst; and, secondly, that the extra-embryonal or non-formative region of the same is the homologue of the extra-embryonal ectoderm of the Sauropsida and Monotremata, and of the trophoblast of the Eutheria. As regards the first conclusion, there is not likely to be much difference of opinion, but Professor Hill feels that the second will prove neither obvious nor acceptable to those mammalian embryologists who, with only Selenka's account before them, have formulated other views as to the morphological nature of the outer enveloping layer of the eutherian blastocyst. Specialised though the marsupials undoubtedly are in certain features of their anatomy, Professor Hill's observations do not afford any ground for the supposition that their early ontogeny is also of an aberrant type; on the contrary, his observations tend to show that the marsupial type of early development, not only readily falls into line with that of Eutheria and Prototheria, but furnishes a key to the correct interpretation of that extraordinarily specialised developmental stage, the eutherian blastocyst, and bridges the gap in our knowledge of the way in which the transition from the monotrematous to the eutherian

type of development has been effected. The article is illustrated by plates, reproductions of drawings executed with the aid of Zeiss's camera lucida; these plates contain 85 drawings, each one of which is a perfect work of art. Included in this number is a memoir by Dr. Iwaji Ikeda on a deep-sea echiuroid animal, a very curious and hitherto undescribed species belonging apparently to the genus Hamingia. There is also a description of the blood of certain coleoptera, Dytiscus marginalis and Hydrophilus piceus, by Dr. Wakelin Barratt and Mr. George Arnold, from the Cancer Research Laboratory of the University of Liverpool. The circulating fluid of these coleoptera resembles mammalian blood in so far as it is an albuminous fluid and contains cells. The fluid part resembles mammalian blood plasma in containing proteid coagulable by heat, and a globulin held in solution by the saline constituents of the fluid. The cellular elements are represented by phagocytes and small round cells, whose characteristic feature is the scanty cytoplasm surrounding the nucleus. The circulating fluid differs in its low osmotic pressure and in the absence of cells containing hæmoglobin, no oxyphile granules are present, and no spontaneous coagulation of the blood takes place on standing. In both insects oxygenation appears to occur by direct transfer to the tissues of oxygen supplied by the tracheal vessels, the blood plasma not serving as a medium of exchange.

*L'Hygiène.*—The second year of this illustrated monthly commences with the December issue, and the high level of excellence to which we have previously drawn attention is kept up. In the latest number Dr. Maurice de Fleury writes an elegant and eloquent note to the memory of the late Professor Raymond. Professor Courmont of Lyons discusses the modern construction of hospitals, and there are the usual articles dealing with cookery and gastronomics rather from a medical standpoint. The principal contribution to this number, however, is an essay, by Professor Charles Richet of the Academy of Medicine, on physical education, humorously and effectively illustrated by Maurice Taquoy. Writing gravely, though in a sportive way, on the ancient theme of the relation of the health of the body to the health of the mind, Professor Richet lays down the following simple formula: "Sur les huit heures de repos, deux heures de travail intellectuel aux artisans; deux heures d'exercice physique aux intellectuels." The truth of this dictum he proceeds to establish on physiological grounds.

# New Inventions.

## A NEW THERMOMETER CASE.

Messrs. Down Bros., of 21, St. Thomas's-street, London, S.E., have made for me a new thermometer case to which I wish to draw the attention of the medical profession. This case is divided into two chambers, which are separated by a perforated partition. The smaller chamber screws on to the larger, and is made to contain a portion of a formalin tablet. The formaldehyde vapour

liberated from the tablet passes up through perforations into the large chamber, which contains the thermometer. The advantages of an antiseptic thermometer case are obvious, especially when there is no fluid which can leak into the pocket. It is only a quarter of an inch longer than the ordinary case, and is sold by Messrs. Down Bros. at the price of 2*s.* 6*d.*

F. W. MORTON PALMER, M.D. Cantab.

Teignmouth.

## "TABLOID" EMERGENCY CASE FOR PHYSICIANS.

IN order to provide a convenient receptacle for those special medicaments and remedial agents which a physician would wish to have by him in case of sudden emergency, Messrs. Burroughs Wellcome and Co., of Snow Hill Buildings, London, E.C., supply a special outfit consisting of a light but strongly constructed hand-bag made of steel, and covered inside with morocco and outside with cowhide. It opens with a spring catch and is divided into three separate compartments, which are kept free from dust by hinged and leather-covered steel doors, so that the contents of the case, whether frequently required or not, are always ready and in good condition when occasion arises for

their use. The weight complete is about 5 pounds. The case, which measures 8¼ by 5½ by 3¼ inches, contains "Vaporole" products (for hypodermic use) of "Ernutin," pituitary (infundibular) extract, "Hemisine," strychnine, sulphate and morphine hydrochloride, a B. W. and Co. all-glass hypodermic syringe with two needles, "Tabloid" hypodermic products, "Soloid" sodium chloride and "Soloid" corrosive sublimate, and "Wellcome" Brand chloroform in tubes, apparatus for intravenous injection, œsophagus tube, bandages and dressings.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. S. J. de Lange has been recognised as *privat-docent* of Microscopic Anatomy of the Nervous System.—*Berlin:* Dr. Claus, Oberarzt of the Otological Polyclinic of the Charité, has been appointed Director of the Laryngological and Otological Clinic of the Rudolph Hospital. Dr. Josef Koch has been granted the title of Professor. Dr. Kurt Adam has been recognised as *privat-docent* of Ophthalmology, Dr. P. Reyher as *privat-docent* of Children's Diseases, and Dr. Eugen Joseph as *privat-docent* of Surgery.—*Breslau:* Dr. Walter Hannes, Oberarzt of the Gynæcological Clinic, has been granted the title of Professor.—*Halle:* Dr. Hermann Gocht, whose specialty is orthopædic surgery, has been granted the title of Professor. Dr. Alfred Denker of Erlangen has been offered the chair of Otology.—*Jena:* Dr. Ludwig Wrede has been recognised as *privat-docent* of Surgery.—*Königsberg:* Dr. Hoeftmann, whose specialty is orthopædic surgery, has been granted the title of Professor.—*Leipsic:* Dr. Hans Vörner has been recognised as *privat-docent* of Dermatology.—*Munich:* The University Polyclinic which used to be in the Sonnenstrasse has been removed to the fine new building in the Pettenkoferstrasse, which was opened with an imposing ceremony.—*Münster:* Dr. Otto Krummacher has been recognised as *privat-docent* of Physiology.—*Naples:* Dr. Raffaele Janni has been recognised as *privat-docent* of Topographical Anatomy and Operations.—*Padua:* Dr. Vincenzo Mario Carletti and Dr. Pier Diego Siccardi have been recognised as *privat-docenten* of Internal Pathology, and Dr. Gino Dedin as *privat-docent* of Pædiatry.—*Palermo:* Dr. Stefano Barba, Dr. Giovanni Di Cristina, and Dr. Pietro Salvatore have been recognised as *privat-docenten* of Internal Pathology, and Dr. Giuseppe Sulli as *privat-docent* of Forensic Medicine.—*Paris:* Dr. Dejerine, professor of internal pathology, has been appointed to succeed Professor Raymond as Clinical Professor of Diseases of the Nervous System at the Salpêtrière.

THE LANCET.

LONDON: SATURDAY, JANUARY 14, 1911.

## The Report for 1909 of the Medical Officer of the London County Council.

THE eighteenth annual report of the medical officer of health for the administrative county of London has been issued during the present week. The volume has been submitted to the London County Council by the chairman of the Public Health Committee, Mr. W. FREEMAN BARRETTS, who, in a brief introductory paragraph, records his official sanction to its circulation, instead of prefacing it, after the manner of some of his predecessors, with a commentary of his own, which, truth to say, was a somewhat superfluous proceeding. In each of its departments Sir SHIRLEY MURPHY'S report manifests the same high standard of excellence as that which has characterised its several predecessors.

The subject-matter is arranged under convenient headings which have been carefully indexed to facilitate reference. The first part deals statistically with the incidence of disease and of mortality from the principal causes in the several districts of the metropolis. The second, which in recent reports has tended to become the most important part, treats in detail of the administrative proceedings of the County Council, and particularly of its action in supervising and coördinating the work of the metropolitan sanitary authorities, and shows evidence of the steady improvement in the public health and sanitary condition of the metropolitan area which has prevailed since the establishment of the County Council, and presumably because of that event. Fiscal considerations make it obvious that under no system of merely parochial government could the vast and costly schemes have been accomplished by which many of the most pestilential areas of the poorer parts of London have been swept away. If proof of this contention were needed the persistence in these areas of notoriously wretched conditions throughout the long period of vestry control would supply it in abundance. In striking contrast with these conditions may be placed the auspicious results that have been achieved by the County Council within the first vicennium of its existence. Some of these results are already manifest; they consist in the betterment of dwellings for the working classes, the widening or opening out of narrow streets, courts, and alleys, the demolition of unhealthy areas and the provision of open spaces for the recreation of the inhabitants—in a word, the progressive sanitary improvement of the metropolis generally. We sincerely trust that the London ratepayer, who undoubtedly has to bear the burden, will regard these benefits as full compensation for the heavy expenditure incurred. Many of the results of the Council's operations are not as yet fully apparent, and for their complete fruition we must look to the future, and the exceptional powers for the protection of the public health which the County Council has obtained from Parliament in the successive General Powers Bills of recent years. We do not know whether a complete list of these powers has been published, but from the detailed accounts contained in Sir SHIRLEY MURPHY'S successive reports we are convinced that many of them are of substantial and far-reaching importance. In recent years, at any rate, the supreme governing body of the metropolis has become conspicuous among English municipalities as an earnest and successful promoter of sanitary legislation; and there is no reason to doubt that as time goes on it will acquire still more perfect equipment for the discharge of its manifold responsibilities as custodian of the health of the community. Among a multitude of special powers conferred on the Council we may particularise those which are designed to secure a higher standard of cleanliness and comfort in dwellings occupied by the labouring classes. Only recently, for instance, the Council has obtained legal authority to require the provision of suitable cooking arrangements in tenement houses, for the supply of water to the upper storeys of such houses, and for the cleansing of inhabited rooms and their contents from vermin. Again, even so recently as last year, the powers of the Council were still further strengthened by the addition of clauses requiring provision of adequate arrangements for the storage of food. A further important provision contained in the General Powers Bill of the same year empowers the metropolitan sanitary authorities to secure that in all places where food is prepared for sale the conditions under which it is dealt with shall conform to reasonable sanitary requirements. In this way the many thousands of restaurants, cook-shops, and other like places where food is prepared for the working-classes will be brought under supervision, and conditions of cleanliness will be enforced as regards, not only the premises and utensils, but also the food itself and the persons employed in its preparation. Among other exceptional powers, the due enforcement of which will undoubtedly tend to improve the health and comfort of Londoners generally and for which the Council has obtained Parliamentary sanction, are those for the regulation of offensive trades, and for the compulsory cleansing of verminous persons in school and elsewhere.

To the action of the London County Council in administering these powers, as well as to other matters dealt with in Sir SHIRLEY MURPHY'S report, we shall refer in detail. Meantime we make these brief allusions in order to show that in a relatively short period since the inauguration of the London County Council it has been entrusted with extraordinary powers for the protection of its citizens from disease which it has used with great discretion. We direct particular attention to this fact, in the hope that other large municipalities may be encouraged to acquire similar powers and to employ them with a like care.

# Forthcoming International Exhibitions and Congresses.

A GLANCE at the Diary of Forthcoming Congresses which we publish from time to time in our columns will show that we are on the threshold of a year of special activity in all that relates to national and international congresses and exhibitions. This is the more satisfactory as, at least in respect to international exhibitions, we have, as a nation, managed recently much better than we were wont to do. Formerly, if the British Government decided to take part in an international exhibition, it acted as if such a thing had never happened before and was never likely to happen again. A Commission was appointed on each occasion to look after the interests of the country, but it was dissolved when the exhibition was over. All the experience acquired by that Commission was lost. There was no continuity and no tradition in the way which we dealt with international exhibitions. Other countries have for years made better use of that most valuable of all assets—experience. In Germany the Government, and in France the Government and some of the larger municipalities, have been able to carry forward from exhibition to exhibition the accumulating lessons of the different occasions by the institution of standing committees. Nothing of the sort has in any case taken place with us. British exhibitors have had no experienced Government officials to advise them and never quite knew what expense or trouble was in front of them. The would-be exhibitor was left to deal unaided with the railway rates of the various countries, the rates of water carriage, and the formalities of the Custom-houses. On the exhibition ground itself, the costs of hiring stands and the expense of their installation, their lighting, water-supply, and so on, all wore the appearance of so many snares to our exhibitors unless they had frequently been through the ordeal. The necessary outlay seemed preposterous because it was unexplained. No wonder that many British exhibitors were discouraged, and that the British section at these exhibitions was too often not worthy of the position of the nation in respect to our numerous industries. This has now been changed and the first evidence of the good results obtained was given last year at the Brussels Exhibition.[1] A permanent department has been created at the Board of Trade whose mission it is to deal with the national part to be played at these exhibitions. The exhibitor will now find that the rates for carriage of his goods by land or sea have all been arranged for him and that he will profit by considerable reductions on the usual tariffs. At the international exhibition itself, where the Government is recognising the affair, British authorities take charge of his consignments, provide men to unpack them, and help him to "dress" his show and decorate it in harmony with the entire section.

Whatever lessons may have been learnt in Brussels, where this activity of the Board of Trade was first manifested, will be applied at the next exhibitions. It happens that the particular experience of Brussels was of a most dangerous character. No one will have forgotten the terrible fire which destroyed the entire British section. The result is that never in the world's history have such elaborate precautions been taken against fire as those now in course of preparation at the Turin exhibition, and more especially in the British section. First, at Turin itself 20 fire stations are admirably organised, the water-supply is ample, and the pressure sufficient. At the exhibition all the woodwork must be covered over with non-inflammable asbestos paint. Drapery also must be dipped in chemicals and rendered uninflammable. Hydrants will be placed at 38 yards distance from each other, with a specially trained watchman knowing how to use them. The walls, the flooring, and all parts of the building will be constructed with a view, not merely to the prevention of fire, but so that they may be easily reached by the fire brigade, while any amount of emergency exits are to be provided. Similar precautions will be applied at the Arts International Exhibition of Rome, so that the utmost care and forethought have been displayed in the endeavour to prevent fire and such accidents as menace life and property. Exhibitors and visitors may rest assured that never before in the history of exhibitions have such carefully-thought-out proceedings been taken. These measures will serve as object lessons for the International Exhibition of Industry and Labour which is also to be held at Turin this year. The prevention of accidents and of trade diseases, and the compensation and medical treatment of the victims, constitute, we need hardly remark, an important phase of the medico-economical problems of the day. These questions will surely form a very practical side to the great International Sanitary Exhibition to be held at Dresden from May to October. Here there should be much to learn, for Germany excels in the hygiene of the factory and workshop, while in England progress is more marked in domestic hygiene. This seems indicated by the fact that the reduction effected during recent years in the prevalence of pulmonary tuberculosis is more evident among women in England and among men in Germany, for, generally speaking, despite modern increase in female labour, women stop at home and men go out to work. Doubtless we shall hear more about this question at the International Congress on Tuberculosis which meets at Rome from Sept. 24th to 30th. This is a very important Congress, and it assembles every three years. The last was held in 1908 at Washington, U.S.A., when some 6000 members were enrolled and some fairly good scientific work was done. The time that has elapsed has been fruitful, and we may confidently expect a valuable meeting of the leaders of thought.

Other international congresses convoked for this year, which will be of interest to medical men, comprise the Congress for the Blind which will meet at the end of February in Cairo. In May we have the Congress on Opium at the Hague; in June, the First Congress of the International Medical Association for the Prevention of War, at Paris, and certainly no one can have greater knowledge of the evils of war than the medical men who tend the wounded. There are also a number of international congresses on special branches of medical science, such as one on pathology, at Turin; on infant mortality, at Berlin; on alcoholism, at the Hague; on marine hygiene, at Genoa; and on dermatology, at Rome.

[1] See THE LANCET, August 20th, 1910, p. 589.

All these last-mentioned congresses, together with the very important Congress on Tuberculosis, meet in September. Certainly this is the most favourable month for such gatherings, but this great clash of congresses is unfortunate. Most specialists will feel obliged to attend their own particular meeting, and will be unable to be present at congresses less intimately connected with their work, whereby these congresses will lose that criticism from the outside which is of the greatest practical value, and which destroys any tendency to abuses of mutual admiration. There is still great need of better international organisation in these matters. This was forcibly stated when the International Association of the Medical Press met at Budapest the year before last. It was then even urged that perhaps the International Committee of the Medical Press might serve as the link of union between all the international congresses of the medical and allied sciences. No further movement has been taken in this direction, but no one can deny that more systematic arrangement is needed, and perhaps it might be obtained in this way.

## British Spas from the International Point of View.

A STRONG contrast is noticeable between the large number of visitors, wholly or partly in search of health, from Great Britain to foreign spas and the very few foreigners who from like motives seek health or amusement, or both, in the spas and watering-places of this country. The reasons for this disparity are discussed and critically examined with clear insight by Dr. NEVILLE WOOD in an article on British Health Resorts for Foreign Invalids, which appeared in THE LANCET of Jan. 7th, p. 12. Dr. WOOD at once takes the broad ground that it is short-sighted policy, however patriotic it may seem, to exhaust our efforts in endeavours to keep the Briton from foreign countries, instead of demonstrating that British health resorts offer substantial benefits to foreign invalids also, and aiming thus to redress the adverse balance. A permanent commercial success in the long run is dependent rather on supplying the thing really needed than in endeavouring to palm off on him "something just as good." There are patients to whom Great Britain cannot supply the things needful, or at least desirable, for their greatest advantage. Such patients ought to go abroad, if they can afford it, where these desirables can be found, since the rapidity or completeness of their relation to health can be aided thereby. This is particularly the case in regard to certain requirements whose effect is of the psychic order. On the other hand, there are many others who can obtain all that is requisite for them in various resorts at home. But still further—and this forms the main thesis of Dr. WOOD'S article—there are many foreigners who would find at our English health-resorts, for precisely the same reason that should lead certain Britons abroad, advantages that they could not obtain at continental spas.

Attention is often centred too exclusively on the composition of the waters at foreign watering-places, yet the composition of the waters at various British resorts is closely similar to that of one or other of the well-known spas abroad. We have in England, Scotland, and Wales types of all the principal waters—muriated, sulphuretted, indifferent, earthy, alkaline sulphated, iron, strong salt, and brine. It cannot, therefore, be solely a matter of the waters that takes so many of our British patients abroad yet brings so few foreigners to our shores. There must be some other reason or reasons for the paucity of foreign health-seekers visiting us. The explanation is partly to be found, no doubt, in lack of knowledge on the part of those living on the continent concerning the nature and existence of the medicinal waters of Great Britain. To illustrate this point Dr. WOOD mentions that in a well-known German manual describing the health resorts of Europe there is no mention of any at all in England; and, again, that in a similar French publication, in its forty-ninth year of issue, whereas six pages are allotted to Spain, two are considered appropriate for this country, while various errors and omissions sufficiently indicate the absence of competent revision. This, however, is not entirely due to indifference on the part of foreigners, for Dr. WOOD found that the editor of one such work had vainly endeavoured to procure in London any authentic account of the British spas, while a request was made to Dr. WOOD for an addendum on British seaside resorts to the German translation of his work on "Spa Treatment," as well as an offer of a French translation of a work on British spas. There is considerable difference of opinion as to the precise manner in which "spa" treatment produces its beneficial effects. Some authorities maintain that the waters themselves have but little, if any, effect, and insist that the régime to which the patient is submitted is responsible for the improvement that ensues. Other physicians, again, maintain that the waters have a very definite action, although the exact explanation of the manner in which they act is by no means definite. To these factors must be added a third factor—namely, the psychic—and this in a large number of cases is a powerful one. In the continental resorts, especially those of Germany, the daily life of each patient is carefully laid down; every detail in the hotels and environment of the town is made subservient to therapeutic measures; there are certain outdoor amusements, such as tennis, and at a few of the spas golf, to be obtained, and at many social attractions are a powerful factor. The majority of the visitors, however, are there for treatment and not for amusement, and so the whole of a patient's attention is directed to the daily routine prescribed by the doctor. From a purely medical point of view this plan has advantages. Social amusements, such as dances and concerts, are indeed provided, but for the most part they are held outside the hotels, and terminate at a seasonable hour, so that invalids may find health without being disturbed by younger visitors, who seek only pleasure and no treatment. Another feature of most of the continental resorts is the complete manner in which the surrounding country is supplied with good restaurants or cafés, whereby daily afternoon exercise is encouraged. Added to these characteristics from the point of view of the British visitor is the change from one country to another, the complete difference in thought and surroundings adding to the psychic influence which we have already mentioned. It is here that Dr. WOOD makes a

strong point, for obviously foreign invalids at British resorts would experience the advantages to be derived from a complete change of scene, environment, and ideas that our invalids experience in European sojourn.

Dr. WOOD points out one advantage which the spas in this country enjoy over some of the more favoured continental spas—namely, the cooler climate of Britain, favouring, as it does, all kinds of outdoor exercise. He describes clearly the categories of foreign invalids for whom our spas are typically suitable, including those who thrive in a relatively cool climate and are able to walk well; those who in association with a complete change of environment derive benefit from baths that are neither very hot nor taken necessarily in close succession; and, of course, those whose maladies are held to be suitable for treatment by the principal waters in this country. Foreign physicians might learn much from a visit to the spas of this country. They would find the appliances excellent in every way, and would probably arrive at the conclusion insisted on by Dr. WOOD that continental health resorts should not be regarded as competing with British health resorts nor British with continental. In this connexion a suggestive remark is made by Dr. WOOD, who has found that when treating foreigners in London the sick-room temperature usually has to be kept from one to three degrees Centigrade higher than would be tolerable to English patients. Whether this be due to the longer and colder winters of continental stations having led to more efficient methods of domestic heating, or to the more uniform exposure of the body to a higher mean temperature during the warmer summers, it certainly suggests that foreign invalids may with advantage to themselves find in many of our winter stations convenient summer resorts at the time when they are largely deserted by Britons. British and continental health resorts might prove complementary to one another in this respect, as, probably, in many others.

# Annotations.

"Ne quid nimis."

## THE PSYCHOLOGY OF INTIMIDATION.

"No incident has of late years so impressed the Italian imagination," writes our Florence correspondent, "as the siege of the foreign anarchists in the City of London. The previous acts in the drama which culminated in Sidney-street were not without precedent abroad; the assassination of agents of the public force in the discharge of their duty is by no means unexampled, particularly south of the Alps. But the siege of the 'Fort Chabrol' in Paris, and that of the Via Ottaviano in Rome, sink into insignificance beside the blockade and bombardment of the tenement in the Whitechapel quarter, defended as it was with a desperation that taxed the resources of the 'centre of civilisation' to overcome. At first the foreign critic of the besieging party was inclined to censure, if not to ridicule, its members and equipment, but gradually, as the circumstances became known, the censure and ridicule gave place to genuine admiration of the combined forethought, promptitude, and effect with which the operations were carried out. Nothing short of the means employed could have availed the public force in the time at their disposal, and the result is being laid to heart at more than one Ministry of the Interior where the lesson it conveys may one day have to be repeated. Whether the scene of repression and capture be the interior of a garrison, or a lunatic asylum, or, as in the recent case, a criminally occupied tenement, the agencies employed must always be far in excess of those apparently sufficient. The impression on the individual or individuals aimed at must be produced that the means of capture and coercion make resistance hopeless. In lunatic asylums, especially south of the Alps, this, the psychological, element in dealing with the violently aggressive or recalcitrant subject has long been left out of account, with consequences all too deplorable both to the party coercing and the party coerced. No maniac is ever so furious as not to be impressed by the overwhelming forces antagonising him; the 'belva umana' shares the instinct of his animal counterpart in resigning himself to *force majeure*. Forty years ago the columns of THE LANCET were the arena of animated discussion on alleged deeds of violence perpetrated in lunatic asylums on patients whose recalcitrancy had goaded the *personnel* out of self-control, and cases were referred to in which the keeper had thrown the lunatic down and by travelling over his prostrate body on his knees had fractured one or more of the ribs and thus reduced the wretched man to impotency—with traumatic pleurisy as the result. Evidence was adduced that once deeds of violence, occurring rarely, if at all, in the British Isles, were by no means uncommon in France and Italy, where the *personnel* in charge of the inmates of asylums was so inadequate in number that loss of temper on the part of the keeper, goaded past endurance by refractory cases, drove him to the hideous practice of rib-breaking referred to. Such abuses having become known, the remedy of reinforcing the *personnel* and bringing it up to something like the proportion regarded as *de rigueur* in the British Isles was put in practice on the continent. The violent lunatic, overawed by the superior force antagonising him, ceased to be refractory, relapsed into sudden calm, and so spared the *personnel* the extra call on its patience, and himself the rough usage of an angry and provoked attendant. The 'psychology of intimidation,' thus recognised in treatment, now explains the lessened frequency of deeds of violence in the asylums of Southern Europe. The same influence must be used where degenerate man, exemplified in the violent criminal, the revolutionary desperado, the law-defying, law-subverting anarchist, manifests his baneful activities; he too must see the hopelessness of contending with overwhelming force."

## CHOLERA IN MADEIRA.

WHILE the cholera epidemic at Madeira appears to be undoubtedly on the decline, the island is still practically isolated and postal communication is fitful. We have received a further letter from our special correspondent there, dated Dec. 31st, 1910, in which he says: "The official figures on the 30th of December show a total of 1245 cases and 360 deaths since the commencement of the epidemic. In Funchal itself 1 case was reported on the 30th inst., and the outlying parishes yielded 5 cases. The activity of the disease seems far spent, and the mortality, much lessened now, was never very heavy in percentage. No English person has been attacked, nor any of the Portuguese above the lowest stratum of their society. The medical work has been good, and illustrates emphatically the proficiency of our Portuguese colleagues in modern bacteriological and clinical methods." It is interesting to receive so excellent a report of the progressiveness of our Portuguese colleagues, and we hope that their efforts will now be vigorously seconded and their

requirements promptly met by the Portuguese Government, so that the island may not suffer too severely from the protracted lack of communications. One of the chief obstacles in all such epidemics is the hostility, through ignorance, of the lower classes, whereby efforts to improve the sanitary conditions and prevent the spread of disease are either secretly frustrated or lead to active rebellion. According to the *Times* correspondent, the latter condition has occurred in Madeira, the populace resisting the removal of cases for isolation, so that local troops had to be called out, and it has even been found necessary to supplement them by sending from Lisbon a battalion of the Sixth Infantry 600 strong.

## THE IPECACUANHA TREATMENT OF AMŒBIC DYSENTERY AND ACUTE HEPATITIS.

SOME drugs, like some fashions in dress, have their day and are soon forgotten. Occasionally, however, a particular remedy is revived and comes again into favour. A recent instance of this is the employment of ipecacuanha in the treatment of amœbic dysentery and its formidable sequela acute hepatitis. For a long time this drug enjoyed a high reputation, being regarded almost as a specific by some authorities like MacLean. Gradually, however, the drug lost its reputation and sank into disuse, except, perhaps, with some practitioners in India who had proved its utility by long experience. The reasons for this waning of popularity of ipecacuanha with the profession are not easy to find. Perhaps some gave it up because there was no scientific explanation of its apparently specific action. Others may have had lack of success through administering it in insufficient doses or without observing the due precautions which are necessary. Some may have abandoned it finding that the drug lost its special properties when kept for any length of time in a hot climate, or it may have been employed in some of the bacillary forms of dysentery, in which its action appears not to be so potent. It is largely through the efforts of Major Leonard Rogers, professor of pathology in the Medical College, Calcutta, that ipecacuanha has recently been restored to favour. In his well-known work on fevers in the tropics he pointed out that the ipecacuanha treatment of amœbic hepatitis prevented the occurrence of suppurative hepatitis, or tropical liver abscess; that this complication could be entirely avoided if the treatment by ipecacuanha were employed. This, he suggested, might well be included in the list of maladies which recent research work has largely conquered. Deaths from hepatic abscess in the British army in India have, it appears, within the last three years been reduced by nearly two-thirds, and they are still decreasing. Further valuable evidence in support of Major Rogers's contentions has been recently forthcoming in the form of a series of papers read before the Medical Section of the Asiatic Society of Bengal by Colonel H. W. Pilgrim, I.M.S., surgeon-superintendent, Presidency General Hospital, Calcutta: Lieutenant-Colonel F. J. Drury, I.M.S., principal, Medical College, Calcutta; Lieutenant-Colonel J. T. Calvert, I.M.S., professor of materia medica, Medical College, Calcutta; Lieutenant-Colonel A. H. Nott, I.M.S., civil surgeon, Howrah; and Captain Greig, I.M.S. These papers were published in September last in the pages of our contemporary, the *Indian Medical Gazette*, and have now been issued in pamphlet form, containing also a brief summary of the discussion which followed the reading of the papers. The evidence of Colonel Pilgrim is specially convincing. He asserts that during the last three years all his cases of dysentery treated by ipecacuanha have done well, as also his cases of hepatitis. In not a single case of dysentery so treated has hepatitis occurred as a complication, and every patient coming under his care with hepatitis already established has, under ipecacuanha treatment, recovered without passing through any stage of suppuration. In these days when faith in drugs has grown weak the evidence brought forward by Major Rogers and supported by Colonel Pilgrim and his colleagues deserves the most serious attention of all who are called upon to treat amœbic dysentery and its sequelæ.

## THE PROPOSED ESSEX MEMORIAL TO THE LATE KING.

THE Earl of Warwick, Lord Lieutenant of Essex, recently presided at a public meeting held in the county town to agree upon some form of memorial to the late King, it having been decided at a previous meeting that the memorial should be one having for its object the prevention and cure of consumption on "the Lyster system." Immediately the meeting commenced it was obvious that the conveners had no definite proposals to submit, relying upon the resolution passed at the previous meeting that an association should be formed with the object of encouraging local authorities to provide shelters, such as are known as "Dr. Lyster's shelters," for the isolation of consumptive patients during treatment. Dr. Thresh, the county medical officer of health, pointed out that if the proposed association limited its functions to merely encouraging authorities to provide shelters the movement could hardly be considered a memorial to the late King. He suggested that funds should be raised for providing a central institution for the reception of cases of phthisis, and that it should be organised on such a basis that the board of management would not be dependent upon private subscribers for its support. The suggestion did not meet with general approval, but no other feasible proposition was submitted. Certain of those present wished to have the Lyster system, and the Lyster system only, and appeared to be under the impression that it could be adopted without the provision of any institution. What the Lyster system is was not defined. Mr. A. E. Lyster, medical superintendent of the Alfred Boyd Memorial Sanatorium, and Poor-law medical officer for the Great Baddow portion of the Chelmsford Union, has popularised the use of canvas tents or shelters for the treatment of phthisis cases under his care, these shelters being erected in backyards or gardens. The construction of the shelters and the methods of treatment adopted should surely have been before the meeting, as well as any statistical evidence that has been adduced to show that treatment in these shelters produces better results than can be otherwise obtained. The county of Essex can hardly adopt as a memorial to the late King the maintenance of a therapeutic system which has never been accurately defined, but which appears to mean the provision of shelters in all parts of the county, combined with supervision by a medical man, who is to devote his whole time to visiting the shelters and seeing that they are correctly used and that the patients are properly treated. The proposal can never meet with general acceptance. Sanitary authorities and boards of guardians, having the necessary legal powers, may provide shelters, but it would be unreasonable to suppose that their medical officers would welcome the interference of anything like the association proposed. The very suggestion has caused members of the medical profession to hold aloof from the memorial movement. The committee appointed to consider the memorial includes a number of representative members of our profession, and it is to be hoped that they will serve and assist in devising some form of permanent memorial which shall be worthy of the county. If the prevention of tuberculosis and its cure are

to be the objects, some central institution must be provided, and its managers must not be bound to any particular system of treatment, but must be free to adopt any system which their medical advisers believe to be the best. The suggestion made by the county medical officer appears a feasible one, and if properly carried out would provide a memorial worthy of the name. Dr. Thresh pointed out that upon a sufficient area of land a good administrative block could be erected, capable of further extension if and when desired, and shelters could be provided as required. Temporar canvas shelters may, or may not, be the best for institutional purposes, but it would be easy to compare them with the permanent accommodation provided at the Benenden Sanatorium, where the cost per bed has not exceeded £100, exclusive of land. Canvas shelters may be economical and particularly useful for home treatment, but it does not follow that they are equally economical for institutions, since the cost of maintenance and administration must be considerably greater with such comparatively flimsy structures than with shelters or ward blocks of a more substantial character.

## INFANTILE KALA-AZAR IN TUNIS.

FOR some time past the workers at the Pasteur Institute of Tunis have been engaged in studying a peculiar and special infection occurring in the children of that district. Already 20 cases are on record, and an interesting *résumé* of the chief facts at present discovered in regard to it is given by M. Charles Nicolle, the director of the Pasteur Institute of Tunis, in a communication [1] made to the Congress of Medicine at Trapani. As a rule, the disease commences during the course of the second year; occasionally it attacks children of 3, 4, or even 6 years, but this is rare. So far it has only been observed in children. All races, both European and native, living in Tunis, appear liable to its incidence, but it is more common among Italians. Its onset is insidious, and at this stage diagnosis is difficult, but when the disease is well established it presents somewhat characteristic symptoms. There is extreme anæmia, emaciation, marked enlargement of the spleen, and to a less degree of the liver, fugitive œdema, a very irregular temperature, definite acceleration of the pulse-rate, digestive disturbance, and mononuclear leucocytosis. Hæmorrhages are not infrequent and a bullous eruption may occur. In order to establish the diagnosis and to distinguish the disease from other conditions leading to enlargement of the spleen, which are not uncommon in children in Tunis, it is necessary to demonstrate the presence of the parasite. This is readily done by examining the fluid obtained by puncture of the liver or the spleen. The parasite is a protozoon of the genus Leishmania, identical in its morphological characters with that found in kala-azar in India, and also with that of Delhi boil, except that it is slightly smaller. Post mortem the only changes found are the enlargement of the liver and spleen and the red colour of the bone marrow. The parasites occur in enormous numbers in the spleen, liver, and bone marrow, less commonly in other organs. They are sometimes free, at others enclosed in the large mononuclear leucocytes. The general characters of the disease appear to be identical with those of the Indian kala-azar, but since it apparently occurs only in children, M. Nicolle and his co-workers have applied the name of Leishmania infantum to the parasite to distinguish it from the Leishmania donovani of Indian kala-azar and Leishmania tropica of Delhi boil. The protozoon of infantile kala-azar can be readily cultivated upon the medium of Novy-MacNeal, and the cultures can be repeated indefinitely. The disease can be inoculated into the dog or monkey, but in other animals only a temporary infection results, or they may be completely refractory. In the dog the infection may last for several months and then undergo spontaneous cure, or it may lead to cachexia and death. In the monkey the course of the affection is more closely similar to that in the human subject. Since it appears that the disease may occur spontaneously in dogs, M. Nicolle suggests that these animals may be the cause of the human cases. The disease appears not to be confined to Tunis, since cases have been observed in Italy, Malta, and Portugal (Lisbon). In discussing the possibility of the identity of the infantile disease of Tunis with the Indian kala-azar, M. Nicolle is of opinion that further observations upon the latter disease are necessary. Notably he recommends that attempts shall be made to grow the Leishmania donovani upon the Novy-MacNeal medium, and attempts made to inoculate dogs from these cultures. The disease has so far proved to be of uniformly bad prognosis, and no treatment, in spite of numerous trials, has proved of any value.

[1] Archives de l'Institut Pasteur de Tunis, Part 3, 1910, p. 109.

## THE WEATHER OF DECEMBER.

THE weather of December was very similar to that of November in its rainfall over the United Kingdom, or at all events the greater portion of it, but very different in its temperature. While November will rank as one of the coldest eleventh months on record, last month will take its place among the very mildest of Decembers. During the first three weeks the warmth ranged from between 4° and 7° above the average in all parts of the country, and the last week, although much less warm, was still mild for the time of year over a large part of the kingdom. Frost was rare even on the ground, and some localities in the south-west and west were entirely exempt. Even in London the screened thermometer only recorded frost on three nights—the 28th, 29th, and 31st—and then it was very slight. The mean temperature of the nights in the metropolis was about 6° above the average. The temperature of the afternoon was scarcely so abnormal, but the mean was as much as 4½° above that of an average December. The temperature of December may be lower than that of November, and at the same time in excess of its average, but in the present instance December was not only relatively but actually milder than November. In London the mean maximum temperature (49°) was 3° higher than the corresponding figure in November, and the mean minimum (41°) as much as 8° higher. Shade readings of 50° or a little above occurred on more than half the days over a large part of these islands; in London there were 18 days with that unusual winter mildness, and many more with readings between 46° and 49°. On the south-west coast the temperature was, of course, higher than in London; at Torquay the mean maximum was 50½° and the mean minimum only 8° lower. As might be expected from the high thermometer the wind was almost always in the equatorial quarter, the only occasions when the contrary was the case being the north-westerly to northerly current which sprang up in the rear of some of the numerous depressions as they travelled away to the continent. And as it is almost impossible to experience a mild December without the presence of a series of depressions over these islands or in their immediate neighbourhood to the northward it is not at all surprising that the month was very wet. The serious inundations arising from the heavy and almost daily rains, following a month nearly as wet, were responsible for much damage to property, but the flooded area was not nearly so extensive as it has been on more than one occasion during the past 20 years, especially in the valley of the Thames, where particular precautions were successfully

taken. All parts of England, with the exception of a few isolated localities, experienced rain much more frequently than usual, and the aggregate fall was greatly in excess of the normal. The last week, however, was comparatively dry, as well as more sunny, than the three preceding. In London (Westminster) there were 23 days on which more or less rain was registered, and the total fall—3·08 inches—was 56 per cent. more than the average for the month. In several parts of Scotland and Ireland there was less rain than during an average December; at Leith and on the north-west coast of Ireland the fall was only about 48 per cent. of the normal. The rainfall of the whole year was not excessive over the kingdom generally, although the number of days with rain was very high. In London (St. James's Park) the total was 23·37 inches, or only 96 per cent. of the average. On the south coast of Kent, on the other hand, the aggregate was very heavy, amounting at Dungeness to 35·51 inches, or 56 per cent. more than the average. In the metropolis there were 201 days with at least 0·01 inch of rain, and this number is 36 in excess of the normal. December on the Riviera was not marked by any special feature, except that rain was more frequent than usual. During the first fortnight or so the temperature in the shade during the afternoons was about 52°. Subsequently the conditions were both colder and drier. Italy was warmer than the Riviera until near the end of the month, and experienced several spells of rain.

## THE HISTOLOGICAL EVIDENCE THAT TOXINS REACH THE SPINAL CORD VIA THE SPINAL ROOTS.

AN interesting and important communication from Dr. David Orr of the County Asylum, Prestwich, and Dr. R. G. Rows of the County Asylum, Lancaster, is published in the *Review of Neurology and Psychiatry* for December last, containing an account of further experimental work on the question of toxic invasion of the central nervous system. In 1907 these observers demonstrated in a most conclusive manner that the ascending lymph stream in nerves is a path along which infection of the brain or cord can readily occur, thus establishing the reality of what is known as ascending neuritis. Our comparative ignorance, however, of the whole lymphatic system of the brain and cord, and, for that matter, of nerve roots and trunks, has led to some under-estimation of its significance for the development of certain nervous diseases, and we feel sure therefore that a consideration of the facts presented in this paper cannot fail to convince the reader tha the problems connected with the pathogenesis of many nervous conditions are on a fair way towards being solved. Poliomyelitis acuta is an acute inflammatory process; general paralysis of the insane is of a chronic inflammatory nature; but in each instance the pathological changes in the vessels and supporting tissues are not comparable with the lesions resulting from a general blood infection. Study of the cerebro-spinal fluid and of the lymph currents in the central nervous system is more likely to be of profit than an examination of the constituents of the blood. In the present series of experiments the authors placed a sealed celloidin capsule containing a broth culture of an organism under the gluteus muscle of rabbits and dogs in contact with the sciatic nerve. Three separate organisms were employed—viz., staphylococcus aureus, a diphtheroid bacillus from a case of general paralysis, and the bacillus botulinus. The histological changes induced by the toxins in the nerve were similar in each instance—a most important observation, confirming the non-specificity of the histological characters of toxi-infections. A very definite reaction was found in the whole course of the sciatic nerve, through the posterior root ganglia, and along both anterior and posterior spinal roots. The toxins induce inflammatory phenomena in the fixed tissues, such as the epineurium and the perineurium, and in the veins and capillaries both inside and outside the nerve; it is instructive to note that no reaction was observed in connexion with the arterioles. Away from the immediate neighbourhood of the toxic focus the severity of the reaction diminishes, and the character of the cell reaction changes. Thus, where the phenomena are acutest there are many proliferating fibroblasts; the further we go from this area the more plasma cells do we find, so that plasma cell formation becomes the most prominent indication of irritation in those regions where there is reason to presume that the toxin has been to a great extent neutralised by the reaction of the tissues. The hæmatogenous elements do not participate in the inflammation. The striking similarity between the perivascular changes produced experimentally by the authors and those that are so familiar in connexion with general paralysis suggests that the toxin of the latter condition is to be found in the lymphatic system. Due weight must therefore be attached to the concluding statement of the paper: "There is a great deal of evidence to show that the 'bacillus paralyticans' of Robertson and McCrae is a pathogenetic factor of much importance, but as we have obtained exactly the same morbid phenomena with two other organisms, we cannot accept the specificity attached to it."

## DISINFECTING IN RURAL DISTRICTS OF FRANCE.

FOR many years now in the large towns of France disinfecting stations have been established that are models of skilful organisation and good management. The practice of disinfection in sparsely populated villages and rural districts is, however, in quite a different position. The more scattered the population the heavier the cost of disinfection and the smaller the local revenues to meet this expenditure. The great French Public Health Act of Feb. 15th, 1902, was such a radical measure that evidently time had to be allowed for its application, but the results are now beginning to make themselves felt. Among these there has been in several departments a determined effort to grapple with the difficulties of disinfection in rural districts. We have before us a very complete and detailed account of this service as established in the department of the Seine-Inférieure, by Dr. Charles Ott, head of the sanitary service, and M. Martial Basilaire, Chief of Division of the Prefecture of the Seine-Inférieure. The principal towns of this department are Rouen, Havre, and Dieppe, and these having their own *Bureau d'Hygiène* are, of course, not under consideration. The rural service extends over the remaining 757 communes, comprising a few minor towns and nearly 600,000 inhabitants. There are two sorts of disinfection—the "shallow" or surface, and the "deep" or thorough, if we may translate literally the French words. But though these terms have been consecrated by extensive use, the authors of the report mentioned prefer to speak of disinfection during illness and disinfection after illness. The one and the other must, according to the rules laid down, be supplied at the latest within six hours of the receipt of the orders to proceed. Therefore the posts of disinfectors must be so scattered that the most distant and inaccessible dwelling can be reached from one of them within six hours. For this purpose the "surface" disinfector travels on a bicycle, as he need only carry some disinfectants with him. With these he makes a solution when he arrives, and shows those who attend on the patient how to soak the soiled linen in it, and generally how to keep the place clean so as

to minimise the danger of spreading the disease. Afterwards a sanitary motor-car brings a disinfecting apparatus that can be pulled to pieces, packed in a small space, and set up when the house is reached. In this case, objects to be disinfected are exposed for two hours to the action of formaldehyde vapour. Then there are two spraying apparatus for the walls and floors within the house; a small stove for disinfecting clothes, overalls for the disinfectors to wear, and airtight sacks in which bedding and other objects can be placed and carried away. The disinfectors are paid regular salaries and no casual labour is employed for this work. Minor disinfecting posts have been established in the chief towns of the 13 *arrondissements* that group together the 757 rural communes of the department of the Seine-Inférieure. These serve for the disinfectors who render the first aid and travel on bicycles. The sanitary motor cars are best kept in a large town, and Rouen is the most central town. In this matter we are glad to note that the position of the medical adviser has not been overlooked. By law he is compelled to notify all cases of infectious diseases, but that is all. The local authorities felt, however, that, especially by reason of the considerable moral influence he can, as a rule, exercise over his patients, the medical man might very effectively aid in the work of disinfection. First, he might prepare the patient and his attendants for the arrival of the disinfectors, then advise them to carry out strictly the instructions given, disarm all spirit of resistance, and ensure the successful accomplishment of the disinfector's task. Consequently the authorities have resolved to pay a fee of 2 francs for every notification given, accompanied by the offer to help in the sense indicated above. It is a great point that the principle of payment for such service should now be recognised in France; and altogether the organisation of disinfection in these rural districts seems to be very carefully and fully planned.

## PHARMACEUTICAL EDUCATION.

IN pursuance of the powers vested in it by Section IV. of the Poisons and Pharmacy Act, 1908, the council of the Pharmaceutical Society contemplates the framing of by-laws requiring candidates for the qualifying examination in pharmacy to undergo a definite course of tuition. It is also proposed to divide the examination into two parts, and at a meeting on Jan. 4th the council had before it a scheme, covering both objects, which had been drafted by the Examination and Education Committee. This suggested scheme, which is to be submitted to local pharmaceutical associations and schools and colleges of pharmacy with the object of eliciting expressions of opinion concerning it, embodies proposals which, if put into effect, would alter very considerably the Pharmaceutical Society's requirements as to education and examination. It proposes a division of the qualifying examination into two parts—final and intermediate. A candidate for the intermediate examination would be required to produce evidence that subsequent to passing the preliminary examination and being registered as a student he had attended lectures with regularity and had performed the accompanying work in the class and in the laboratory, in a teaching institution approved by the council. The lectures and work specified are as follows: not less than 50 lectures in botany, 25 hours' work in practical botany, 100 lectures in chemistry, 300 hours' work in practical chemistry, and 25 lectures in physics. Before entering for the final examination he would be required to produce evidence that he had been engaged for three years after registration as a student, under the supervision of a registered chemist, in the ordinary work of pharmacy, and that he had attended not less than 60 lectures and demonstrations in materia medica, 30 lectures in pharmacy, and 20 lectures in dispensing and prescription Latin, and had done 200 hours' work in practical pharmacy and 100 hours' work in practical dispensing. It is not proposed to extend the scope of the syllabus or to raise the standard of the examination. At the same meeting of the council a report from the Parliamentary and General Purposes Committee was received and adopted to the effect that the Privy Council be urged to authorise an investigation into the conditions under which the storage, compounding, and dispensing of medicines and their distribution are carried on in surgeries and dispensaries of medical practitioners and in similar establishments in Great Britain.

## THE DIAGNOSIS AND NOTIFICATION OF YELLOW FEVER.

Sir Rubert W. Boyce has stated[1] that it seemed strange that there should be obstacles in the way of the diagnosis and notification of yellow fever, and added that in all the outbreaks that he had had to investigate he had encountered them. It is not surprising that this has aroused considerable attention, and at the last meeting of the Society of Tropical Medicine and Hygiene on Dec. 16th last a medical man from Trinidad commented on what was called the "to some extent justifiable desire of the authorities to prevent notification of yellow fever cases," and deplored the fact that "the name of Trinidad undoubtedly and deservedly stinks in the nostrils of its neighbours on account of its suppression of damaging information." Another opinion communicated to the meeting by a medical man from the Gold Coast was that Sir Rubert Boyce had made a very grave assertion in declaring that there had been a universal conspiracy to deny the presence of yellow fever. "What possible reason," asked this gentleman from the Gold Coast, "could medical officers have for cloaking the disease?" The executive authority, he continued, must be slow to place a colony under quarantine, but he could not imagine that it had ever refused to do so once satisfied by the medical department of the existence of yellow fever. Perhaps the most reasonable view of the matter was put forward by Dr. C. F. Harford, physician to the Church Missionary Society and principal of Livingstone College, who observed that the facts of the case might be explained without attributing to the medical profession either an attempt to conceal unpalatable truths or ignorance in diagnosis; and until this was definitely proved it was only just to give them the benefit of the doubt, especially when it was remembered that there was no absolute scientific test of the diagnosis of yellow fever; in fact, there was every excuse for failure to recognise the disease where it was not believed to be endemic unless several characteristic cases were met with at the same time. Most writers on yellow fever emphasise the difficulties connected with its diagnosis, the symptoms being subject to considerable variations. Some cases, for example, may be of the fulminating sort and terminate fatally within 36 hours; while in other instances the manifestations of the malady may be so mild that the patients are able to go about all the time and carry on their usual avocations. Some, indeed, of the mild abortive cases present no definite clinical characters which can distinguish them from an ordinary febricula. Unfortunately, for the present, bacteriology is unable to lend assistance in establishing the diagnosis of yellow fever. It is therefore small wonder that medical men at times fail to recognise the disease, more especially at the beginning of an outbreak. When the well-marked symptoms, described in the text-books, develop the diagnosis becomes less difficult, and the disease cannot then be overlooked. Sir Rubert Boyce's views on the endemicity of yellow fever in West Africa are both valuable and interesting;

[1] See THE LANCET, Nov. 26th, 1910, p. 1552.

and his conclusions, though somewhat sweeping, may be perfectly correct. But it cannot be said that he has submitted proofs of a sufficiently convincing kind to lead to the immediate and general acceptance of his opinions. Further investigation, with the collection of additional evidence, is needed before it can be unhesitatingly asserted that yellow fever is now, and has for a long period been, endemic in West Africa. The debate on the subject will be continued at the meeting of the Society of Tropical Medicine and Hygiene on Jan. 20th next.

## A VIEW OF THE HOUSING AND TOWN PLANNING ACT.[1]

Dr. Thresh has made, we believe, the first report under the conditions imposed on the rural district councils by the Housing and Town Planning Act, and takes therein the occasion to make some pertinent remarks on the working out of that Act. He lays down various conditions as essential to a healthy house and discusses them in detail. With regard to the inspections ordered by the Local Government Board these are so much more exhaustive than heretofore that if the medical officer of health is to make them it will be necessary to appoint to that office only one who can give his entire time to his duties, and there will be plenty to keep him fully employed; if, on the other hand, the inspector is to add this duty to those already incumbent on him before the passage of the Act it will be necessary for him to have assistance in the enormous amount of clerical work involved. The author's experience leads him to the conclusion that the Act will not only benefit the working classes by greatly improving housing conditions in all rural districts, but by raising the sanitary standard will benefit all classes of residents also.

## ENLARGEMENT OF THE SUPERFICIAL THORACIC GLANDS AS A SIGN OF PULMONARY TUBERCULOSIS.

MANY clinicians have called attention to an enlargement of the lymphatic glands which lie beneath the skin of the thorax in relation to the fourth and fifth intercostal space in the mid-axillary line, and which can be felt and sometimes seen in a certain percentage of cases of pulmonary and pleural tuberculosis. E. v. Zebrowski[2] has recently brought forward figures to show that in about 20 per cent. of adults afflicted with this disease an enlargement in these glands can be detected. W. Schulze[3] confirms this observation, though the percentage was somewhat lower in his cases, but at the same time he publishes notes of a case which seem to show that this cannot be relied on as a sign of tuberculosis as opposed to other pulmonary disorders. The patient, a boy aged 7 years, came under treatment for pyrexia with vomiting. The pulse-rate was 160 per minute, the respiration-rate 48, and the temperature over 105° F. By the usual methods of examination no physical signs of pulmonary disease were found, but skiagraphy discovered a shadow over the whole right pulmonary area, especially in the neighbourhood of the upper lobe. For three weeks the fever followed an irregularly hectic course, but the tuberculin test, applied by Moro's method, was negative. The axillary and inguinal glands were enlarged, and there was a gland about the size of a pea in the fifth right intercostal space near the mid-axillary line. Under local anæsthesia this was excised; half was examined histologically and the other half injected into the peritoneal cavity of a guinea-pig, but by neither means was any evidence of tuberculosis forthcoming. After remaining above normal for five weeks the temperature gradually fell, the other symptoms disappeared, and the X ray shadow was no longer to be seen. The case must therefore be regarded, in Schulze's opinion, as one of central pneumonia running an atypical course, though at first it seemed likely to prove tuberculous; and he brings it forward as evidence that tuberculosis is not the only infection of the lung which leads to enlargement of the lymph glands beneath the skin of the thorax.

[1] Report of the Housing of the Working Classes in Ingatestone. By John C. Thresh, M.D Vict. Chelmsford: John Dutton. 1910.
[2] Deutsche Medizinische Wochenschrift, 1910, No. 28.
[3] Münchener Medizinische Wochenschrift, 1910, No. 51.

WE publish on p. 77 of this issue of THE LANCET the address with which Dr. T. B. Hyslop, late resident physician at Bethlem Hospital and President of the Society for the Study of Inebriety, opened a debate in that society on Tuesday last on the Influence of Parental Alcoholism on the Physique and Ability of Offspring. No representative of the Eugenics Society was present at the meeting, a fact commented upon by Sir Victor Horsley in promising to draw attention in the immediate future to Professor Karl Pearson's startling conclusions. Mrs. Scharlieb, Dr. C. W. Saleeby, Dr. W. C. Sullivan, Dr. E. Claude Taylor, Canon Horsley, and Mr. Theodore Neild also took part in the discussion.

THE Hunterian Oration of the Royal College of Surgeons of England will be delivered by Mr. Edmund Owen in the theatre of the College on Tuesday, Feb. 14th, at 4 P.M. The President and Council will give a dinner at the College the same evening.

## THE NEW GERMAN PHARMACOPŒIA.

THE new edition of the German Pharmacopœia—the fifth since the creation of the empire—has now been issued, and in many respects it presents an entire departure from the usual attitude adopted by its authors. It may be mentioned that now this work is elaborated by a special Commission of the Imperial Sanitary Council, composed of 26 members, including Government medical officers of health representing the more important German states, professors of pharmaceutical chemistry, botany, chemistry and pharmacognosy, and a number of pharmacists in business. In addition to the above, representatives of clinical medicine, veterinary surgery, bacteriology, the Patent Office, the War Office, and others were called upon to attend the meetings of the Commission, and in order to have a true picture of the materia medica at present in use in prescription work a circular was issued by the governments to 125 of the larger town and country pharmacies asking for information as to the frequency with which official preparations occurred on prescriptions, and also concerning older non-official articles. It must be remembered that in Germany practitioners are forbidden to dispense their own prescriptions, hence this step to establish the degree of popularity of various remedies.

The new Pharmacopœia has been most thoroughly revised, and its chemical as well as microscopical methods of analysis of chemicals and vegetable drugs speak most favourably for the high standard of scientific training of the German pharmacist. The microscopic analysis of drugs has been most minutely described, the dimensions of cells being indicated in micro-millimetres, and an estimation of the active principles is prescribed in almost every instance in the case of the more important drugs. It is interesting to note that the Commission distinctly states in the preface to the volume that it had been decided to make this book more useful to the physician by the addition of a certain amount of information not otherwise incorporated in the Pharmacopœia. This departure from the traditions of the *Pharmacopœia Germanica* has been effected by the inclusion of references to the content of active ingredients in each official substance, and of the impurities to be revealed by the application of each prescribed test, so that the reader can at a glance judge of the strength and purity of any given substance. Thus, we read that sodium bromide contains 94·3 per cent. of NaBr, or 73·2 per cent. of bromine; atoxyl, 24·1 to 24·6 per cent. of arsenic; iron and quinine citrate, 9 to 10 per cent.

quinine and 21 per cent. iron; sodium carbonate contains at least 37·1 per cent. of anhydrous $Na_2CO_3$; cinchona bark at least 6·5 per cent. of quinine and cinchonidine; while in the case of nux vomica not the content of strychnine alone is assayed for, but a mixture of the two principal alkaloids—strychnine and brucine.

Among the changes introduced in the formulæ of galenical preparations we note the use of arachis oil instead of olive oil in a number of liniments, and of soft paraffin in the place of paraffin ointment in several ointments. The additions to the present edition constitute no less than one-eighth of the total 671 monographs. Considerable surprise has been caused by the method adopted with regard to the inclusion of the newer synthetic remedies, of which 20 have been included. It has hitherto been the custom of the authors to totally ignore the protected name of such preparations, and therefore the full chemical designations were adopted in the last edition—viz., "pyrazolonum phenyldimethylicum salicylicum" for salipyrin. It has been recognised that such a course is in many instances not consistent with practical everyday requirements, and therefore in the case of exceptionally long chemical names (such as is the case with novocaine, pyramidon, and stovaine) the registered appellation has been adopted as the title, followed by the scientific name; and in other cases—e.g., acidum acetylosalicylicum, acid. diæthylbarbituricum, æthylmorphinum hydrochloricum—where the chemical name is not too unwieldy, the latter figures as the title, followed by the registered designation as a sub-title (in the above examples: aspirin, veronal, dionin). It is, however, distinctly stated that the question of dispensing such preparations must take place in accordance with the provisions of the law on registered trade marks; both protected product and its "substitute" must correspond to the tests laid down in the Pharmacopœia. We see that in this instance the authorities—the volume receives the sanction of the Federal Council and is enforced by the Imperial Chancellor—have not hesitated to dictate to the manufacturers of protected products included in the Pharmacopœia the degree of purity that the latter must possess, a step that is bound to call forth considerable comment.

The following potent drugs have been added to the Pharmacopœia with the stated maximum doses. It may be remarked that the latter also apply to the dispensing of the substance in the shape of eye lotions, hypodermic injections, clysters, suppositories, and inhalations:—

| | Maximum single dose. | Maximum amount during 24 hours. |
|---|---|---|
| Arsacetin | 3 grains. | — |
| Atoxyl | 3 ,, | — |
| Dionin | ½ grain. | 1½ grains. |
| Duotal | 15 grains. | 45 ,, |
| Heroin hydrochloride | 1-12 grain. | ¼ grain. |
| Lactophenin | 8 grains. | 45 grains. |
| Pyramidon | 8 ,, | 24 ,, |
| Scopolamine hydrobromide | 1-120 grain. | 1-40 grain. |
| Suprarenin hydrochloride | 1-64 ,, | — |
| Theophylline | 8 grains. | 24 grains. |
| Urotropin | 15 ,, | 45 ,, |
| Veronal | 12 ,, | 24 ,, |

In addition to the above preparations we note the inclusion, among others, of aspirin, ethyl chloride, anæsthesin, colloidal silver (collargol), sodium nitrite, physiological saline solution (to be dispensed sterilised), protargol, cortex simarubæ, eucaine B., liq. aluminii acetico-tartarici, novocaine, ol. arachis., ol. sesami, pasta zinci salicylata, medicated soaps, antitetanic serum, stovaine, tannalbin, tannigen, tannoform, tropacocaine hydrochloride, ung. argent. colloïdalis.

Among the articles which have been dismissed figure: acid. hydrobrom., aqua picis, fol. jaborandi, fol. nicotianæ, fruct. papaveris immaturi, herba conii, lithium salicylicum, vin. colchici, and vin. ipecacuanhæ.

An interesting addition to the present edition has been made in the inclusion among the appendices of a list of formulæ and reagents for preparing tests employed in biological analyses. These include the reagents used in demonstrating the presence of pathological substances in urine, such as albumin, sugar, pentoses, acetone, aceto-acetic acid, urobilin, urobilinogen, bile pigments, indican, iodine, salicylic acid, blood, and for applying the diazo reaction; further, the reagents for testing stomach contents and blood; stains for bacteriological work; and, lastly, a description of cedar oil, canada balsam, and xylol for use as microscopic mounts.

In the article on suprarenin hydrochloride, which bears the chemical name o-dioxyphenyl-ethanolmethylamino-hydrochloride, it is described as the hydrochloride of the vaso-constrictor substance of the suprarenal gland, and is either prepared from the latter or obtained synthetically; it is marketed under the names adrenalin, paranephrin, epinephrin, and epirenan in the shape of sterilised solutions to which a preservative has been added. It is forbidden to dispense solutions which are coloured red or have become cloudy.

In view of the expected new edition of the British Pharmacopœia the above work should prove of special interest to those entrusted with the elaboration of our Imperial Pharmacopœia. It only remains to be seen to what extent the stringent scientific and practical requirements of the German volume are compatible with actual conditions.

## MEASURES FOR THE REDUCTION OF INFANTILE MORTALITY IN BAVARIA.

IN a Bavarian Ministerial Circular, dated Dec. 9th, 1907, certain general principles were outlined for the control of infantile mortality. The Central Department for Infant Care (Imperial Health Office of Germany), as the result of accumulated experience, has partly reconstructed and partly reaffirmed these principles, and in an order of the Minister of State for Internal Affairs, dated Jan. 20th, 1910, and addressed to the Royal Government, officers for home affairs, district and parochial boards, and district physicians, the department has suggested suitable rules and regulations. It has been found impossible to go into detail upon every matter owing to the differences caused by local conditions, the amount of money at the disposal of the boards, the density of population, facilities for transit, economic conditions, and method of livelihood of the people, &c., but certain guiding principles have been laid down. In purely rural districts it is recommended that the work of infant care, in conjunction with the conscientious superintendence of the "boarding-out system," should be confined to careful arrangement for guardianship, and the carrying out of enactments for the protection of mothers, supplemented by continuous popular instruction both verbal and written, a work in which clergymen, physicians, and midwives should be induced to take an active part. In large communities where various associations take a share in the work of infant protection the creation of a local central department is recommended which would coördinate separate efforts. The business of such a "care association" should be to support poor lying-in mothers and to seek out and advise pregnant single women, to establish dispensaries under medical supervision and in connexion with them, milk depôts, and crèches where women could go to suckle their children.

Infant care is considered under the headings "Unrestricted" and "Restricted," the latter referring to measures and institutions for the benefit of children whose parents are not necessitous. The institutions are to be regarded as belonging to the class of working-men's benefit institutions, and should be worked in conjunction with other schemes which are carried on for the benefit of the local working-class population, whether voluntary or municipal. Such agencies are philanthropic guilds, municipalities, and the larger manufactories. Contributions for their working are provided out of State funds for infant care or the surplus of State insurance societies.

### *Instruction.*

The spread of the knowledge of rational infant care—e.g., the necessity of breast-feeding wherever possible and what constitutes a suitable food for infants that are artificially fed—is regarded as at least a collateral aim in all establishments for infant care, and to this end leaflets on infant care are to be distributed among the people by the registrars of births, midwives, foundling nurses, and by physicians at lectures, crèches, and advisory dispensaries. In this matter assistance is given by the Women's Red Cross Association of Bavaria. In addition

to these a special periodical is edited and sold by the central department, containing popular and scientific articles, from which the local press are desired to print extracts so as to obtain for them a wider publicity than would otherwise be assured; and occasion is taken to recommend approved books on infant care and rearing to mothers. Lectures by physicians and properly trained women are also given, and it is satisfactory to note that lectures on artificial feeding are not to be given except by medical men. This is only one instance of that prudence and subordination to expert medical opinion and advice which characterises all the measures taken by the Bavarian Government for the prevention of infantile mortality.

*Consultation Centres, Contributions, and Premiums.*

Consultation centres are established under the control of physicians, where mothers will obtain advice, free of charge, on the care of healthy and sick infants. Infants are superintended outside the consultation centres in small districts by members of the Women's Guild, and in larger districts by paid female health visitors. Premiums for breast-feeding are paid to mothers to compensate them for loss of working time entailed by breast-feeding, and midwives are also given rewards who show good work in inducing mothers to feed their infants at the breast. The care of the finances of these consultation centres, and especially the granting of breast-feeding premiums, is in the hands of an administrative committee of which the superintending physician must be a member. Contributions are to be given only by the order and with the consent of the district physician, and where possible in the consultation rooms. In cases where the granting of support is in the hands of a committee which does not include the physician, his recommendation of applicants is necessary, and he is to be made acquainted with the grounds of refusal in any case recommended by him which is refused by the committee. As a rule, inquiries as to the worthiness of the parent to receive support are not made, for the aim is to save the infant's life. On the same grounds, no distinction is made between legitimate and illegitimate children. In certain cases, as, for example, when the mother is an alcoholic, premiums are given in kind instead of in coin. Necessary inquiries as to the means of parents, and especially of single mothers, are conducted with forbearance, and there are no fixed limits of income, disentitling applicants to support, discretion in these matters being allowed the physician.

In connexion with consultation centres are milk kitchens, which are intended to supply infants with milk as near in composition as possible to mother's milk. They are, of course, under medical supervision, and nourishment for sucklings is given on any physician's prescription, fixed formulæ being discouraged, as each individual case may require a different prescription. Milk is, as a rule, only given upon payment, which in the case of needy parents is made by parish authorities or philanthropic agencies upon a ticket system. As a rule, the cost of these kitchens is covered by the receipts, but if there is a deficit to be made up it is supplied from public sources.

*Restricted Infant Care.*

Crèches take in children for payment, during the first three years of life, without consideration of religion or parentage. The payment demanded is not to exceed the cost of nourishment. The children are under the charge of nurses, one nurse to six infants or 20 older children. For the housework servants are engaged. Special attention is paid to the quality and composition of the food for the children, and opportunity is given to mothers to breast-feed in the crèche and special terms are accorded to such mothers. Artificial feeding of infants is only to be undertaken upon a physician's prescription and certificate, and arrangements are to be made for supplying meals to artificially fed children at their homes during Sundays and holidays. Complete precautions against the introduction and spread of infectious diseases are taken and isolation and observation wards provided.

*Hospitals and Homes.*

These institutions receive and care for infants whose life is in danger through want or illness, and specially receive abandoned children. In urgent cases children are taken in without consideration of religion or parentage, but in other cases the identity of the child is to be ascertained and payment made beforehand. Arrangements exist for taking in a limited number of breast-feeding mothers, so as to have a supply of breast milk for the infants in case of need. The hospitals are also used as places for the education of nurses for infants and children.

Other measures directed to the same end—the prevention of infantile mortality—are concerned with the protection and assistance of women during the later months of pregnancy and during and after confinement. In this matter the aid of philanthropic associations and provident benefit societies is given, and lying-in hospitals and after-care homes have been established. The care of abandoned and illegimate children is undertaken by guardianship courts exercising their powers under recent enactments, who provide suitable foster-parents for the children and care for their future.

# Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

*City of Newcastle.*—Typhus fever is now so rare in this country that the occasional outbreaks which occur are of considerable interest. Defective diagnosis is nearly always responsible for those outbreaks, and in the absence of any typhus fever for educational purposes the difficulty of diagnosis is obviously very great. In this instance there were removed to the isolation hospital at the end of November, 1909, five cases of what were supposed to be enteric fever, but which on admission were found to be suffering from typhus fever. Later the remaining member of the family—the mother—was removed suffering from the same disease. These cases were thought to have been infected indirectly from a case of supposed double pneumonia, and a young woman who nursed the case was afterwards sent to the hospital with scarlet fever. But in addition to what was supposed to be a scarlet fever eruption the girl showed indefinite symptoms which were believed to have been those of typhus fever, and on Dec. 16th a sister of this young woman was found recovering from supposed pneumonia, but which was probably typhus fever. Subsequently, and notwithstanding the disinfection of the house and effects, the remainder of the family were found to be ill with typhus fever on Jan. 3rd. There were 30 contacts connected with the above cases who were kept under observation, but none of them developed the disease in question. Dr. Henry E. Armstrong reports that as there was no smallpox during the year the buildings intended for this disease were used for scarlet fever convalescents. During the twelve months ended Nov. 26th, 1909, there were 64 corporation patients from Newcastle admitted into the Barrasford Sanatorium for Consumption. A table is furnished in the appendix to the report dealing with each case, but it is not clear from this what are the dates at which the observations relative to the after-histories of the cases were made. Presumably they relate to the condition on discharge, but this is not as clear as it might be, and we venture to hope that in the next annual report the after-histories of the patients discharged during 1909 and 1910 will be furnished, those for each year being kept separate and the dates of the last observation being also entered.

*County Borough of Derby.*—Dr. Albert E Brindley, in dealing with the history of diphtheria in Derby, shows by means of a tabular statement the fatality rate of this disease from 1881 onwards. It is interesting to observe the manner in which the case incidence per 1000 of the population has more or less steadily increased, although, of course, the questions of improved diagnosis and better notification have a very great influence in this direction. The case incidence in 1881 was 0·08 per 1000, in 1891 0·71 per 1000, in 1901 0·70 per 1000, and in 1909 5·04 per 1000. The case mortality has oscillated very materially. In 1883 it was only recorded at 15 per cent., but in 1886 it reached 33·5 per cent., and in 1889 41·4 per cent. In 1903 its first marked drop occurred to 3·6 per cent., and during the two years 1908 and 1909 it was 5·5 per cent. and 5·0 per cent. respectively. In connexion with treatment, it appears that in 1909 in the majority of cases admitted into the hospital antitoxin had not been previously given. As regards pulmonary tuberculosis, a list is furnished dealing with the question of causation, and the most interesting point is the very large number of cases which commenced after illness, suggesting, perhaps, not so much infection as the reduction in soil

resistance leading to the development of hitherto latent tuberculosis. The medical officer of health, who was for two years resident at the Royal Infirmary at Manchester, found that there nearly 40 per cent. of the post-mortem examinations—i.e., cases which had died from other diseases—showed evidence of former tuberculosis. These cases were, he observes, cured naturally.

*County Borough of Halifax.*—Dr. J. T. Neech estimates the population of this town at 107,750, as against an estimate of 111,911 by the Registrar-General, and the rates are based upon the former estimate. The birth-rate of the district is falling more rapidly than the death-rate, and during 1909 the excess of births over deaths was the lowest on record. The illegitimate birth-rate has manifested during recent years an increase in relation to the total births, this percentage now amounting to 4·8. There were 104 stillborn children buried during the year, and in one case where a child born alive was buried as stillborn the Registrar-General ordered the sexton concerned in the case to be prosecuted, and a fine was inflicted. The general death-rate of the district for the year 1909 was 14·4 per 1000, as compared with rates of 14·1, 15·1, and 14·5 for Leeds, Sheffield, and Bradford respectively. The infantile mortality was only 99 per 1000 births. As regards enteric fever, it was found that in 1908 20 per cent. of the cases were associated with the consumption of shellfish, but the "scare" connected with these cases produced such a falling-off in the consumption of this food that in 1909 only 6 per cent. of the total were regarded as shellfish-borne. In discussing the behaviour of diphtheria, Dr. Neech expresses the opinion that hospital isolation does not appear of much value in curtailing its spread. The case mortality for 1909 was 21 per cent. It would be very instructive if, with reference to each fatal case, the dates of attack and of the administration of antitoxin could in future be published in the annual report. This would be of use educationally, and tend to emphasise the value of antitoxin in the minds of the public. The water-supply of this borough is derived from upland surfaces, and for the most part there is no filtration. But as regards the water of certain reservoirs mechanical filters are employed. A table showing the percentage purification bacteriologically from these filters would be instructive. All the water apparently possesses some plumbo-solvent power, and one grain of slaked Buxton lime is added to each gallon of water as milk of lime, except in the case of one source which is very acid, and to this 8 grains per gallon are added, as well as ½ grain per gallon of albumin-juice for clarifying purposes.

*The City of Chester.*—Dr. J. R. Currie furnishes an instructive table as to the fatality-rate of scarlet fever in Chester from the year 1886 down to the present time. In 1886 the fatality-rate was 14·2 per cent. and in 1889 12·2 per cent. Since that time this fatality-rate has been falling in an irregular fashion, but in 1904 a rate of 10·9 per cent. was recorded, which, of course, was very high for such a recent date. In 1906 there were 102 cases without a death. There were two cases of human anthrax in Chester during 1909 and both proved fatal; one was that of a warehouseman and the other a butcher. In the first case the patient was not seen by a medical man until after death, and in the second the disease was recognised, but the man died shortly afterwards. He apparently contracted the diseased by inoculating himself with the flesh of a cow which had been slaughtered because it was dying.

*County Borough of Huddersfield.*—Dr. S G. Moore, who estimates the population of this district for the year 1909 at 103,000, reports that use has been made of a wooden pavilion in the grounds of the isolation hospital, which was originally intended for small-pox, for the education and treatment of early cases of pulmonary tuberculosis. Only carefully selected males are admitted, and preference is given to young adult wage-earners. The accommodation available does not enable the cases to be retained for more than from six to eight weeks, but during this time they learn how to live healthy lives, and the opportunity is taken to disinfect their dwellings. During 1909 there were five non-registered midwives practising in Huddersfield, but they appear only to have attended a few emergency cases. They were warned not to practise after April, 1910 The Huddersfield midwives alone attended, during 1909, 707 out of a total 995 cases, and during that year only 5 deaths occurred in the midwives' practice: 3 from puerperal fever, 1 from eclampsia, and 1 from pelvic cellulitis.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8326 births and 4711 deaths were registered during the week ending Jan. 7th. The annual rate of mortality in these towns, which had declined in the five preceding weeks from 18·1 to 14·1 per 1000, slightly increased to 14·3 in the week under notice. During the 13 weeks of last quarter the death-rates in these towns averaged 14·7 per 1000, against 14·8 and 14·3 in the corresponding quarters of 1908 and 1909. In London the annual death-rate last quarter was equal to 15·3 per 1000, against 13·7 and 13·5 in the two preceding corresponding quarters. The annual death-rates in the 77 towns during the week under notice ranged from 4·2 in King's Norton, 6·7 in Hornsey, 6·8 in Ipswich, and 7·6 in Walsall, to 19·3 in Grimsby and in Dewsbury, 19·4 in Oldham, 20·4 in Bootle, and 21·0 in Swansea. The 4711 deaths from all causes in the 77 towns last week showed an increase of 120 upon the number in the previous week, and included 160 which were referred to measles, 76 to diphtheria, 57 of infants under two years of age to diarrhœa and enteritis, 53 to whooping-cough, 24 to enteric fever, and 22 to scarlet fever, but not one to small-pox; thus 392 deaths resulted from these principal epidemic diseases, against 442 and 391 in the two preceding weeks. The deaths from measles, which had been 208 and 185 in the two previous weeks, further declined last week to 160, but showed annual rates exceeding 2·0 per 1000 in Dewsbury, Middlesbrough, Bury, and Coventry. The fatal cases of diphtheria rose last week to 76 from 56 and 55 in the two preceding weeks; 20 occurred in London and its suburban districts, 5 in Portsmouth, 4 in Liverpool, 7 in Leeds, and 3 each in Birmingham, Bradford, and Cardiff. The 57 deaths of infants aged under two years attributed to diarrhœa and enteritis included 19 in London and its suburban districts, 7 in Liverpool, and 5 in Manchester and Salford. The deaths from whooping-cough, which had been 61 and 54 in the two preceding weeks, were 53 last week, of which 21 were returned in London and its suburban districts, 3 in Bristol, and 2 each in Brighton, Nottingham, Stockport, Manchester, Bradford, Leeds, Middlesbrough, and Newcastle-on-Tyne. The 24 deaths referred to enteric fever were within one of the number in the previous week, including 8 in London and its suburban districts, 4 in Manchester and Salford, and 2 in Wigan. The fatal cases of scarlet fever, which had declined from 30 to 21 in the four preceding weeks, were 22 last week, of which 3 occurred in Manchester and Salford, 3 in London and its suburban districts, and 2 each in Birmingham, Liverpool, and Cardiff. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the eight preceding weeks from 1882 to 1594, had further fallen to 1491 on Saturday last; 154 new cases of this disease were admitted to these hospitals during the week, against 167 and 140 in the two previous weeks. The 1328 deaths from all causes in London in the week under notice included 289 which were referred to diseases of the respiratory system, against 261 and 263 in the two preceding weeks. In the 77 large towns 180 deaths resulted from different forms of violence, against 179 and 186 in the two previous weeks; and 431 inquest cases were registered. The causes of 48, or 1·0 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, Salford, and in 47 other smaller towns; the 48 uncertified causes of death in the 77 towns in the week under notice included 12 in Liverpool, 5 in Birmingham, 4 in Sheffield, 4 in South Shields, and 3 in Barrow-in-Furness.

## HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 817 births and 526 deaths were registered during the week ending Jan. 7th. The annual rate of mortality in these towns, which had been equal to 13·4 and 14·7 per 1000 in the two previous weeks, declined again to 14·3 in the week under notice. During the 13 weeks of last quarter the death-rates in these towns averaged 14·8 per 1000, only slightly exceeding the mean rate during the same period in the 77 English towns which

was 14·7 per 1000. The annual death-rates during last week in the eight Scotch towns ranged from 9·7 and 11·3 in Perth and Greenock to 16·5 in Dundee and 19·0 in Leith. The 526 deaths from all causes in the eight towns last week were fewer by 8 than the number in the previous week, and included 56 which were referred to the principal epidemic diseases, against 40 and 43 in the two preceding weeks; these 56 deaths were equal to an annual rate of 1·5 per 1000, and ranged upwards to 4·2 in Leith. Of these 56 deaths, 20 resulted from whooping-cough, 14 from diphtheria and croup, 12 of infants under the age of two years from diarrhœa, 6 from scarlet fever, and 2 each from measles and enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 12 and 7 in the two preceding weeks, increased to 20 in the week under notice, of which 7 occurred in Glasgow, 6 in Leith, and 3 both in Edinburgh and Dundee. Of the 14 deaths from diphtheria and croup, 6 were recorded in Glasgow and 5 in Edinburgh. The 12 fatal cases of infantile diarrhœa included 9 in Glasgow and 2 in Aberdeen. The 6 deaths from scarlet fever corresponded with the number in the previous week, including 2 in Glasgow. The 2 deaths referred to enteric fever occurred in Glasgow and the 2 fatal cases of measles in Edinburgh. The deaths referred in the eight towns to diseases of the respiratory system, which had declined in the five preceding weeks from 157 to 92, rose again last week to 98, but were 74 below the number returned in the corresponding week of last year. The deaths resulting from different forms of violence in the eight towns were 19 last week, against 15 and 17 in the two preceding weeks; and 151, or 29 per cent., occurred in public institutions. The causes of 11, or 2·1 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

### HEALTH OF IRISH TOWNS.

In Dublin 203 births and 168 deaths were registered during the week ending Jan. 7th. The annual rate of mortality in the city, which had been equal to 21·6 and 18·9 per 1000 in the two preceding weeks, rose again to 21·5 in the week under notice. During the 13 weeks of last quarter the annual death-rate in the city averaged 19·8 per 1000, whereas in London the death-rate during the same period did not exceed 15·3 per 1000. The 168 deaths from all causes in Dublin last week showed an increase of 22 upon the number in the previous week, and included 19 which were referred to the principal epidemic diseases, of which 6 resulted from whooping-cough, 5 from scarlet fever, 4 from measles, 3 of infants under two years of age from diarrhœa or dysentery, and 1 from diphtheria, but not one either from small-pox or enteric fever. The 6 fatal cases of whooping-cough were fewer by one than those returned in the previous week; whereas the deaths both from scarlet fever and measles showed an increase. The deaths from all causes included 56, or 33 per cent., which were recorded in public institutions. The causes of 4, or 2·4 per cent., of the deaths in the city during the week were not certified either by a registered medical practitioner or by a coroner. In Belfast 241 births and 122 deaths were registered during the week under notice. The annual rate of mortality in this city, which had declined in the four preceding weeks from 20·1 to 12·1 per 1000, rose again last week to 16·0. During the 13 weeks of last quarter the annual death-rate in Belfast averaged 16·0 per 1000, against 19·8 in Dublin during the same period. The 122 deaths from all causes in this city during last week included only 4 from the principal epidemic diseases—namely, 3 from diarrhœa, enteritis, or dysentery, and a fatal case of scarlet fever; no death being referred to measles, diphtheria, whooping-cough, enteric fever, or small-pox. Six deaths resulted from different forms of violence; and 32, or 26 per cent., of the deaths occurred in public institutions. The causes of 3, or 2·5 per cent., of the registered deaths were not certified either by a registered medical practitioner or by a coroner.

KING EDWARD'S HOSPITAL FUND FOR LONDON.—The King has sent his annual subscription of £1000 to King Edward's Hospital Fund for London.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon E. Sutton to the *Highflyer*, on completing. Staff-Surgeons: P. F. Alderson to Chatham Dockyard; E. R. L. Thomas to the *Sphinx*, additional, and on recommissioning; and J. Boyan to the *Edgar*, and to the *Pegasus* on recommissioning. Surgeons: W. C. Carson to the *Pelorus*, and to the *Merlin* on recommissioning; G. A. S. Hamilton to the *Excellent*, additional, for the *Revenge*; L. C. Hunt, to the *Blenheim*, additional for the *Swift*; C. F. O. Sankey, to the *Temeraire*; R. J. G. Parnell to the *Highflyer*, on completing; P. B. Egan to the *Skipjack*; E. MacEwan to the *Africa*; A. H. Joy to the *Bulwark*, additional; and D. A. Mitchell to the *Argonaut*, and for group of ships of Fourth Division Home Fleet; F. C. Robinson to the *Edgar*, and to the *Sealark* on recommissioning; and C. J. Aveling to the *Edgar*, and to the *Fantome* on recommissioning.

### ROYAL ARMY MEDICAL CORPS.

Colonel W. G. Macpherson, C.M.G., has been transferred from Malta to India. Colonel F. B. Maclean has taken over duty as Principal Medical Officer of the Seventh (Meerut) Division on his return from leave. Lieutenant-Colonel G. H. Barefoot has been transferred from Bareilly to command the station hospital at Ranikhet. Lieutenant-Colonel J. J. Russell has been transferred from Limerick to the Southern Command. Lieutenant-Colonel H. H. Brown, from Murree, has been granted four months' general leave. Lieutenant-Colonel R. W. Wright, on arrival in India from England, has been selected to command the station hospital at Jhansi. Lieutenant-Colonel T. B. Winter, from command of the station hospital at Bareilly, has on arrival home been appointed Senior Medical Officer in charge of Recruiting Duties, London District. Lieutenant-Colonel C. T. Blackwell, from Woolwich, has taken over the command of the station hospital at Madras. Lieutenant-Colonel S. Glenn Allen has embarked for a tour of service at Gibraltar. Lieutenant-Colonel C. Birt has taken over command of the Fourteenth Company Royal Army Medical Corps at Dublin, in succession to Lieutenant-Colonel W. L. Reade, who has embarked for a tour of service at Mauritius. Major T. H. J. C. Goodwin, D.S.O., has been appointed Specialist in Advanced Operative Surgery to the Fourth (Quetta) Division. Major I. A. O. MacCarthy, on arrival home for duty from the Straits Settlements, has been posted to the Eastern Command. Major M. P. C. Holt, D.S.O., specialist in advanced operative surgery to the Third (Lahore) Division, has been transferred from Kasauli to Ambala. Major T. B. Black, from Aldershot, has taken up duty at Cairo. Major B. Forde, from Wynberg, has taken up duty at Bloemfontein. Major H. G. F. Stallard has embarked for a tour of service in India, for duty in the Seventh (Meerut) Divison. Major H. V. Prynne, from Gibraltar, has been posted to the Eastern Command. Major A. H. Waring, from Secunderabad, has taken up duty in the Southern Command. Major W. B. Winkfield has embarked in the troopship *Plassy* for India. Major W. E. Hudleston has been transferred from Golden Hill to Portsmouth. Major J. W. Jennings, D.S.O., Recruiting Medical Officer at Liverpool, has notified his intention to retire from the service on completion of 20 years' duty. Captain D. Ahern has taken up duty in Egypt. Captain F. A. McCammon has arrived home on leave from Quetta. Captain A. S. Williams has been transferred from Dinapore for duty at the station hospital, Dum Dum. Captain G. R. Paignton has arrived home on duty from Sierra Leone. The following officers have joined the Royal Army Medical College, London: Captain A. J. Hull from Dover, Captain N. D. Walker from the London District, and Captain C. C. Cumming from Queen Alexandra's Military Hospital, Millbank. Captain A. H. Jacob has arrived home from Gharial, Northern India, on leave. Captain J. E. Powell, from Bareilly, has been granted four months' leave on medical certificate. Lieutenant A. Hendry has been transferred from Mhow to Indore. Lieutenant S. S. Dykes, from Barry Camp, has joined at Edinburgh. Lieutenant E. C. Lambkin has been appointed for duty at Windsor. Lieutenant J. R. Hill, from Monmouth, has been posted to Pembroke Dock. Lieutenant A. S. M. Winder, from Donard Camp, has been transferred to the

Curragh. Lieutenant F. R. Laing and Lieutenant J. T. Simson, appointed on probation July 31st, 1909, and Jan. 28th, 1910, respectively, have been stationed at Aldershot.

INDIAN MEDICAL SERVICE.

"The King has approved of the following appointments:—To be Colonel: Lieutenant-Colonel John Adams Cunningham (dated Oct. 26th, 1910). To be Brevet-Colonel: Lieutenant-Colonel Johnston Shearer, C.B., D.S.O. (dated Nov. 11th, 1910).

The King has approved of the following retirements:—Brevet-Colonel Johnston Shearer, C.B., D.S.O. (dated Dec. 6th, 1910). Lieutenant-Colonel John Adolphus Burton (dated Dec. 6th, 1910). Lieutenant-Colonel George Ernest Fooks (dated Dec. 6th, 1910). Major Thomas Alfred Ollivant Langston (dated Dec. 12th, 1910).

Lieutenant-Colonel D. T. Lane, civil surgeon at Lahore, has been appointed Professor of Forensic Medicine and Toxicology at the Lahore Medical College, in succession to Lieutenant-Colonel H. Hendly, who has been placed on special duty at Rawal Pindi. Lieutenant-Colonel J. J. Pratt, civil surgeon of Lucknow, has been granted privilege leave combined with furlough for 18 months. Lieutenant-Colonel R. C. MacWatt, Bombay, has arrived home on leave. Major F. O'Kinealy has taken up duty as Surgeon on the Personal Staff of the Governor-General of India. The services of Major H. J. K. Bamfield, district plague medical officer at Ferozopore, have been replaced at the disposal of the Commander-in-Chief. Major F. D. S. Fayrer, on return from leave, has been appointed by the Foreign Department of the Government of India to be Civil Surgeon at Dera Ismail Khan. Major H. J. Walton has taken over his appointment as Civil Surgeon of Bulandshahr. The services of Major J. C. H. Leicester have been replaced at the disposal of the Bengal Government. Major J. L. Macrae has had his appointment as Civil Surgeon of Coorg confirmed. The services of Captain W. J. Collinson, on plague duty in the Punjab, have been replaced at the disposal of the Government of India in the Home Department. Captain L. Cook, officiating civil surgeon at Midapore, has been granted two years' combined leave home from India. Captain C. A. Gourlay has passed in Bengali by the colloquial test. Captain W. F. Brayne has been appointed to Rangoon for duty in connexion with the prevention of plague. Captain W. E. McKechnie has taken over duty as officiating Civil Surgeon at Etawah, United Provinces. Lieutenant T. J. C. Evans has been appointed Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division. Lieutenant G. T. Burke has been transferred from the officiating medical charge of the 48th Pioneers to the officiating medical charge of the 11th Rajputs at Fyzabad. Lieutenant L. H. L. Mackenzie has been attached to the 72nd Punjabis at Dera Ismail Khan.

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned gentleman has been appointed Surgeon:—Charles Francis Alexander Hereford (dated Dec. 30th, 1910).

TERRITORIAL FORCE.

*Royal Army Medical Corps.*

*Attached to Units other than Medical Units.*—Captain James Middleton to be Major (dated Nov. 23rd, 1910).

THE TERRITORIAL DECORATION.

The King has been graciously pleased to confer the Territorial Decoration upon the undermentioned Officers of the Territorial Force who have been duly recommended under the terms of the Royal Warrant dated August 17th, 1908:—

*Royal Army Medical Corps.*

Major James Arthur Rigby, attached to the 2nd West Lancashire Brigade, Royal Field Artillery. Major Joseph Dallas Pratt, attached to the 4th (City of London) Battalion, The London Regiment (Royal Fusiliers).

DEATHS IN THE SERVICES.

Colonel Francis Howard, retired pay, late Army Medical Staff, on Jan. 2nd, at Bournemouth, aged 69 years. He joined the army as assistant surgeon in 1863, becoming surgeon in 1873, and surgeon-major in 1876. He served during the Afghan war in 1878–79 in medical charge of the 25th King's Own Borderers (medal), and in the Egyptian expedition, 1882 (medal and bronze star). He became brigade surgeon in 1888, ranking as lieutenant-colonel, and retired in 1893. For some time Colonel Howard acted as medical officer of the Recruiting Staff in the Home District, and after his retirement was employed at the War Office during the South African war. He was the author of a "Handbook of Medical Organisations of Foreign Armies," and made some interesting communications in our columns on the subject of varicocele.

ANTITYPHOID INOCULATION IN THE ARMY.

In view of the advanced stage reached in the system of inoculation of troops against enteric fever the Army Council has decided that the practice of attaching specially selected junior officers of the Royal Army Medical Corps to regiments proceeding abroad for the purpose of carrying out the injections is to be discontinued, and officers now attached to units for this purpose are to revert to general duty. The inoculation at home stations of troops proceeding abroad will continue to be carried out, and inoculations in commands abroad will also be continued under present arrangements.

At the end of last year the North Riding of Yorkshire Branch of the British Red Cross Society had registered ten voluntary aid detachments, and the registration of several other detachments is contemplated.

# Correspondence.

"Audi alteram partem."

## CLEAN MILK.

*To the Editor of* THE LANCET.

SIR,—It is recognised on all sides that few matters are of greater importance in promoting the health of the nation than a pure milk-supply. Yet, unfortunately, milk is peculiarly susceptible and liable to contamination, not only while it is in the hands of the producer and retailer, but also as soon as it reaches the consumer. For want of due care in handling milk is frequently, as is well known, a potent factor in the dissemination of a number of serious diseases, and has great influence on infant mortality.

Since the inception of the National League for Physical Education and Improvement in 1905 the question of pure milk has occupied a prominent position in its programme, and a special committee of eminent experts has devoted much time to the problem. The league is now undertaking definite practical steps to deal effectively with the matter. Pending more adequate legislation than at present exists, it is hoped that this action will arouse the nation at large to a sense of its responsibility in the matter. The intention, briefly stated, is to instil into the minds of all concerned in the production and consumption of milk a knowledge of the simple rules required to ensure its purity and cleanliness.

Full details of the scheme, and of the standard leaflets on which it is based, will gladly be sent on application to the Secretary of the League, at 4, Tavistock-square, W.C.

We are, &c., for the National League for Physical Education and Improvement,

W. B. RIPON,
Chairman of the Executive Council.
F. MAURICE,
Maj.-Gen., Hon. Vice-Chairman.
LAUDER BRUNTON,
Vice-Chairman.
JOHN TWEEDY,
Vice-Chairman.

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| H. R. BEEVOR, | ROBERT JONES, |
| A. HOLDEN BYLES, | JOHN MACDONELL, |
| JAMES CANTLIE, | HOWARD MARSH, |
| A. M. BOYD CARPENTER, | F. JAMES MATHESON, |
| ANDREW CLARK, | MAUDE MAUFE, |
| ERNEST CLARKE, | E. H. POOLEY, |
| D. EYRE, | MARY SCHARLIEB, |
| MALCOLM FOX, | W. J. SIMPSON, |
| F. E. FREMANTLE, | A. WATT SMYTH, |
| EDWARD E. HAYWARD, | H. RUSSELL WAKEFIELD, |
| T. H. HENDLEY, | MARY A. WARD, |
| A. HOARE, | J. E. WALKER, |
| T. HENRY HOWARD, | A. T. WAUGH, |

Members of the Executive Council.

Tavistock-square, W.C., Jan. 10th, 1911.

## THE CURRICULUM OF THE MEDICAL STUDENT.

*To the Editor of* THE LANCET.

SIR,—Sir Henry Morris's speech, reported in your issue of Jan. 7th, will, I trust, receive the close attention of every member of the profession. In my opinion no more mischievous proposal, for both the profession and the public, could be devised than that which he has put forward.

For a considerable time the profession has felt that the preliminary general education standard for students entering it has been allowed to reach a seriously low level as compared with the standards required by other professions. A few years ago it had become practically equivalent to the standards required of students of veterinary surgery and pharmaceutical chemistry. The matter was then considered by the British Medical Association, and as the result of a careful inquiry a deputation was sent to the General Medical Council to urge the necessity for considerable changes. The General Medical Council, however, found themselves unable to do anything to alter the existing state of affairs.

The reason for this will be naturally searched for by everyone interested in the matter. The financial interests of the licensing bodies and those of the profession at large are absolutely different. The profession is gravely overcrowded, and the proper way to correct this evil—as great an evil ultimately for the public as for the profession—is clearly to make the entrance standard of general education what can only be described as a commonly decent one. The licensing bodies collectively, on the other hand, have everything to gain from passing into the profession an excessive number of candidates, and, to them collectively, the establishment of a high standard of general education would obviously be a financial misfortune. The age-limit for entry into the profession has been fixed by the General Medical Council at 16 (!) and the standard of general education required at what is suitable to boys of a little over 15! Sir Henry Morris now proposes to shift into the school curriculum a portion of the professional studies! What the British Medical Association proposed was to raise the age-limit of entry to 17 and the standard to one suitable to boys of average intelligence at that age.[1] Now, let it be clearly grasped what Sir Henry's Morris's proposal means. It means a virtual lowering of the already too low age-limit. Not only so, it also means the reduction of the already all too short time which may be allotted to that general culture which makes so vast a difference to the man in after life, whatever his position may be. Further, it means, in some cases at all events, admitting boys into medical and surgical, male and female, wards at what I do not hesitate to call an indecent age. It is, in fact, a proposal for the further cheapening of the medical curriculum in no way calculated to elevate the character or improve the prospects of the profession, or to increase the confidence felt by the public in it and in its governing council.

I trust that the profession will not miss the real meaning of this most grave proposal, and will begin to consider whether the time has not come for a strong assertion of the right of medical men collectively to determine for themselves the standard of culture for the profession which public policy demands; for not leaving the sources of the profession's prosperity, efficiency, and prestige at the mercy of any official body, however exalted, which has financial interests so obviously irreconcilable with those of the profession generally.

I should be sorry to say a word which would belie the great respect I entertain for Sir Henry Morris personally. He is incapable of intentionally doing this great injury to the calling on which he himself reflects so much honour. But "evil is wrought for want of thought, as well as from want of heart." It is the system and the mode of thought, which can lead one so able and so well-intentioned to enunciate anything so pernicious, that I desire to call attention to. If the profession is so short-sighted as to allow this proposal to be carried into effect, the time is not far distant when it will have cause to regret a lamentable want of wisdom. I am, Sir, yours faithfully,

Exeter, Jan. 9th, 1911. W. GORDON.

[1] Brit. Med. Jour., 1902, vol. ii., p. 262.

## MENDELISM AND HEREDITARY CRANIO-CLEIDO-DYSOSTOSIS.

*To the Editor of* THE LANCET.

SIR,—Your issue of Nov. 19th, 1910, contained an able and outstanding paper by Mr. D. C. L. Fitzwilliams of St. Mary's Hospital on Hereditary Cranio-cleido-dysostosis. At the close of his communication he sums up as follows:—

> It might be suggested that the cause in both affections [hereditary cranio-cleido-dysostosis and achondroplasia] is due to the presence or absence of certain chemical constituents which are necessary for the correct ossification of membrane bones in the one case and of cartilage bones in the other; in much the same way as we know that hæmophilia must be due to a hereditary absence from, or presence in, the body of certain chemical constituents. Couvelaire advanced a somewhat similar view when he said that hereditary cranio-cleido-dysostosis was "the expression of a general taint with a predominance in certain osseous groups.[1]"

I hope you will give me some of your space for a few remarks on this condition in relation to Mendelism and the origin and maturation of the ovum.

As the author states, "hereditary cranio-cleido-dysostosis is a condition which affects those bones which develop wholly or partly in membrane." Professor Fawcett of Bristol points out in his interesting Long Fox lecture[2] on the Development of the Human Skull, the exact details, but for our purposes it may be stated that the cranial vault and the interparietal part of the occipital bone are laid down in membrane, and we must add to this the additional fact that the outer half of the clavicle, the earliest bone in the body to ossify, is also developed in the same basis. In one of his two cases (a child 3 years old) Mr. Fitzwilliams found that the deficient ossification affected the vault of the cranium and the interparietal occipital portion and the outer half of the clavicle. The basi-occipital ossified as usual in cartilage.

Expressed in Mendelism, this is a condition where we have a deficiency or loss to the organism, of the determinant for ossification in the definite group of unit-characters for the ossification of the bones laid down in membrane. Heredity plays a part in the history, as in 60 cases collected 31 came from eight families. The conditions as to heredity will be best studied, however, in brachydactyly, to be taken up shortly. In the condition known as achondroplasia to which the author alludes, we have a defect in length of the bones developing in early endochondral ossification—viz., the upper and lower limbs, the innominate bones, the ribs, and the basi-occipital; and from a Mendelian point of view we have here a loss of the determinants, in part, which govern the length of the bones developing in early endochondral ossification. Those in which later endochondral ossification occurs—the spine, carpus, tarsus, sternum, costal cartilages, patellæ—are unaffected, and the bones developing in membrane, as already stated, are normal. It is the change in the basi-occipital that gives the achondroplasic the skull alteration (see "Encyclopædia Medica," Vol. I., p. 55).

If now we take brachydactyly, where the middle phalanx of the fingers[3] is apparently awanting, we find that while the fingers have only two phalanges, the missing middle phalanx is represented by a nodule of cartilage ankylosed to the first phalanx (Drinkwater). This condition may be regarded then as a loss in the unit-character of length for the middle phalanges of the foot and hand. All these so-called deformities I regard as really variations and not as pathological conditions. We see, therefore, that in these three variations we have an exact loss, as exact as a brick out of a wall.

If, then, we grant that a Mendelian unit-character is lost, the question comes, Where has that occurred? The answer I suggest is this—that the loss occurred in the maturation of the germ- and sperm-cells prior to fertilisation, when the chromosomes are reduced to a half for each gamete. These reduced cells, now the gametes, unite in fertilisation and make up the normal number for the zygote (fertilised ovum). My reasons for adopting this hypothesis are that (1) the determinants of heredity are in the nucleus of the primitive germ- and sperm-cells; thus when these are reduced by the loss of the polar bodies we get some heredity determinants

[1] Op. cit., THE LANCET, p. 1475.
[2] Bristol Medico-Chirurgical Journal, June, 1910.
[3] The foot is similarly affected. In the Naegele pelvis, where there is some defect in the unit-character determining the size of one side of the pelvis, there is sacro-iliac ankylosis.

thrown off. The centrosome is generally held to regulate the division of the chromosomes, and the cytoplasm has not been shown to be directly concerned with heredity. If it be urged that the same chromosomes may be lost at each fertilisation, and that thus variation cannot result, the objection will be seen not to be valid when another question is considered. It is granted that heredity conditions are transmitted and that the same happens in the case of crossings of plants and animals. The question now arises, How is this? We must grasp here firmly a disputed fact—viz., that the primitive germ- and sperm-cells in the ovary and testis respectively, from which the gametes arise, are not derived from the germ and sperm epithelium (Waldeyer's view in 1870), but arise from an early division of the early zygote, travel through the developing embryo, and ultimately become fixed in the genital ridge of the Wolffian body (Eigenmann, Beard, and others). They are then the primitive germ- and sperm-cells (ordinary ova and spermatozoa) and become gametes when the polar bodies are thrown off. Thus the gametes contain heredity determinants owing to this origin, while the view that the primitive germ- and sperm-cells are modified somatic cells makes heredity unintelligible.

The question of the ratios as in brachydactyly can be under explained only by Mendelism. Mendel showed that in plant crossings the contrasted unit-characters segregate out in such a manner that in the second and third generations, taken together, there is a ratio of 1 : 2 : 1 *in the plants*. Mendel thought that this was due to a combination of the pollen grains and egg-cells giving this elementary probability result, and as a plant was by him, unfortunately, considered as a merely somatic organism in which one does not require to recognise a propagative and somatic part a serious error was made. It was thus not recognised that the significance of the first generation following in its soma one of the contrasted unit-characters is that the 1 : 2 : 1 ratio in plants cannot be due to gametic combination seeing that the combination of egg-cells and pollen grains ends in a generation. The determinants of the contrasted unit-characters in crossings really segregate out in the zygote in the 1 : 2 : 1 ratio and that is the reason why biometric measurements of stature, &c., in man and plants give some form of this curve. When once we see that determinants re-arrange themselves in the zygote according to the curve of frequency we can extend this process to the primitive germ-cells and gametes.

I hold then that the significance of the mitotic changes in the primitive germ-cells of the early developing ovary is that these are producing variation of the determinants of heredity both by the gross divisions and by a minute re-arrangement in the divided particles. Thus all the determinants are re-arranged by the law of frequency and not by Galton's law, but this point would take too long to consider here. In this way we get in the polar bodies thrown off, not always the same determinants but different ones, and as important ones have their chance of loss, each unit-character gets thus its dangerous time of loss.

In brachydactyly Drinkwater found the ratio in families affected to be 50 per cent. affected, 50 per cent. non-affected. This is, I believe, explained if we suppose that the whole determinant for length for the middle phalanx was lost and thus it is like a head or tail result in tossing, 50 per cent. of each.

That the variations or deformities are *automatic* losses is emphasised by the fact that analogous conditions explainable on the same hypothesis—e.g., anencephaly, genital deformities, &c —are constantly occurring, although from their nature there is no heredity—such variations are incapable of propagation. The three deformities considered, cranio-cleido-dyostosis, achondroplasia, and brachydactyly, are thus due to a loss of the determinants of a Mendelian group of unit-characters at the maturation of the ovum or spermatozoon; they are transmitted because the primitive germ cells are derived from an early division of the zygote when the determinants are causal; and are transmitted with a probability result, because their determinants are re-arranged in the primitive germ-cells and zygote according to a frequency law. Ordinary variations arise in this way, but gross losses in the polar bodies will give a marked variation—a mutation, in fact.

I have trespassed too long on your space and therefore do not consider how far Darwinism could be applied, and I have also had to omit many details. I wish, however, to state in conclusion that I am confident the day will come when the body of man will be considered as made up of functional and anatomical unit-characters—i.e., of Mendelian autonomous units. In the skeleton we have three great groups already: (1) the bones developed in early endochondral ossification; (2) those in late endochondral ossification; and (3) those in membrane. In the brain and spinal cord we have the corpus callosum, which may be exactly wanting in some cases, the spinal cord, the spinal ganglia, posterior roots, and sensory nerves. In amyelia the first is absent but the others present (Oppenheim, Bruce's translation, p. 393). In the genital organs similar groups can be made, while albinism, hæmophilia, and many other structures or conditions yield to this generalisation and line of research. In tracing a family tree we may be able to plot out how these segregate, and ultimately reach the law governing this. Whichever mechanism is the successful one in explaining evolution mysteries, I do not believe that only *one* will succeed, but I hold that one of the most important will be that much criticised and much misunderstood Mendelism which has made the name of Mendel as immortal as those of Darwin and Wallace.

I am, Sir, yours faithfully,

Edinburgh, Jan. 7th, 1911. D. BERRY HART.

## THE BOARD OF TRADE COMMITTEE ON COLOUR VISION.

*To the Editor of* THE LANCET.

SIR,—I have been strongly advised to write to you with regard to the composition of the Colour Vision Committee appointed by the Board of Trade. Though the overwhelming majority of experts are on my side with regard to the extremely inefficient wool test used by the Board of Trade, not a single one of those who have been instrumental in bringing about the appointment of this committee is on it, whilst those who are definitely associated with the wool test very largely form its expert opinion. The president of the old committee that recommended the wool test is on the committee and the secretary is a physicist who employs the condemned method and is a strong advocate of the wool test. Twenty years ago I was appointed on the International Code of Signals Committee to advise the Board of Trade as to efficient tests for colour blindness. When the committee of the Royal Society (which, like the present committee, had a large majority of physicists, there being only one physiologist) recommended the Holmgren test, and that it was not necessary to have a medical man to test for vision and colour vision, my connexion with the Board of Trade ceased, my place being taken by a physicist, the secretary of the committee. Therefore, for this obviously medical duty the Board of Trade does not employ a single medical man.

Colour-blindness is a physiological subject, and a knowledge of physiology, psychology, and ophthalmology is necessary for its appreciation. One of the two physiologists appointed by the Board of Trade has, through illness, not been able to attend the meetings of the committee. I would suggest that the number of physiologists be made equal to the number of physicists. I have done everything in my power to help the committee to come to a correct conclusion, and shall continue to do so. They have, however, made this very difficult for me, as I wished to make it a condition that I should be present when they examined any of my colour-blind cases, men who are able to pass the Holmgren test. This they refused, so I withdrew the condition, but had they acceded this letter would never have been written.

I am, Sir, yours faithfully,

F. W. EDRIDGE-GREEN.

The Institute of Physiology, University College, London, Jan. 3rd, 1911.

## THE CHURCH ANTI-VIVISECTION LEAGUE.

*To the Editor of* THE LANCET.

SIR,—As I presume the circular issued by the Church Anti-Vivisection League has been sent broadcast to the profession, I thought it might interest your readers to see a copy of my reply to the secretary. I therefore inclose a copy, and hope that if you can find room for it in your journal it may help to prevent some of your readers, through

simple thoughtlessness, giving permission for their names to be added to the list in question.

I am, Sir, yours faithfully,

CHARLES W. HAYWARD,
Liverpool, Jan. 10th, 1911. Barrister-at-Law, M.D., D.P.H., &c.

[ENCLOSURE.]

To the Clerical Organising Sec. Church Anti-Vivisection Society.

DEAR SIR,—In reply to your circular asking me to allow you to add my name to a list of medical practitioners to be used by your league, I must emphatically decline to have my name included in such list.

I am as much against unnecessary cruelty to animals as anybody, but to entirely abolish the right to try the effects of drugs, &c., upon animals would restrict these experiments to being tried upon the human race, which is "out of the frying-pan into the fire!" The Anti-Vivisection Society publishes posters and literature showing that the sufferings of animals in any experiments are equal to similar proceedings with human beings. This is pure dishonesty, and for the purpose of trading upon the ignorance of the public, and raising violent prejudices founded entirely upon ignorant sentimentalism. Animals are saved the mental effects, which are the greater part of human suffering.

Your circular is also in very questionable taste. It asks for names of doctors—"not for publication"—and then offers a temptation to the meaner instincts by stating "we are often asked by Anti-Vivisectionists for the names of Anti-Vivisectionist doctors in their respective neighbourhoods"! Under these circumstances the allusion to "unconscious quackery" is humorous. Yours faithfully,

CHARLES W. HAYWARD,
Jan. 9th, 1911. Barrister-at-Law, M.D., D.P.H., &c.

## THE USE OF IODINE AS A DISINFECTANT OF THE SKIN BEFORE OPERATIONS.

*To the Editor of* THE LANCET.

SIR,—Will you permit me to inform Mr. Willmott Evans that he is in error in stating "the first advocate of its use in this country was Mr. H. F. Waterhouse." My original paper was published in the *British Medical Journal* on August 14th, 1909, several months before Mr. H. F. Waterhouse's communication. I there stated that Dr. A. Grossich of Fiume had used liquor iodi, 10 per cent. solution. So far as I am aware, I was the first surgeon to use tincture of iodine, 2½ per cent. solution. May I also point out that, as I have insisted, shaving is unnecessary and the colour of the iodine is an advantage because it shows the limits of its application.—I am, Sir, yours faithfully,

J. LIONEL STRETTON,
Senior Surgeon, Kidderminster Infirmary and
Jan. 9th, 1911. Children's Hospital.

## EHRLICH'S DIAZO REACTION.

*To the Editor of* THE LANCET.

SIR,—Some remarks in your review of "International Clinics" on p. 1881 of THE LANCET of Dec. 31st, 1910, remind me that I made a long series of experiments with Ehrlich's diazo reaction in various diseases during the early months of 1893. The article containing the results obtained appeared in the *Indian Medical Gazette* for June, 1893. The reaction was most marked in chronic diarrhœa and dysentery and was seen more or less in other diseases.

I am, Sir, yours faithfully,

J. H. TULL WALSH
Jan. 7th, 1911. Lieutenant-Colonel, I.M.S. (retired).

## A METHOD OF SERUM DIAGNOSIS FOR TUBERCLE.

*To the Editor of* THE LANCET.

SIR,—I was not aware that Dr. W. d'Este Emery was also working on this subject or I would have communicated with him before sending an account of my experiments to you. I had no previous knowledge of work on the subject, but followed the principles of the Bordet-Gengou reaction. Before completing the article I looked up "Hewlett's Bacteriology," and found the statement that Wassermann and Brück had experimented on this subject in 1906, and that they appear to have failed to find tuberculous antibodies in localised or latent tuberculosis, but that Brück had been more successful with acute miliary tuberculosis in the early stages. By the method I described these antibodies can be clearly shown to exist in localised tubercle.

The first point Dr. Emery raises is the standardisation of the fresh tubercle emulsion. My procedure has been to prepare an emulsion on the lines employed for the "opsonic index." I gauge the strength by the appearance. This gives a rough but working standard. I do not find that standardisation of the emulsion is of such extreme importance, for I have obtained equally satisfactory results when employing 5 c.mm., 10 c.mm., and 20 c.mm. of the same emulsion, with 10 c.mm. of unheated and 40 c.mm. of heated serum. But I fully agree with Dr. Emery that there comes a point when, through an excess of the tubercle emulsion, normal human serum loses its power of hæmolysing sheep's corpuscles (probably due to fixation of the complement).

Dr. Emery states that 1/500th dilution of his emulsion fixed the complement in one of his tubercle cases in 10 minutes; this, I think, shows that there is a large working range. I also agree with him that even a small quantity of tubercle emulsion decomplements to some degree normal serum, which is shown when equal quantities of normal serum and tubercle emulsion are mixed together. But when heated serum is also employed this decomplementing is to some extent masked, owing no doubt to the increased quantity of sheep's amboceptor present, intensifying the activity of the complement. Also, whereas the loss of complement in 5 c.mm. may be so great as to fail to produce hæmolysis, this is not the case with 10 c.mm. I find that the complement present in 2½ c.mm. is the minimal which will produce a trace of hæmolysis. Hence, if half the complement in 5 c.mm. of normal serum is deflected there will be no hæmolysis, but if half is removed from 10 c.mm. there will be hæmolysis. Dr. Emery does not state the quantity of serum he employs. The anti-complementary substances in serum appear to be removed by heating; Nagouchi also mentions this point in connexion with the syphilis test. I always read a trace of hæmolysis as a negative result, if the salt tube has only faintly hæmolysed. I also agree with Dr. Emery that an old emulsion gives poor results; this I think is due to the growth of a short broad bacillus.

So as to simplify the technique, I have employed during the last week an emulsion of tubercle bacilli in 5 per cent. carbolic and 1 per cent. salt. This I have standardised with normal and tuberculous sera. I think that this emulsion will keep active for some weeks. Dr. Emery records his results by the length of time required to deflect the complement, and he obtains the extremely interesting result that this can occur in 2½ minutes.

On Dec. 21st, 1910, and again later experimenting with my own serum and a few other normals, ten minutes from drawing the blood, I found the following. 1. That from 2½ to 3 c.mm. were required to show some hæmolysis, this being complete with 5 c.mm. (0·5 c.mm. of sheep's corpuscles). 2. That when the serum was incubated with 20 parts 0·75 per cent. salt for one hour at 98° F., and then the sheep's corpuscles added, there was no trace of hæmolysis with 6 c.mm. of serum, from 7 to 9 c.mm. being necessary to produce a faint tinge (incubated for one hour with the sheep's red cells). That is to say, fresh serum loses a considerable degree of hæmolysing power when warmed to 98° F. for one hour. 3. That when the serum has stood for one hour over the clot the hæmolysing substances appear to gain stability and not to lose by warming to 98° F. Hence, the age of the serum is an important detail, serum from three to six hours old being the best, for though some complement is lost there is a marked gain in stability. By diluting human blood with 9 volumes of 1·5 per cent. salt clotting is prevented, and some of this plasma (equal to 10 c.mm. of pure plasma) diluted with 20 parts of 1 per cent. salt and mixed with sheep's corpuscles produced no hæmolysis.

From these experiments (though too few in number) I infer that the quantity of complement in circulating blood is much less than that in serum, and that clot gives to the serum some substances (complement or amboceptor) which increase its hæmolytic activity for sheep's corpuscles. Dr. Emery states that with normal serum in the presence of tubercle emulsion complement is absorbed in 15 to 25 minutes when warmed in the incubator. He does not mention the quantity of serum employed, but if 5 c.mm. I can quite understand if the serum is fresh that this loss will occur with 1 per cent. salt also. I find that a temperature of 125° F. decomplements serum in 10 minutes. In view of these latter results I now leave the serum and tubercle emulsion at room temperature (60° F.) for one and a half hours before adding the sheep's corpuscles; and, when preparing the decomplemented serum, employ a temperature of 125° F. for 10 minutes, as a greater temperature and time may damage the immune bodies.

As regards the immunity index, I have only put this forward tentatively, suggesting it as some indication of

progress, for I have found immune bodies to increase with improving health, and to be quite absent (as judged by hæmolysis) in one case during a negative phase. On the other hand, the immune bodies appear to decrease as the disease subsides. Dr. Emery appears to agree, on the whole, that immune bodies are favourable. As regards the opsonic index, I found a few days ago three cases (two tubercle of lung and one of spine) with indices below 0·7 to possess the highest immunity index and a high degree of complement. (I have found the reverse also.) 10 c.mm. of serum (three hours old) was mixed with 10 c.mm. of tubercle emulsion (carbolised) and left for half an hour at room temperature (60° F.). That the complement was deflected I was able to show also by the serum losing two-thirds of its activating power on washed human leucocytes (15 minutes at 98° F.). This was demonstrated by adding staphylococci. Employing syphilitic serum and antigen of heart muscle a far greater reduction was obtained. This is simply employing Sir Almroth Wright's observation that leucocytes require complement. I hope later to suggest this method as a means of diagnosing syphilis on the line of Hecht's modification, but also employing heated with unheated serum.

In view of these and other experiments on the same lines, I venture to think that a low opsonic index is frequently due to the presence of a high degree of tuberculous antibodies. These deflect the complement in the presence of the tubercle emulsion employed in the opsonic test. By the same hæmolytic experiments I have shown fixation of complement in two cases of gonorrhœal joint and one of staphylococcal. This will explain, I think, the marked specificity of the opsonic index and its limitation for diagnostic purposes, as complement is frequently greatly in excess to the immune bodies present. An abnormally high opsonic index means, I think, an excess of complement and absence of immune bodies, though probably Dr. Emery's suggestion of the presence of a new substance which inhibits the antigen-immune combination is more correct. Both methods appear to show conclusively that antibodies are produced in tubercle.

A patient suffering from tubercle or other inflammatory disease must constantly be losing complement through intravascular deviation, as tubercle bacilli have frequently been found in circulating blood, but the sera of such patients, as far as my experience goes, show an excess of hæmolysing power for sheep's red cells (excess of complement). An excessive dose of tuberculin would probably reduce the complement in the circulating blood, and in this way be harmful. A falling opsonic index would at once show this, and indicate danger.

When gauging by hæmolytic experiments the progress of a patient undergoing therapeutic inoculation one should, I think, endeavour to estimate not only the degree of immunity but also the degree of complement. This is shown by the tubes C and D in the method I described in THE LANCET of Dec. 31st, 1910. (The diagnosis is made by comparing tubes A and D.) And, as complement is absorbed by all toxin-immune compounds, all other organisms complicating a tuberculous lesion require attention. By using 40 c.mm. of heated with 10 c.mm. of unheated serum I find (in my present limited experience) that it is clearly possible to distinguish between the normal and the slightly tuberculous, and thus give after two or three examinations a definite diagnosis.

I am, Sir, yours faithfully,

Jan. 7th, 1911. V. B. NESFIELD.

## DIET AND INOPERABLE CANCER.

*To the Editor of* THE LANCET.

SIR,—May I be permitted to ask your readers to send to my hospitals a sufficient number of cases of inoperable cancer in order that the effects of medical treatment may be tested? I have for years believed that wrong food was an important factor in the etiology of cancer, but only recently have I seen cases that gave the impression that by alteration of diet we may sometimes cure. I might easily take up columns in arguing the *pros* and *cons* of the cases that have given me this impression, but my object is to put the matter to the test of further experience. In order that this may be done, I want cases in which there is a probability of at least six months of life, as change of diet produces little visible effect on the body under three months, but I may say that even in cases where treatment comes too late to cure it appears to mitigate very decidedly the pain and suffering of death from malignant disease.

Shortly, the treatment consists in putting the patient as quickly as possible under one form of uric-acid-free diet and from that on to one of nuts and fruit chiefly, the only fluid besides fruit juice being distilled water. I have been trying to get such cases for more than 12 months, but they are quite difficult to obtain, for cases of this kind are generally sent back to their friends or to homes for the dying, as hopeless; hence this letter. The names and addresses of males may be sent to the senior house physician at the Metropolitan Hospital, and those of females to the senior resident at the Royal Waterloo Hospital.

I will undertake to publish the result in all cases I am able to accept for treatment. I think that 30 to 40 cases so treated would answer the question whether cure of real cancer by such means is possible. Hitherto it has been assumed, when such cases recover, that the diagnosis has been wrong. I doubt whether this assumption is always correct.

I am, Sir, yours faithfully,

Brook-street, W., Jan. 5th, 1911. ALEXANDER HAIG.

## REBATE ON PETROL TAX FOR MEDICAL MEN.

*To the Editor of* THE LANCET.

SIR,—The letter of your correspondent in THE LANCET of Jan. 7th, p. 58, on the difficulty experienced by medical men in obtaining the rebate of 3*d.* per gallon on petrol consumed before Dec. 31st, 1909, is borne out by my experience. On April 5th, 1910, I supplied the Excise officer at Stratford, London, E., with properly certificated receipts for all the petrol used by me in 1909, and a declaration and application for repayment of duty, the whole of which documents were to his personal satisfaction. Hearing nothing further I wrote on Nov. 26th, 1910, asking for an explanation as to non-receipt of the sum claimed, and on Nov. 29th I received this reply:—

Customs and Excise, Deanery-road, Stratford, E.,
29th Nov., 1910.

SIR,—In reply to your letter of the 26th instant, I beg to inform you that Mr. Harris, for the Cripps Cycle and Motor Coy., 24-28, Woodford-road, Forest Gate, after repeated personal enquiries and correspondence, has failed to produce evidence to substantiate the certificates given on the three invoices that the full duty has been paid to the Crown on the motor spirit supplied to you. I have therefore to return your application, together with the invoices in question.

I am, Sir, your obedient servant,
THOS. SAUNDERS, Officer of Customs and Excise.

Dr. J. S. McDonagh, 235, Romford-road, Forest Gate, E.

Like your correspondent, I have been too disgusted with my failure to recover rebate for 1909 to make further futile applications, which would probably only result in some other ingenious loophole to avoid payment.

I am, Sir, yours faithfully,

Forest Gate, Jan. 8th, 1911. JAS. S. MACDONAGH.

*To the Editor of* THE LANCET.

SIR,—"Medical Motorist" appears to have been particularly unfortunate. I obtained the 3*d.* per gallon rebate on the petrol bought between April and Dec. 4th, 1909, through the firm which supplied me, and this without any formality. I called at the local Customs office a week ago and was given two forms to fill up, one for the petrol bought during the remainder of December, 1909, and one for that bought during 1910. I had to obtain from my petrol dealers details of the amount of petrol supplied, with a signed certificate to the effect that a total of so many gallons had been sold to me and that the full duty thereon had been paid to the Crown. I sent the forms and this certificate to the local office, and to-day received a cheque from the head office for the amount claimed, except that for some reason or other only 1½*d.* a gallon was allowed on petrol supplied on Dec. 30th, 1909, whilst 3*d.* was allowed on that supplied on Dec. 11th.

I am, Sir, yours faithfully,

Guildford, Jan. 7th, 1911. R. W. C. PIERCE.

## INVALIDITY INSURANCE.

*To the Editor of* THE LANCET.

SIR,—The letters from Mr. John J. Scanlan and Mr. Noel A. Humphreys which appear in THE LANCET of Dec. 17th are important contributions to a very important subject. I admit at once that the statistics to which I personally have access are based on the experience of business and professional men. Moreover, the figures quoted in mine of Nov. 25th have reference to the experience of the

"Century" office during the last 25 years. It seems to me that the rate of sickness in the friendly societies is at least a guide to the tendency in the general rate of invalidity. That the rate of sickness experienced by friendly societies is increasing admits of no doubt. The following figures are of interest:—

| Ages. | Rate of sickness per member per annum in weeks. | | | | | |
|---|---|---|---|---|---|---|
| | Manchester Unity, 1846-48. | Manchester Unity, 1856-60. | Manchester Unity, 1866-70. | A.O.F., 1871-75. | Friendly societies, 1876-80. | Manchester Unity, 1893-97. |
| 20 to 24 | 0·68 | 0·83 | 0·75 | 0·82 | 0·85 | 0·90 |
| 25 ,, 29 | 0·76 | 0·82 | 0·81 | 0·85 | 0·87 | 0·95 |
| 30 ,, 34 | 0·84 | 0·86 | 0·93 | 0·97 | 1·02 | 1·06 |
| 35 ,, 39 | 0·94 | 1·00 | 1·06 | 1·15 | 1·24 | 1·27 |
| 40 ,, 44 | 1·18 | 1·24 | 1·26 | 1·37 | 1·47 | 1·58 |
| 45 ,, 49 | 1·51 | 1·55 | 1·64 | 1·71 | 1·89 | 1·99 |
| 50 ,, 54 | 2·03 | 2·01 | 2·22 | 2·27 | 2·39 | 2·75 |
| 55 ,, 59 | 3·21 | 3·02 | 3·05 | 3·21 | 3·36 | 4·02 |
| 60 ,, 64 | 5·06 | 4·64 | 4·72 | 4·59 | 5·17 | 6·31 |

I just add that a rough investigation of the "Century" experience points to the same conclusion—viz., that the rate of sickness is increasing. I do not ask that the fact that sickness payments are on the increase is "conclusive proof of a real increase of sickness." I do, however, hold that in the absence of population statistics the experience of the friendly societies, and incidentally of the "Century" Company may be held to at least point to the fact that the rate of sickness generally is on the increase.

I am, Sir, yours faithfully,

Edinburgh, Dec. 30th, 1910. W. A. ROBERTSON, Actuary.

# PATENT MEDICINE IN THE UNITED STATES AND IN CANADA.

(FROM A SPECIAL CORRESPONDENT.)

*Present Position in the United States.*

THE Food and Drugs Act of the United States has, since its passage in 1906, checked to a considerable extent the sale of many objectionable nostrums. Several States have passed laws tending in the same direction, and although in some States the sale of patent medicines is comparatively unrestricted, yet there is not the free and open sale of such products as was formerly the case. The laws in general prescribe the qualifications necessary for a pharmacist to engage in the practice of selling medicinal agents, regulate the sale of poisons and narcotics, and forbid the sale of adulterated and misbranded drug products. However, there is at present no Federal law which prohibits unregistered or unlicensed persons from sending into inter-State commerce such commodities, although they cannot be sold locally by them, nor indiscriminately even by registered or licensed pharmacists or medical men. The laws of the United States are by no means ideal as regards nostrums, but at least a beginning has been made; the Bureau of Chemistry of the Department of Agriculture has wielded vigorously the powers placed in it by the Food and Drugs Act, and numerous prosecutions have been made.

*Campaign against Certain Patent Medicines.*

The main effect brought about by the policy of the Bureau of Chemistry has been to educate the public to a sense of the harmfulness of many of the patent medicines. For instance, Dr. L. F. Kebler, chief of the Division of Drugs of the Bureau of Chemistry, published a short time ago a pamphlet pointing out the harmfulness of many of the habit-forming drugs which are contained in so many of the most widely advertised nostrums. He was especially insistent on the fact that the majority of the so-called soothing syrups for infants had in their composition narcotics of one kind or another, especially opium and its derivatives. These soothing syrups are extremely commonly used in America, and Dr. Kebler made out a list of the more prominent ones which contain habit-forming drugs. Of course, a great difficulty met with in America in the endeavour by the authorities to prove to the public that many nostrums are harmful to health is that the lay journals advertise them extensively. The same difficulty is doubtless met with in Great Britain. Wonderful to relate, during the summer of last year an influential daily paper in Philadelphia took the matter up, quoted Dr. Kebler as to the composition of several of the more notorious infant soothing syrups, and initiated a newspaper campaign against the use of these remedies. Further than this, the most conspicuous daily paper of Chicago followed suit and pursued a campaign against babies' soothing syrups with typical western energy. The writers of the articles did not mince words in describing the action of the manufacturers of such products, but vituperated all concerned in the traffic in strenuous western style. Cartoons, too, were brought into use to illustrate more graphically the effect of the syrups, and at the Food Exhibition held in Madison-square Gardens, New York, a few months ago, Dr. Kebler used one of these cartoons on a screen as a part of the Bureau of Chemistry's exhibit to educate the public regarding harmful nostrums generally. Newspapers in different portions of America have interested themselves in the matter to a greater or less extent, and thus the community is beginning to have an intelligent comprehension of the facts of the case.

Moreover, the United States Post Office Department is coöperating with the Division of Drugs. This division in 1909 made analyses of 15 medicinal agents represented as cures for various maladies and sent or prescribed through the post in violation of the postal laws. The investigations required not only the analysis of the samples of the medicines used in the treatments, but also a study of all the claims and representations made for treatment, that the Postmaster-General might be advised as to whether or not false and fraudulent representations and promises had been made. In 1909 and during the past year several successful prosecutions have been brought by the Post-Office Department against nostrum proprietors for violations of the postal laws.

It is impossible to over-estimate the educative influence of the various pamphlets sent out by the Division of Drugs, describing the composition and explaining the injurious nature of many of the well-known quack remedies. It is in this educative propaganda that the utility of the work being done by the Division of Drugs is mainly to be found. Some little time ago Dr. Kebler, Dr. Morgan, and Dr. Rupp, all connected with the Bureau of Chemistry, published a bulletin on the harmfulness of headache powders. These powders are very largely used in America, especially by women, and are no doubt also used on a wide scale in England. It was first shown that acetanilid, antipyrin, and phenacetin are very frequently made use of in the preparation of mixtures intended for the relief of headache and other minor aches and pains; it was likewise shown that the injudicious use of these drugs has produced bad effects in many instances; and furthermore that the number of reported cases of poisoning by at least one of them has increased notably during the past few years. A list was compiled of the authentic cases of poisoning by these drugs, and this plainly proved that headache powders sold indiscriminately are a distinct menace to the public health.

*Position in Canada.*

In Canada, as has been mentioned in THE LANCET,[1] an Act respecting proprietary or patent medicines was passed in July, 1908. Regarding its effectiveness opinions are divided. The general view appears to be that in parts it is not clearly enough expressed and that it is not strictly enforced. The sale of patent medicines is large; most of them are made in the country on account of the large import duty, and many of the large nostrum manufacturing firms in the United States have branch manufactories in Canada. The patent medicine evil is present in Canada to an extent comparable to that in the United States; but whereas in the United States the Department of Agriculture, through the Bureau of Chemistry, is taking vigorous steps to abate it, in Canada the public has not as yet been fully aroused to the fact that the indiscriminate sale of patent medicines is a source of danger. If strictly enforced the Canadian Patent Medicine Act might, many

[1] THE LANCET, Dec. 19th, 1908, p. 1853.

persons believe, meet the exigencies of the situation, but this remains to be proved.

*Proposed Action in the United States.*

The volume of the patent medicine business in the United States is enormous. Three years ago it was worth about $75,000,000 (£15,000,000) a year. In the opinion of the officials of the Bureau of Chemistry the most dangerous nostrums are those which are termed habit-forming—that is, which contain alcohol or narcotics.

The action proposed by Dr. Kebler to counteract the endeavours of the nostrum manufacturers to foist their harmful wares upon a public generally ignorant of their injurious qualities is: 1. To educate the public by means of the press and by pamphlets and lectures. 2. To enact laws forbidding the sale of all injurious habit-forming drugs, such as cocaine, morphine, opium, heroin, &c., and their derivatives and preparations by retail, except on prescriptions of medical men. 3. To require a permanent record, subject to State and Federal inspection at all times, to be kept of all transactions in such drugs, whether wholesale, retail, or by means of prescriptions. 4. To enact laws forbidding the handling of any of these products except by manufacturers, wholesale and retail druggists, and others legally qualified. 5. That the State boards of health, or other governing bodies, should be empowered to withdraw the licences of medical men who prescribe or of druggists who sell these articles for other than legitimate purposes. 6. That a Federal law should be enacted forbidding the interchange in inter-state commerce of habit-forming drugs or of preparations containing them, except through the customary channels of trade, and then only when complete records of all transactions have been kept.

The hopeful feature of the situation as regards patent medicines in the United States and in Canada is that something is being done to restrict their sale. Of course, when the community at large understands the bearings of the case, laws to restrict the sale of objectionable quack remedies will quickly be called for and enforced. The fight will be hard as the patent medicine interests are very rich, and every device that money can command will be put into practice to avoid restrictive legislation. It is worthy of note that cocaine is regarded with especial disfavour in the United States. Stringent regulations as to the sale of the drug exist in practically all the States.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*The Smoke Nuisance.*

AT the annual meeting of the city justices a long discussion took place on the smoke nuisance. Manchester suffers grievously from this infliction, which is more noticed by visitors than by residents, who have become habituated to it. It was suggested at the meeting by a speaker that the city justices were too lenient as to fines. In London and Leeds, one gentleman said (I do not know his authority for the statement), fines were doubled until they reached the maximum of £40. It appears that in 1899, which is certainly going back rather far, 178 cases were reported by the inspectors. Of these 47 were cautioned and 131 were summoned before the justices, who imposed a fine in 90 cases only, and the fines averaged less than 50*s.* each. In the majority of cases such a fine as 50*s.* would not be felt. In the end the resolution that the justices should consider the matter was rejected by 25 votes to 15. It seems a pity that the powers of darkness prevailed, for the constant presence of smoke is a material disadvantage to Manchester, both from a health and a business point of view. Living, as many of the city justices do, beyond the smoke zone, they hardly feel the mere nuisance so keenly as some who live in the centre of things, and their sympathies will be with the manufacturers.

*Hospital Sunday Fund.*

At the recent annual meeting of the Manchester and Salford Hospital Sunday Fund it was announced that during the year £4398 had been received, being an increase over the previous year of nearly £800. The sum distributed among the hospitals was £4100, as compared with last year's distribution of £3400. In his appeal for more help the Lord Mayor said that if the hospitals were municipalised an increase of 10*d.* in the £ on the rates of Manchester would be entailed, "besides losing for the hospitals that personal attention and sympathetic care which they now got from many people." The weak point about the voluntary system is, of course, that a comparatively few persons bear all the burden.

*Bequest for Royton Hospital.*

The late Mr. Kershaw, F.R.C.S. Edin., L.R.C.P. Edin., &c., former medical officer of health of Royton, left £50,000 in order to provide a hospital for the neighbourhood. Royton is a manufacturing town not very far from Oldham. The Royton council wishes to spend £10,000 or £15,000 on the building, and devote the remainder of the fund to endowment.

*Langho Inebriates' Home.*

The above institution came under discussion on Jan. 5th at the meeting of the city justices. Mr. E. J. Broadfield said that they wanted more information as to the cost and efficiency of the treatment at the Langho Home. He said it was admirably managed, but very costly, and asked if it were well to send women there who were quite hopeless. It is no doubt a serious problem to solve. Mr. T. Gregory said that those women who had 50 to 100 convictions against them must either go to prison or to Langho, where they were much better off than in prison. Those who went to Langho from Manchester had on an average 50 convictions against them. "It was impossible to cure such people, but at Langho they were kept at less expense, and more to their own advantage, than in prison." Mr. A. Porter said that in these cases there was only one remedy—to shut them up for life, and they should consider the possibility of providing institutions where such people could be kept for life. In the meantime, considerable extension has taken place in the accommodation at Langho for women drunkards, and the Home Department has certified that the reformatory is fitted for the reception and detention of 294 female inebriates, being an increase of 99 in the number of inmates authorised on Nov. 25th, 1905. As if to illustrate the uselessness of a three years' detention at Langho a case was brought before the Recorder, Mr. Tobin, K.C., M.P., at the Salford quarter sessions on Jan. 9th, four days after the discussion by the justices. A tall, masculine-looking woman, named Lyons, aged 52, pleaded guilty to stealing some clothing on Oct. 30th last. She had already been four times before the Recorder, and altogether there were 33 convictions against her, most of them for drunkenness. In May, 1907, she was sent to Langho for three years as a habitual drunkard. She was discharged early last year, and on May 21st was again before the court for stealing. The Recorder sentenced her to six months' hard labour.

*Mentally Defective Children.*

The necessity for the permanent care of children mentally defective is becoming more widely believed and acted on. On Jan. 4th the Oldham town council passed a resolution to the effect that such children "should be cared for by public authorities after they leave school." Councillor Hirst said that it had been found impossible to make mentally defective children in any sense self-reliant. They must be to some extent a burden on others and a danger to the community, and "they should be cared for in institutions provided by the public authorities and paid for by the legislature." But if all the chronic drunkards and all the defective children are to be practically segregated all their lives at the public expense, ratepayers will have a heavy burden.

*Kissing the Shuttle.*

In connexion with your recent note on this subject, a case reported by a sanitary inspector at Bacup is interesting. He visited a house where he found a case of phthisis, and ascertained that three persons who had worked on the same looms had all died from consumption. All had followed the universal practice of the weavers of threading the shuttles with the mouth.

Jan. 10th.

THREE lectures on the Comparative Anatomy of the Vertebrate Ear will be given by Mr. R. H. Burne at the Royal College of Surgeons of England, Lincoln's Inn-fields, on Thursdays, Jan. 19th and 26th and Feb. 2nd, at 5 P.M. The lectures are delivered in connexion with the University of London.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*The University of Birmingham.*

THE Chancellor of the University, Mr. Chamberlain, has addressed an appeal to the city council through the Lord Mayor for a further grant to the University from the rates. The number of students has increased from 678, ten years ago, when an annual grant equivalent to a halfpenny rate was first made, to 957, and in the same period the professorial staff has risen from 29 to 37, while the junior staff has practically doubled. At present the income is far below the necessary expenditure. The increased Treasury grant of £50,000 to university colleges, promised by the Chancellor of the Exchequer, is to be apportioned on the basis of the local support afforded to each establishment, which forms an additional reason for further municipal assistance.

*Notification of Births at Erdington.*

The adoption of the Notification of Births Act at Erdington had formerly been opposed by the medical men of the district. The health committee of the urban council on the representations of the medical officer of health (Dr. A. Bostock Hill) has again given the question earnest consideration and now recommend that the Act be adopted. At the last monthly meeting of the Erdington district council the recommendation of the health committee was unanimously agreed to. The chairman stated that the medical men were now willing that the Act should be adopted, provided that the notification was by letter instead of by post-card, and that the county health inspector should not visit houses where properly qualified practitioners were in attendance. Dr. Hill said there could be no possible objection to the employment of letters as suggested. No difficulty had been experienced in Birmingham, Aston, Leamington, and other places where the Act had been adopted. The adoption of the Act in Erdington brings the district into line with the other suburbs included in the greater Birmingham scheme.

*Pathological Society of Great Britain and Ireland.*

This society held an interesting and well-attended meeting in the pathological department of the University on Jan. 6th and 7th. The members were entertained at luncheon in the University Club on Jan. 7th by the members of the staffs of the General and Queen's Hospitals, Mr. Jordan Lloyd, the president of the clinical board, occupying the chair.

Jan. 8th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Vaccination in Scotland.*

THE working of the Vaccination (Scotland) Act, 1907, is giving rise to some concern. Previous to the passing of this Act Scotland was a well-vaccinated country, there was no provision for "conscientious objectors," and the number of parents declaring themselves such was small. The Act of 1907 provided a clause whereby vaccination might very easily be evaded. This clause consists of a declaration that in the opinion of the parent signing, vaccination would be injurious to the health of the particular child named. No objections to vaccination in general need be avowed, nor are parents required to undergo any examination before magistrates. The result, as might have been foreseen, is that the clause is being taken advantage of by the most ignorant of the people, sometimes on account of prejudices against vaccination, but often merely to escape the inconvenience of having an infant upset and fretful for a few days after the operation. The Registrar-General for Scotland in his report for the year 1908 estimates that in that year alone, as the effect, direct or indirect, of this Act, 20,000 unvaccinated children were added to the population of Scotland. The public health committee of the Edinburgh town council has had the matter under consideration for some weeks, and at a meeting of a subcommittee thereof on Jan. 7th it was proposed to memorialise Parliament to make an amendment on the 1907 Act with a view to reducing the numbers of persons at present taking advantage of the exemption clause. The Edinburgh Practitioners' Association is also moving in the matter. An application has been made to the public health committee by the National Antivaccination League, London, to be heard on the subject by deputation, and the subcommittee has arranged to hear representatives of the league.

*The University of Edinburgh.*

The annual report for 1910 shows the total number of matriculated students (including 624 women) to be 3366, of whom 1370 (including 21 women) were in the Faculty of Medicine. Of the students of medicine 615, or nearly 45 per cent., belonged to Scotland; 257, or nearly 19 per cent., were from England and Wales: 105 from Ireland; 96 from India; 245, or nearly 18 per cent., from British Colonies; and 52 from foreign countries, showing that the proportion of non-Scottish students of medicine is well maintained. Among the degrees conferred were: M.B., C.M., 1; M.B., Ch.B., 214; M.D., 76; and Ch.M., 2. The diploma in Tropical Medicine and Hygiene was conferred on five candidates. Of University Fellowships, scholarships, &c., the total annual value is £18,870, of which £3890 are in the Faculty of Medicine. A sum of over £5000 has been given to the University by Mr. Robert Munro, M.D. Edin., LL.D., of Elm Bank, Largs, Ayrshire, for the foundation and endowment of a lectureship in the University, to be known as "The Munro Lectureship on Anthropology and Prehistoric Archæology." Dr. Munro has himself been appointed first lecturer, and he is expected to deliver the first course of lectures during the academic session 1911–12. The Court has appointed Mr. A. Murray Drennan, M.B., lecturer on practical pathology. At the end of the summer session Dr. T. S. Clouston resigned the lectureship in mental diseases, which he had held since 1879, being its first incumbent. The report expresses its regret, and refers to his services in the advancement of science and in the improvement in the treatment of the insane. Mr. R. B. Thomson, M.B., is now second lecturer in anatomy, a vacancy having been occasioned by the resignation of Dr. David Waterston. Mr. David Wallace, M.B., C.M., Mr. J. M. Cotterill, M.B., C.M., and Mr. J. W. B. Hodsdon, M.B., C.M., have been appointed lecturers in clinical surgery. At the general Parliamentary election in January Sir Robert B. Finlay, M.D., LL.D., was elected, and in December he was re-elected (without a contest) Member of Parliament for the Universities of Edinburgh and St. Andrews. The Lords of the Treasury have intimated that they are prepared to make a substantial increase in the annual grant from the public funds to the University. Personal gifts are reported from Emeritus Professor Alexander Crum Brown, Dr. Henry Barnes of Carlisle, Mr. James Lyle, Emeritus Professor Campbell Fraser, and Mr. John Storer Bainbridge. A prize of £50—the twelfth Gunning prize—for Public Health has been instituted, and also an additional Hope Chemistry Prize of £30. A scheme of post-graduate courses in medicine, under the joint auspices of the University and the Royal Colleges of Physicians and Surgeons, is stated to have proved highly successful.

*Phthisical Paupers in Glasgow.*

The question of who is responsible for the care and treatment of phthisical cases amongst the poor and working classes seems likely soon to become acute in the city of Glasgow. The responsibility lies between the corporation and the parish council. Up to comparatively recently the corporation did not deal with the matter at all. Recently it has made notification of phthisis cases compulsory, and has established dispensaries in various parts of the city, and also at Bellefield it carries on the work of a small sanatorium where selected cases are taken in and treated. The notification is certainly a step in the right direction, but the arrangements for treatment originated by the corporation do not pretend to deal with all the phthisical cases of a large city. At present, therefore, a few of the cases more likely to recover are selected by the corporation for treatment in its sanatorium, whilst the serious and hopeless cases, involving longer residence in an institution and more expense, are left to be dealt with by the parish council. The parish council unfortunately is further hampered by restrictions which make it impossible for that body to deal with the problem in the only way which gives any hope of permanent success. It is compelled to take in the working man suffering from phthisis when he has become unfit for work in the advanced

stages of the disease, to give him medical care and maintenance during a protracted illness, and after his decease (for the mortality-rate is bound to be high in such cases) to support any dependents whom he leaves unprovided for. Should the parish council accept the responsibility of dealing with the disease, and demand that it should get the control of these cases in an early stage, then the Local Government Board steps in and forbids it to put on the rates men who, though afflicted with the incipient stage of the disease, are still able and willing to work and support their families. It seems only right that the parish council should be allowed to do as suggested, or, failing that, that the corporation, having adopted compulsory notification, should be compelled to carry out the logical sequence and to deal with those cases in isolation hospitals in the same way as it deals with scarlet fever and other infectious diseases. A report on the condition of Barnhill poorhouse recently issued by one of the medical inspectors of the Local Government Board seems likely to revive the whole question which for some time has been allowed to lie dormant. In Barnhill poorhouse, where most of the inmates are infirm and aged people, the medical inspector found 178 cases of phthisis requiring treatment in bed, and not isolated from the other inmates of the institution. The Local Government Board, on the strength of this report, has called upon the parish council to make more suitable provision for these patients. Naturally, under the circumstances, the parish council does not wish to spend more money on building in the present unsettled state of matters, and it urges that now is the time for the corporation to undertake the responsibility that really belongs to it in the matter.

*The Oldmill Poorhouse Medical Officership.*

The medical officership of the Oldmill poorhouse was frequently considered by the last parish council, but the salary offered for the duties of visiting medical officer was considered insufficient by the local branch of the British Medical Association, which body discountenanced acceptance of the post on the parish council's terms, and stipulated £150 as the minimum salary. A deadlock occurred, and the council remitted the matter to its successors for decision, an interim provisional appointment being made. At the meeting of the poorhouse committee of the new council on Dec. 27th last it was resolved by 5 votes to 4, after two hours' discussion, to offer £150 per annum, and to advertise for applicants. The medical man appointed will visit the institution, situated about 2½ miles from the centre of the city, every alternate day. It was also recommended that the council should offer £40 for a dispenser, the dispensing at present being done by the resident medical officer. An amendment was offered to appoint a resident male medical practitioner at a salary of £200 per annum, with board and residence. The recommendation will come up for consideration at the next council meeting.

Jan. 9th.

## IRELAND.

### (FROM OUR OWN CORRESPONDENTS.)

*Paupers and Pensions.*

WITH the removal of the pauper disqualification a large number of old people took their discharge on Jan. 6th from the various union workhouses throughout the country, and many others were struck off the lists for outdoor relief. In the North Dublin union 84 inmates took their discharge, and about 150 people in receipt of outdoor relief were struck off the lists. In South Dublin union 174 inmates left the house on pensions, and there are said to be still some 400 claims under investigation, while some 350 have gone off the outdoor relief lists. In the Dublin unions alone it is calculated that nearly £6000 a year will be saved to the ratepayers. In country unions the figures are smaller, though in the south particularly they remain considerable.

*Infantile Mortality in Dublin.*

A conference is to be held in the Mansion House, Dublin, on Jan. 19th, to discuss the best means of dealing with infant mortality in Dublin and of securing the advantages of the Early Notification of Births Act recently adopted by the Dublin corporation. The summons to the meeting is signed by the Lord Mayor, the medical superintendent officer of health, and the masters of the various maternity hospitals in Dublin. The chief object is to organise a band of voluntary workers, under the control of the public health department, to aid young mothers and their infants, as has been successfully done in Edinburgh, Glasgow, and elsewhere.

*Congress of the Royal Institute of Public Health.*

Arrangements are being pressed forward for the congress of the Royal Institute of Public Health in Dublin next August. The authorities of Trinity College have granted the use of their buildings for the congress. There will be 16 sections, the chief of which are chemistry, pathology, bacteriology, veterinary science, engineering, architecture, education, vital statistics, tuberculosis, and town planning.

*Zymotic Diseases in Dublin.*

Scarlet fever is so prevalent in Dublin that the Cork Street Fever Hospital is taxed to the utmost. Eighty beds out of its 200 are occupied with this disease, many cases being of a severe type. So great is the congestion that the managing committee has had to issue a special appeal for funds. Diphtheria and whooping-cough are also prevalent.

*Medical Man as High Sheriff.*

Mr. J. B. Story, F.R.C.S.Irel., has been appointed High Sheriff of County Tyrone. Mr. Story is a member of Council of the Royal College of Surgeons in Ireland and surgeon to the Royal Victoria Eye and Ear Hospital, Dublin.

*The Health of Belfast.*

At the meeting of the city council of Belfast held on Jan. 2nd, the medical officer of health submitted the accompanying table showing the number of cases of infectious diseases notified during 1910 (calculated on the number notified during the 50 weeks ended Dec. 17th, 1910), as compared with 1906–7–8–9 :—

| — | Typhus fever. | Typhoid fever. | Scarlet fever. | Simple continued fever. | Puerperal fever. | Small-pox. | Diphtheria. | Membranous croup. | Erysipelas. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1910 ... | 7 | 97 | 719 | 16 | 14 | — | 232 | 5 | 260 | 1355 |
| 1909 ... | 6 | 90 | 355 | 39 | 23 | — | 195 | 10 | 260 | 978 |
| 1908 ... | 19 | 274 | 323 | 208 | 22 | — | 221 | 27 | 294 | 1388 |
| 1907 ... | — | 356 | 531 | 270 | 29 | 1 | 257 | 37 | 341 | 1892 |
| 1906 ... | 9 | 551 | 1193 | 366 | 17 | — | 233 | 40 | 340 | 2749 |

The table given below was included, showing the number of deaths and the average annual death-rate per 1000 of the population from all causes, and from zymotic diseases, typhoid fever, and phthisis during the year 1910, calculated as above, as compared with 1906–7–8–9 :—

| Year. | All causes. | | Zymotic diseases. | | Typhoid fever. | | Phthisis. | |
|---|---|---|---|---|---|---|---|---|
| | No. | Rate. | No. | Rate. | No. | Rate. | No. | Rate. |
| 1910 ... ... ... | 7343 | 18·7 | 1109 | 2·8 | 19 | 0·04 | 833 | 2·1 |
| 1909 ... ... ... | 7028 | 18·2 | 511 | 1·3 | 20 | 0·05 | 811 | 2·1 |
| 1908 ... ... ... | 7523 | 19·5 | 689 | 1·8 | 57 | 0·15 | 880 | 2·3 |
| 1907 ... ... ... | 7870 | 21·3 | 615 | 1·7 | 82 | 0·22 | 926 | 2·5 |
| 1906 ... ... ... | 7379 | 20·1 | 905 | 2·5 | 90 | 0·24 | 1015 | 2·7 |

The extremely low typhoid death-rate in 1910—that is 0·04—is gratifying, but the high zymotic death-rate—2·8—is unsatisfactory, as is also the death-rate from all causes—18·7 (18·2 in 1909); and the abnormal phthisis mortality—2·1—shows no fall from the previous year. During 1910 1109 deaths from zymotic disease gave a rate of 2·8, largely due to the epidemics of measles (which caused 522 deaths) and whooping-cough. The infantile mortality in 1910 (up to Dec. 17th) was 144, as compared with 135 in 1909, 147 in 1908, 135 in 1907, and 143 in 1906. The rate in 1910 is largely attributable to the number of deaths from measles, of which 522, equal to a rate of 1·3 per 1000 population, were registered—as high a rate as that from all zymotic diseases in 1909. It is clear the

epidemics of measles and whooping-cough in 1910 brought about the high general death-rate (18·7), and the very high infantile mortality (144). In speaking on the matter the chairman of the public health committee referred to measles and whooping-cough as being "two diseases over which the corporation had very little control"; but clearly, as custodians of the public health, the corporation will have to take far stronger measures than it has done in the past to deal with these maladies, so terrible in their effects. A reduction in their mortality can be effected only by managing them like other zymotics, as the dispensary medical officers of health suggested in their resolution forwarded to the public health committee during the measles epidemic—that is, by notification, disinfection, and isolation in hospital. The high phthisis mortality (2·1) was ascribed at the meeting to Belfast becoming the consumptive dumping-ground for the North of Ireland. The corporation has passed a resolution forbidding the admission of anyone into the Forster Green Sanatorium, where there are municipal beds, unless after a residence of one year in Belfast, and the public health authorities allege that the board of guardians admit consumptives into the Abbey Sanatorium without any such stipulation, so that patients outside the Belfast area enter that institution. At a meeting of the guardians on Jan. 3rd, however, this was denied, and in a report from the Abbey Sanatorium committee it was stated that, as far as the officials could ascertain, the patients admitted into their sanatorium did belong to Belfast. The chairman of the sanatorium committee said that the shortest period of residence in Belfast before admission to the sanatorium had been six months. What is wanted in this discussion is the facts. If the Belfast city public health authorities raise a barrier against admitting any person into their sanatorium unless after a residence of a year in the city, the country boards will be sure to send back to the city all cases which leave Belfast or the surrounding districts.

*David Taylor, M.D. Q.U.I.*

News has just reached Belfast of the death of a well-known Ulster man, Dr. David Taylor, which occurred in November at Kinchunpore Tea Estate, Cachar, Assam. Born at Greyabbey, Co. Down, in 1857, the deceased was educated at the Belfast New Academy, at Queen's College, Belfast, and at St. Thomas's Hospital, London. In 1877 he obtained the M.D. of the old Queen's University of Ireland, and he became a Member of the Royal College of Surgeons of England in 1879. Proceeding to India, he settled at Hailalsandi, adding to his *clientèle* the Chotla Bhéel, and soon acquiring an extensive practice. A skilful physician, a sportsman, and of pleasing social qualities, he became very popular. Some years ago, on returning to Ireland, his friends in India presented him with a yacht—the *Dolphin*—which was a familiar craft in the North of Ireland. Finding, however, that the climate of Ireland did not suit him, Dr. Taylor returned to India in 1909. He was in the North of Ireland last year and again raced the *Dolphin* in Belfast Lough and in the Clyde. Dr. Taylor was a man of the most kindly disposition, and his good qualities endeared him to all those who knew him.

Jan. 11th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Medical Diplomas Granted during the Academical Year 1909–10.*

IN the course of the academical year 1909–10 the French faculties of medicine granted 915 State diplomas and 52 university diplomas—i.e., a total of 967 diplomas of doctor of medicine. The period in question was moreover the first during which no diploma of *officier de santé* was granted. The number of diplomas given by some of the individual faculties was as follows: Paris, 450 State and 34 university diplomas; Algiers, 3 State diplomas; Bordeaux, 70 State and 3 university diplomas; Lyons, 109 State and 3 university diplomas; Montpellier, 120 State and 13 university diplomas; Nancy, 32 State and 2 university diplomas; Toulouse, 55 State diplomas; and Beyrout, 32 State diplomas.

*Osteomalacia of Tuberculous Origin.*

At a meeting of the Academy of Medicine held on Jan. 3rd M. Poncet and M. Leriche, speaking on the subject of osteomalacia, said that it was a disease of the bone marrow, and that it was due to a variety of causes acting in several different ways, but whatever its form or the date of its appearance might be, it consisted of a group of symptoms presenting some degree of clinical uniformity. Etiologically there were cases which might be said to be of ovarian, or suprarenal, or thyroid origin, according as the secretory functions of one or other of these three glands was insufficient or disordered, but such glandular lesions were only secondary causes of the disease, and it was important to know what were the primary causes of these pathological conditions. As a result of their personal observations M. Poncet and M. Leriche have proposed a new hypothesis—namely, that tuberculosis was often a primary cause of the disease. They considered that the infective action of the tuberculous virus was demonstrable both in essential diffuse osteomalacia and in partial osteomalacia. The latter form of the disease—i.e., the local manifestations which were so common in the tibia, in the femur, and in white swellings of the knee and the hip-joint, were not due either to general impairment of nutrition or to immobilisation, but were the result of tuberculous infection, which might be either latent or active and might affect either a neighbouring or a distant part.

*Notification of Infectious Diseases in Algeria.*

At the same meeting of the Academy of Medicine M. Vincent recommended that the list of diseases scheduled for compulsory notification should be enlarged by the addition of relapsing fever, Malta fever, trypanosomiasis and piroplasmosis in the human subject, and leprosy. In consequence of its great frequency, its severity, and the large amount of blindness which it caused in Algeria, he also recommended that granular ophthalmia should be added to the list. He said that children who had not received treatment or who were still in an infectious stage ought to be excluded from the schools. With regard to malaria, he spoke in favour of the observation of the endemic index—i.e., the determination of the percentage of children under 15 years of age whose blood contained the hæmatozoon, or, failing this examination, the determination of the percentage of children with enlargement of the spleen. Local inquiries ought also to be held with regard to the frequency of first attacks, the forms of the disease, and the preventive measures which had been taken or required to be taken, such as methods of dealing with the haunts and breeding-places of the anopheles, mechanical devices for protection against the insects, and other means to the same end. The public exhibition of placards in French and Arabic would be useful in spreading a knowledge of some elementary facts connected with malaria, such as the parts played respectively by mosquitoes, by former sufferers from the disease, and by children as carriers of germs.

Jan. 9th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

*The Organisation of the Italian Schools of Obstetrics.*

THE new regulations concerning the creation and organisation of the schools of obstetrics for the education of qualified midwives in Italy have now received the Royal sanction. It is now required that a midwife, to obtain the necessary qualification, shall have to undergo a course of practical as well as theoretical instruction at one of the above-named schools, to be created in every town in which there already exists a medico-surgical faculty or an institute for gynæcology and obstetrics, and also in the towns of Aquila, Bari, Catanzaro, Milan, Novara, Venice, and Vercelli. The schools in the latter towns will be under the direction of the universities in their neighbourhood; Naples in the case of the first three, Turin for Novara and Vercelli, and Padua for Venice. Every school will be under the direction of a professor, at least one assistant holding a qualification in medicine and surgery, and a mistress-midwife (*levatrice maestra*). The schools must be connected with a maternity hospital or any hospital containing at least 15 beds reserved for maternity

cases and in which the total births during a year do not fall below 120 cases. The number of students is limited to three times the number of available beds. To obtain the qualification of midwife the candidates must be at least 18 and not over 36 years of age, in good health, and not disabled by any deformity likely to interfere with their work. A certificate of elementary education or the matriculation qualification is required, as well as a statement regarding good conduct. Candidates must also have been vaccinated, and in the case of unmarried women the consent of the father or of a guardian must be produced. The course of training lasts two years, and is divided into a theoretical and practical part; the first lasts one year and consists in lectures given by the director of the school. Practical instruction begins simultaneously with the theoretical course, and this knowledge is acquired at the bedside. Candidates will have to pass two examinations to obtain their qualification; the first will take place at the end of the first year, i.e., at the end of the theoretical course, and the second at the close of the second year. The first examination is to consist of a reply in writing to two questions, four hours being allowed (the paper must be written without any help) and an oral examination lasting half an hour. In the practical examination the candidate will have to send in a paper dealing with two cases treated by her under the guidance of the director or of his assistant; in addition there will be an oral examination lasting at least one hour, and dealing particularly with the report of the two cases sent in and also with the principal obstetric manipulations to be performed on the child, diagnosis of pregnancy, exploration, assistance at birth, the dangers and the precautions to be observed in the case of complications, and the duties of midwives in the exercise of their calling. The following scale of fees for candidates has been established:—

| | | |
|---|---|---|
| Matriculation tax ... | 12*s.* | |
| Inscription tax ... | 32*s.* | for the course of two years. |
| Examination fee ... | 19*s.* 2*d.* | |
| Tax of diploma ... | 8*s.* | |

The examination fee will be divided in equal parts among the examiners. There are at present about 14,000 women practising as midwives in Italy.

Jan. 7th.

# Obituary.

## EDWARD HOWARD COLLENS, M.B. LOND., L.R.C.P. LOND., M.R.C.S. ENG.

THE medical profession of Herefordshire has sustained a severe loss through the death at Vienna on Dec. 18th, 1910, of Edward Howard Collens, a week after undergoing an operation for the removal of a pituitary tumour. He had been under the joint care of Professor v. Frankl-Hochwart, Professor v. Eiselsberg, and Dr. O. Hirsch, by whom the operation was performed. The actual cause of death was broncho-pneumonia. He was born in Stourport in 1872 and attended the medical school of Mason College, Birmingham. In 1898 he obtained the Membership of the Royal College of Surgeons of England and became a Licentiate of the Royal College of Physicians of London, taking his degree M.B. Lond. in 1899. He was house surgeon at Queen's Hospital, Birmingham, and in 1901 went to practise in Hereford, where he gained the esteem of his colleagues and the affectionate regard and confidence of his patients. He was on the staff of the Hereford Provident Dispensary and for several years was superintendent of the fever hospital and police surgeon. He took a great interest in police ambulance work aad trained the men under his charge with great success. He leaves a widow to mourn her loss.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Lindmann, President of the Medical Council of the Archduchy of Baden.—Dr. Hermann Kestner, district physician of Mülhausen in Alsace, a grandson of Charlotte Kestner, whose maiden name was Buff, and who was the original of Goethe's Lotte in his "Sorrows of Werther." Dr. Kestner had been in retirement three or four years. He was 86 years of age. His father was the seventh son of Charlotte Kestner.—Professor Sprengel, privy medical councillor of Brunswick.

# Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—At the First Professional Examination of the Conjoint Examining Board held on Jan. 3rd, 4th, 5th, and 6th the following candidates were approved in the undermentioned subjects:—

*Chemistry and Physics.*—Johannes Willem Bouwer, London Hospital; Arthur Bulleid, Guy's Hospital; David John Evans, Epsom College and St. Thomas's Hospital; Ilse Fischer (Miss), Leeds University; John Vaughan Griffith, Liverpool University; William Tudor Gwynne-Jones, London Hospital; William Llewellyn Aplin Harrison, St. Mary's Hospital; Vincent Coram James, Middlesex Hospital; William Baly Jepson and Noël Sigismund Koch, St. Bartholomew's Hospital; Charles William Lakin, Guy's Hospital; Henry Guy Ludolf, Leeds University; James McDonnell, London Hospital; William Hubert Milligan, St. Thomas's Hospital; Harold Dobson Pickles, Leeds University; David John Platts, King's College; Robert Mowat Reid, St. Bartholomew's Hospital; Khan Sahib, St. Thomas's Hospital; Bryan Montague Tuke, Middlesex Hospital; and José Victory, Costa Rica and Guy's Hospital.

*Chemistry.*—Kenneth Leslie Bates, Guy's Hospital; Reginald Naunton Bates, Liverpool University; John Behesnilian, Charing Cross Hospital; Percy Herbert Burton, London Hospital; Arthur Stanley Carter, Middlesex Hospital; Henry Judson Grimshaw, Liverpool University; Henry Barry Hyde, St. Thomas's Hospital; John Robert John, University College, Cardiff; Philip Savage, Guy's Hospital; Noel Archibald Scott, St. Bartholomew's Hospital; Arthur Dighton Stammers, London Hospital; David Page Thomas, St. Bartholomew's Hospital; John Aylmer Tippet, St. Thomas's Hospital; Jurin Totton, Guy's Hospital; Walter Aslatt Turner, Hartley University College, Southampton; and Henderson Whyte, London Hospital.

*Physics.*—John Andrew, South Western Polytechnic, Chelsea; Joseph Herbert Bayley, London Hospital; Alfred Allwright Brown, Birkbeck College; William Barnes Buer, Guy's Hospital; Edmund Sheppard Cuthbert, St. Bartholomew's Hospital; Herman Gerald Dresing, Guy's Hospital; John Fox-Russell, Middlesex Hospital; Colin Charles Gordon Gibson, Guy's Hospital; Kenneth James Menteith Graham, St. Mary's Hospital; Gustaf Hahr, Polytechnic Institute, Regent-street; Richard Annesley Holmes and Lancelot Horsley, Guy's Hospital; Ernest Gwyn Howell, University College, Cardiff; Alexander Joseph Vincent McDonnell, London Hospital; Warre Harriott Alexander Pratt, Guy's Hospital; and Roy Bingley Pullin and Harold Ernest Pierpoint Yorke, St. Bartholomew's Hospital.

*Biology.*—John Gordon Ackland, Royal Albert Memorial College, Exeter, and St. Bartholomew's Hospital; Percy William Lavers Andrew, Middlesex Hospital; Kenneth Leslie Bates, Guy's Hospital; Johannes Willem Bouwer, London Hospital; William Alexander Clements, Manchester University; Oliver Francis Conoley, London Hospital; Herbert Carr Duggan, Guy's Hospital; John Eric Evans, Liverpool University; Moustafa Fahmy, Cairo, and London Hospital; Ilse Fischer (Miss), Leeds University; James Douglas Fleck, St. Mary's Hospital; William Tudor Gwynne-Jones, London Hospital; Alfred Risdon Hacker, King's College; George Harris Haines, University College Hospital; Douglas Vernon Halstead, Guy's Hospital; Walter Owen Hughes, Liverpool University; Vincent Coram James, Middlesex Hospital; William Baly Jepson, St. Bartholomew's Hospital; Charles William Lakin, Guy's Hospital; Marie Gertrude Gwendoline Calvert Link (Miss), South Western Polytechnic Institute; Noel Heathcote Seton Maelzer and Lancelot Turtle Montgomery, Guy's Hospital; Henry Maurice Peacock, Birkbeck College; Roy Bingley Pullin, St. Bartholomew's Hospital; Bertram Pyman, University College, Cardiff; Norman Ward Rawlings, Manchester Unversity; Noel Archibald Scott, St. Bartholomew's Hospital; Mian Mohammad Shaffi, London Hospital; Walter Aslatt Turner, Hartley University College, Southampton; and Francis Bernard Yonge, Middlesex Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination, Parts I. and II., held on Jan. 2nd, 4th, and 5th, the following candidates passed in the subjects indicated:—

*Chemistry.*—C. A. Hepburn, Manchester.

*Materia Medica and Pharmacy.*—H. Cox, Birmingham, and R. Jones, Charing Cross Hospital.

*Anatomy.*—A Abdelal, Guy's Hospital; D. Blair, Glasgow; H. Dudley, University College Hospital; N. E. Farr and F. C. Godding, Guy's Hospital; G. B. Holroyd, London Hospital; R. Jones, Charing Cross Hospital; H. E. Rose, Cambridge; and A. H. Taymour, Guy's Hospital.

*Physiology.*—A. Abdelal, Guy's Hospital; H. Dudley, University College Hospital; F. C. Godding, Guy's Hospital; R. Jones, Charing Cross Hospital; and H. E. Rose, Cambridge.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce the impending publication of "A Manual of Gynæcology," by Dr. T. W Eden, obstetric physician to Charing Cross Hospital. The object of the book, which is a companion volume to the same author's "Manual of Midwifery," is to present a comprehensive account of the diseases of women from the standpoint of pathology and treatment. The same publishers will shortly issue a book by Dr. J. B. Hurry of Reading on the subject of "Vicious Circles in Disease."—"A Text-book of Gynæcological Surgery," by Dr. Comyns Berkeley and Mr. Victor Bonney, is

announced for publication by Messrs. Cassell and Co. at the end of January. It represents the surgical experiences the authors have gained at the Middlesex Hospital and the Chelsea Hospital for Women, and is illustrated with nearly 400 drawings from the pencil of Mr. Bonney.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.—A course of eight lectures on the Physiological Significance of Amines, will be delivered by Dr. H. H. Dale in the Physiological Institute, on Fridays, at 4.30 P.M., commencing Jan. 20th. These lectures are open, without fee, to all internal students of the University of London, and to such other persons as are specially admitted.

PRESENTATION TO A MEDICAL PRACTITIONER.—In the Auckland, New Zealand, City Council Chamber on Nov. 10th last Mr. Robert Stopford, L.R.C.P. Irel., and his wife, who are leaving Auckland to take up their residence in Sydney, were presented with a handsome tea and coffee service, a claret jug, and a hot-water jug by Mr. Stopford's friends and patients. Mr. Stopford was also presented with an illuminated address and chiming clock.

DONATIONS AND BEQUESTS.—The late Mr. John Bradshaw of Cheltenham has bequeathed £1000 to the Lancaster Royal Infirmary to endow a "John Bradshaw bed," £500 to the Manchester Royal Infirmary, £200 to the Cheltenham General Hospital, and £100 to the Harrogate Infirmary.—The late Mrs. Elizabeth Baker of Castle Wivelliscombe, Somerset, has left £10,000 each to the Bristol General Hospital and the Hospital for Consumptives, Winsley, Wiltshire.—The residue of the estate of the late Mrs. Gulielma F. Moss, amounting to about £15,000, has been bequeathed by the testatrix to Bolingbroke Hospital.—Under the will of the late Miss H. L. Maw the Manchester Royal Infirmary and the Lincoln County Hospital will each receive £1000 for the endowment of memorial beds in perpetuity.—The late Mr. S. Staniforth bequeathed £1000 each to the Sheffield Royal Infirmary and the Sheffield Royal Hospital, £300 to the Jessop Hospital for Women, Sheffield, and £200 to the Sheffield Children's Hospital.—The late Mr. J. Kershaw, F.R.C.S. Edin., left by will £50,000 for the erection of a hospital at Royton, Lancashire.—Lady Meux has left by will £1000 free of legacy duty towards the endowment of the Cheshunt Cottage Hospital.

PUBLIC HEALTH ADMINISTRATION IN TREGARON RURAL DISTRICT.—One of the most satisfactory and gratifying features of the many meetings which have been held during the past few months in various parts of Wales in connexion with the scheme for combating consumption is the reiteration by different speakers of the great need for effecting improvements in the sanitary condition of rural districts. At one such meeting, held at Aberystwith on Dec. 19th last, it was pointed out that there was an appalling amount of ignorance on sanitary matters, and that sanitary authorities must be stimulated into taking action to remedy existing conditions by the force of public opinion. While the county of Cardigan, from its situation and other favourable circumstances, should be one of the healthiest districts in the country, it has a higher death-rate from consumption than any other county in England and Wales. If the remaining sanitary authorities in the county of Cardigan are as indifferent to their responsibilities as the Tregaron rural district council appear to be there is ample justification for the statements referred to. In a report presented to the Local Government Board in 1907 by Dr. E. P. Manby concerning that district it was stated that the inspector of nuisances was in receipt of a salary of 11*s.* 6*d.* weekly. The area of the rural district is 189 square miles, and it contains about 2000 houses. Latterly the inspector's salary has been increased to £50 per annum, and he has devoted three days a week to his duties. In a communication read at a meeting of the district council on Dec. 20th last the Local Government Board stated that the duties of the inspector of nuisances could not be performed satisfactorily if so short a period was devoted to them, having regard to the amount of travelling necessary, and suggested that an adequate salary should be paid for whole-time services. The members of the council expressed indignation at what one member described as the unreasonableness of the council being overridden by a number of clerks in London, and it was seriously suggested that the services of an inspector should be dispensed with altogether. If any doubt could exist of the necessity of sanitary officers in the Tregaron rural district that doubt would be dissipated by even a cursory perusal of Dr. Manby's report. It is there stated that internally the conditions of many of the cottages are often far from satisfactory—e.g., floors of bare earth, walls damp, and rooms insufficiently lighted and ventilated. Houses are built back to earth and have no through ventilation. Windows are of small size and many do not open. This want of ventilation, in its possible relation to the high death-rate from phthisis, has been frequently referred to by the medical officer of health, and the council, in Dr. Manby's opinion, had been neglectful of its duty in not endeavouring to secure in systematic manner the improved lighting and ventilating of dwellings in their district. Other conditions reported on adversely by Dr. Manby make it abundantly evident that there is plenty of work ready to the hand of an energetic sanitary officer if he only receives the support from the sanitary authorities to which he is entitled.

THE FIGURES OF STATE EDUCATION.—A White Paper (Parliamentary Paper No. 338) was issued during the week above Sir Robert Morant's signature, entitled "Return Showing the Number of Boys and Girls Respectively on the Admission Registers of Ordinary Public Elementary Schools in England and Wales on the 1st Day of October in the Years 1907 and 1908, Arranged According to their Years of Age under the Areas of Local Education Authorities for Elementary Education." The form is dated Nov. 25th, 1910. In England on Oct. 1st, 1908, there were 5,637,340 boys and girls included in the return, of whom 11,170 were in schools not maintained by the local education authorities under Section 15. Of this number 2,842,415 were boys and 2,794,925 were girls. In Wales on the same date there were a total of 441,798 children included, of whom 223,040 were boys and 218,758 were girls. The grand total of England and Wales for Oct. 1st, 1908, was therefore 6,079,138 elementary school scholars. In London there was a total of 740,262 such scholars, of whom 372,988 were boys and 367,274 were girls.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.

Consultations Médicales. Maladies de l'Appareil Digestif et de l'Appareil Respiratoire. Par H. Huchard, Membre de l'Académie de Médecine, Médecin de l'Hôpital Necker. Price Fr.12.

BERTHIER, O., LIBRAIRE MÉDICALE (ÉMILE BOUGAULT, Successeur), 77, Boulevard Saint-Germain, Paris.

Formulaire Clinique et Thérapeutique pour les Maladies des Enfants. Par le Dr. Albert Veillard, Médecin Consultant à Vichy. Cinquième Édition, revue et mise au courant des Nouveautés thérapeutiques conforme au nouveau Codex. Price Fr.4.

COMPANIA SUD-AMERICANA DE BILLETES DE BANCO, Chile, 263, y Cangallo, 559, Buenos Aires.

Cirurgia Ortopédica. Los Transplantes Tendinosos en el Tratamiento de la Parálisis Infantil. Por los Doctores Marcelino Herrera Vegas y José M. Jorge (Hijo). Price not stated.

CONI HERMANOS, IMPRENTA DE, 684, Perú, Buenos Aires.

Pioneumoquistes Hidáticos del Higado. Por el Dr. Marcelino Herrera Vegas y el Dr. José M. Jorge (Hijo). Price not stated.

Tratamiento del Espasmo Pilórico en la Primera Infancia. Por el Dr. Marcelino Herrera Vegas. Price not stated.

FISCHER, GUSTAV, Jena.

Lehrbuch der Augenheilkunde. Herausgegeben von Dr. Theodor Axenfeld. Zweite Auflage. Price, paper, M.14; bound, M.15.

Lehrbuch der Chirurgie. Herausgegeben von Prof. Wullstein und Prof. Wilms. Zweite umgearbeitete Auflage. Zweiter Band. Bauchdecken, Leber, Milz, Pankreas, Magen. Darm, Hernien, Harn- und Geschlechtsorgane und Becken. Price, paper, M.8; bound, M.9.

Vorlesungen über Infektion und Immunität. Von Dr. Paul Th. Müller. Dritte erweiterte und vermehrte Auflage. Price, paper, M.7; bound, M.8.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Elfte Lieferung. Band III. Physiologie der Energieproduktion, Physiologie der Form. Zweite Hälfte. (Das Handbuch erscheint in etwa 30 Lieferungen zum Preise von je 5 Mark.)

G. HIRTHS VERLAG, G.m.b.H., München.

Der elektrochemische Betrieb der Organismen und die Salzlösung als Elektrolyt und Elektrogenet. Eine Programmschrift für Naturforscher und Aerzte. Von Georg Hirth. Dritte vermehrte Auflage. (Drittes Tausend). Price not stated.

KARGER, S., Berlin.

Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Redaktion von O. Heubner, Th. Escherich, A. Czerny. 72. der dritten Folge 22 Band. Heft 6. Augsgeben am 10 Dezember, 1910. Price not stated.

MASSON ET CIE, Paris.

**Traité d'Histologie. Par A. Prenant, Professeur à la Faculté de Médecine de Paris, P. Bouin, Professeur à la Faculté de Médecine de Nancy, et L. Maillard, Professeur agrégé à la Faculté de Médecine de Paris. Tome II. Histologie et Anatomie Microscopique. Par A. Prenant et P. Bouin. Price Fr.50.**

Séparation Endo-Vesicale des Urines et Cathétérisme de l'Utère. Par M. Georges Luys. (Extrait de La Presse Médicale.) Price not stated.

Séparation Intra-Vésicale des Urines et Cathétérisme des Uretères. (Extrait de La Presse Médicale.) Price not stated.

PROGRÈS MÉDICAL, ADMINISTRATION DU, 41, Rue des Écoles, Paris.

Medicus. Guide-Annuaire des Étudiants et des Praticiens. Médecine, Chirurgie, Odontologie, Pharmacie. 38e Année 1910-1911. Price Fr.5. L'Agenda de Medicus, 1910-1911. (A separate diary; price not stated.)

SPRINGER, JULIUS, Berlin.

Allergie. Von Dr. Clemens Frh. von Pirquet, o.ö. Professor der Kinderheilkunde an der Universität Breslau. Price M.3.60.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Die Therapie an den Berliner Universitäts-Kliniken. Herausgegeben von Dr. Wilhelm Croner. Fünfte Auflage. Price M.12.

Fortschritte der Naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. E. Abderhalden, Berlin. Zweiter Band. Price, paper, M.12; bound, M.14.

VOGEL, F. C. W., Leipzig.

Die Störungen der Sprache. Versuch einer Pathologie der Sprache Von weil. Dr. Adolf Kussmaul, Professor in Strasburg. Vierte Auflage. Herausgegeben und mit Kommentar versehen von Professor Dr. Hermann Gutzmann, Leiter des Universitätsambulatoriums für Sprachstörungen zu Berlin. Price M. 10.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BATTERSBY, JOHN, M.B., Ch.B. Manch., L.D.S. Eng., has been appointed Honorary Dental Surgeon to the General Hospital, Nottingham.

CRABB, R. L., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

DOBBS, A. F., M.B., B.S. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Athlone District of the county of Westmeath.

DORRELL, E. ARTHUR, F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Royal Eye Hospital.

DOYLE, WILLIAM, M.B., C.M. Glasg., has been appointed Medical Officer to the Colne Town Council, Lancashire.

DWYER, H. DE B., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator of the Banbury District of the Banbury Union.

KEMP, E. W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Rotbury District of the county of Yorks, West Riding.

MCRAE, D. J., M.B., B.Ch. Edin., has been appointed Second House Surgeon at the Birmingham and Midland Eye Hospital.

MARTIN, J. BIRCH, M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon at the Birmingham and Midland Eye Hospital.

PHILLIPS, JAMES, F.R.C.S. Edin., has been appointed Honorary Surgeon to the Bradford Royal Infirmary.

ROBERT, J. X., M.B. Tor., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Surgical Officer at the Birmingham and Midland Eye Hospital.

WALKER, F. J., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Spilsby District of the county of Lincoln.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BRADFORD ROYAL INFIRMARY.—Honorary Assistant Surgeon.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, &c.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, residence, and washing.

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon. Salary £100 each per annum. Also One Obstetric and Ophthalmic House Surgeon, and One Throat, Nose, and Ear House Surgeon. Salary £75 each per annum. Also Casualty Officer for six months. Salary £50 per annum. Apartments, board, and laundry are provided. Also Honorary Dental Anæsthetist. Also Honorary Medical Registrar.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CAPETOWN, SOUTH AFRICAN COLLEGE, South Africa.—Two Professors of Human Anatomy and Physiology. Salary at rate of £500 per annum.

CHELTENHAM GENERAL HOSPITAL, BRANCH DISPENSARY.—Resident Surgeon. Salary £180 per annum, with rooms, coal, and gas.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, lodging, and washing.

CLINICAL RESEARCH ASSOCIATION.—Assistant Director. Salary £250 per annum.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence.

DUDLEY DISPENSARY.—Resident Medical Officer. Salary £180 per annum, house, &c.

EARLSWOOD ASYLUM, Redhill.—Junior Assistant Medical Officer, unmarried. Salary £130, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Salary at rate of £75 per annum, with board, residence, laundry, &c.

EAST SUSSEX COUNTY COUNCIL.—Assistant School Medical Officer. Salary £250 per annum.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator. Salary £110 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Surgeon. Also Additional Honorary Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £30, with board and residence. Also Fourth Anæsthetist. Salary £15 15s. per annum.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging.

LEWES DISPENSARY AND INFIRMARY AND VICTORIA HOSPITAL.—Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, &c.

LINCOLN CITY EDUCATION COMMITTEE.—Assistant School Medical Officer and Assistant Medical Officer of Health. Salary £250 per annum.

LONDON HOSPITAL, WHITECHAPEL, E.—Medical Registrarship. Salary £100 per annum.

MANCHESTER ROYAL INFIRMARY.—Assistant Director in the Clinical Laboratory. Salary £75 per annum.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary £120 per annum, with board and residence.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with apartments, board, washing, &c.

OLDHAM UNION WORKHOUSE.—Resident Medical Officer. Salary £130 per annum, with apartments, washing, and attendance.

QUEEN ALEXANDRA SANATORIUM, Davos.—Junior Pathologist and Bacteriologist.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Clinical Assistant.

ST. JOHN'S WOOD AND PORTLAND TOWN DISPENSARY, 96, St. John's Wood-terrace, N.W.—Third Medical Officer. Salary, midwifery and vaccination fees and a third proportionate share of an honorarium of £150.

SHEFFIELD, CITY EDUCATION COMMITTEE.—Dental Surgeon for Elementary Schools. Salary £250 per annum.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.—Clinical Assistants.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Creech St. Michael, in the county of Somerset.

# Births, Marriages, and Deaths.

## BIRTHS.

BARNES.—On Dec. 28th, 1910, at New-road, Chatham, the wife of Harold Abbott Barnes, M.B., B.A. Oxon., of a son.

DONALD.—On Dec. 27th, 1910, at Liskeard, Cornwall, the wife of John Donald, M.D., of a son.

HULBERT.—On Jan 3rd, at Muttra, U.P., India, the wife of Major J. G. Hulbert, I.M.S., of a son.

PEDLEY.—On Jan. 6th, at "Maples," Orpington, the wife of S. E. Pedley, M.R.C.S., L.R.C.P., L.D.S., of a daughter.

SALL.—On Jan. 4th, at Mount Zeehan, Canterbury, the wife of E. F. Sall, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

UPWARD.—On Jan. 3rd, at Edfu, Romford, the wife of Harold Upward, M.B., of a daughter.

## DEATHS.

APPS.—On Dec. 26th, 1910, at Nablus, Palestine, Harriett Amelia Rachel Apps, M.B., B.S., of the C.M.S. Hospital, aged 30 years.

BRICKWELL.—On Jan. 10th, at Chigwell, Essex, Henry Taylor Brickwell, M.R.C.S., L.S.A., aged 64 years.

CORNISH.—On Jan. 10th, 1911, Edward Cornish, M.R.C.S. Eng., L.R.C.P. Lond., of sarcoma, at Bayswater, aged 47. R.I.P.

DAVIES.—On Jan. 9th, at Nutcombe, Sketty, Glamorganshire, Ebenezer Davies, M.R.C.S., aged 81 years.

PITCAIRN-BOOKLESS.—On Jan. 4th, at Ormiston, Eastbourne, James Pitcairn-Bookless, M.D. Edin., in his 66th year.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE RUBAIYAT OF SMITH TERTIUS.

UNDER this heading the *Manchester Daily Sketch* published at Christmas time some very clever verses, the concluding stanzas of which we quote. The earlier part of the ballad states how Smith Tertius speculates on the risks attending Christmas cheer, of which he has haunting memories, but decides that—

..... The Doctor, not the Saint, shall be his guide
And teach him mix his merriment with sense.

This resolution is strengthened by the appearance of an annotation in THE LANCET on the hygienic merits of the usual Christmas menu, and Smith Tertius sings:—

Then lo! *The Lancet*, hot from off the Press,
Acquits his Christmas cheer of harmfulness:
Both Bird and Pudding are innocuous
Unless they be indulged in to Excess.

Is this some new thing in the way of Traps
Placed by a set of foxy doctor-chaps
To lure unwary ones within their reach?
He ponders long and hesitates. Perhaps.

Would it conduce to less internal Strife
If I decide to lead the Simple Life,
And sparingly upon digestive bread
I spread my Nutter with blood-guiltless Knife?

Perhaps. But then just think what arrogance it
Would be to doubt the dicta of *The Lancet*;
And so, whatever Eustace Miles may say,
To-morrow, anyhow, I mean to chance it.

## ENCEINTE.

*To the Editor of* THE LANCET.

SIR,—With reference to your note in THE LANCET of Dec. 31st, 1910, p. 1947, on the etymology of the word *enceinte* as applied to pregnancy, I have come across the following definition and quotation in Cassell's Encyclopædic Dictionary—viz., Cloister (O. Fr. *cloistre*; Fr. *cloître*, from Lat. *claustrum* = (1) an enclosure; (2) a cloister). The figurative meaning is given as "Any place in which one is shut up, specially the womb." The quotation is: "As he brak not Maries *cloister* whanne that she was maad with childe.—*Wycliffe*: Select Works, i., 318." This is quoted, I suppose, from the manuscripts of the renowned John Wycliffe (1324-1384), a catalogue of which, I learn, was printed at the Clarendon Press in 1865 by the Rev. W. W. Shirley, ecclesiastical historian. The use of the word "cloister" so long ago and the definition that *cloître* is "*enceinte (des maisons des chanoines)*" (Boiste) are significant facts, so that the French expression, "*Elle est enceinte*," could be translated into English to-day, if we had retained and shortened the old expression used by Wycliffe, as "She is cloistered." I think it is plain from this quotation that the womb was then regarded as an *enclosure*—that is, as an *enceinte* or *clôture*.

I am, Sir, yours faithfully,

London, Jan. 6th, 1911. BLANCUS.

## A MEDICAL JOURNAL IN ESPERANTO.

*Internacia Medicino* (Kötzschenbroda-Dresden, H. F. A. Thalwitzer, pp. 32, price 6s. annually) is the title of a medical journal published monthly as the official organ of the Tutmonda Esperanta Kuracista Asocio, which signifies the International Esperanto Physicians' Association. It is edited by Professor H. Dor of Lyons, with the assistance of 21 collaborators in various countries, and contains, besides four pages of official information concerning the aforesaid society, articles on a New Mode of Dressing Wounds, by Dr. v. Oettingen, of Wilmersdorf; an address delivered by *Privat-docent* Kabanov, of Moscow, at the memorial meeting for Professor Ostroumov, on the Biologic Method of Clinical Examination of the Sick; Visible Speech for Deaf-mutes, by Dr. Spillmann, of the U.S. Bureau of Agriculture; the Dental Clinic and Dental Surgeon, by Dr. Klein, director of the Dental Clinic at Ulm; Ehrlich-Hata "606"; Obituaries of Ernst v. Leyden and Henri Dunant; and some pages of abstracts from current medical literature. It does not seem difficult for one with the necessary medical knowledge and a very moderate linguistic smattering to gather the sense of whole paragraphs at first glance. As the journal is sent gratis to the members of the above-named society, which we are told numbered in its second year, at the beginning of 1910, upwards of 600 physicians of various nationalities, literally "from China to Peru," it is obvious that the new language must be not only maintaining its ground, but making progress. The writers do not seem to fear to undertake translation into it of highly technical matters, and if they are understandable without danger of misapprehension by Esperanto readers, it is certainly a testimony in favour of the language.

## MOUNTAIN SICKNESS ON A TRANS-ANDINE RAILWAY.

AN article published in the *Engineer* of Dec. 23rd, 1910, gives a variety of particulars relative to a railway which is now in course of construction from Arica on the Pacific Coast of Chile across the main range of the Andes to La Paz, the capital of Bolivia. The line will have a total length of 260 miles and the highest portion of it will have an altitude of 14,000 feet. There are already two trans-continental railways in South America and it has been found that Europeans as a general rule are so injuriously affected by the diminution of atmospheric pressure at such an altitude that in all probability they would not be able to do at it one-half of the work of which they would be capable on the coast. Experience has shown that the output per man, even at altitudes of only 6000 feet or 9000 feet, has been reduced by fully 20 per cent. A large proportion of foreigners who make their way to these high altitudes never completely overcome the disease of *siroche*, or mountain sickness, and a few suffer so much that they are compelled to return to the lower levels almost at once. In addition to *siroche* extraordinary fluctuations of temperature will have to be encountered, for it is asserted that at one point on the line—namely, the head-quarters at Mauri River—the temperature may pass from − 27° C. to + 24° C. (a difference of 90° F.) in 24 hours.

## THE FOUNDER OF "THE LANCET."

*To the Editor of* THE LANCET.

SIR,—IN THE LANCET of Dec. 17th, 1910, page 1809, there is a reference to the founder of THE LANCET extracted from "Memoirs of Life and Work" by Dr. Charles J. B. Williams, F.R.S. The personality of Thomas Wakley struck so many persons that allusions to him abound not only in biographies where he is mentioned by name, but in essays and novels where he is alluded to as "the Crowner." A passage in "Friends of Bohemia," by E. M. Whitty, runs as follows:—

"There's Mr. Crowner, a veritable London man, as well known and as much a part of the metropolis as Temple Bar, a famous man in London, and outside London unknown. For we have our parish heroes, just as little Peddlington has. Crowner has lately got up a Commission of Chemists, and has proved that all our tradesmen adulterate all their goods. That ought to suggest a revolution, ought it not? But it hasn't made much sensation; and Crowner hasn't been assaulted or poisoned. The fact is, we expect to be swindled in England."

The suggestion that Thomas Wakley was unknown outside London is quite wrong, as the journalism of the day shows.

Edward Michael Whitty, who wrote the novel from which this passage is taken, was a well-known journalist who lived in the first half of the nineteenth century and at one time was employed as a Parliamentary summary writer on the *Times*. He was also on the staff of the *Leader*, where his sketches of proceedings in Parliament, which were marked by great vigour and a considerable power of sarcasm, were probably the forerunners of the Parliamentary sketch to-day so familiar to us all. Some of his newspaper articles have been collected and published, with additions, in book form under the title of "The Governing Classes of Great Britain: Political Portraits," and the phrase "governing classes," though used by Carlyle in Cromwell's Letters and Speeches, has been identified with Whitty's book. "Friends of Bohemia, or Phases of London Life" owed its birth to a quarrel between Whitty and his old friends on the *Leader*, whom, I learn from the "National Dictionary of Biography," he here ridicules in pungent style. The day has gone by when the points of the satire can be recognised, and the whole humour of the book has altogether evaporated. In its time it had a vogue, while it represents, I have heard, extraordinary literary dexterity on the part of its author, for he is said to have written it in a fortnight.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 2nd, 1911. BOOKWORM.

## DIRT AND DISEASE AMONG SAVAGES.

THE homely scrubbing housewife, so much despised in certain quarters to-day, has, when we seriously consider her place in civilisation, played an immense prophylactic part during the ages. To her pail, broom, clouts, and soap is greatly owing the fact that dirt diseases do not become endemic, especially in the poorer quarters of towns. Disease, indeed, may be said to increase in direct proportion to the neglect of rubbing and scrubbing. This becomes particularly apparent when we consider savages, among whom housewifery is either rudimentary or unknown. Thus, according to Captain Schmitter of the Medical Corps of the United States Army, who has recently published a report in the Smithsonian Miscellaneous Collections, the Indians of the Upper Yukon have, since the arrival of the white man on his way to the goldfields, undergone a great and evil change in the matter of personal hygiene. In the past, according to George Maltock who visited Alaska in 1885, "small-pox and diphtheria struck them in epidemics, but they either died or soon recovered." Their wandering life led them constantly to abandon infected localities as well, it must be confessed, as sick members of their tribes. Now, with the advent of the white man, the Indians are no longer nomadic, and the conditions prevalent have become appalling. Says our authority "The Indians never wash more than their face and hands, and ar

consequently exceedingly filthy. Pediculosis and tuberculosis are ever-present indications of their unclean habits." The mediæval town, the slums of which were crowded with windowless hovels, may be said to have originated, or at least intensified, tuberculosis in Europe. The cabins of these Indians of the Upper Yukon suggest the Middle Ages. They are "as offensive as their (the owners') persons. They have no methods of sanitation. Tuberculosis far outweighs all other ailments. On entering the village one notices everywhere evidence of tuberculosis in the forms of humpbacks, hip-disease, scrofula, consumptive cough. Very few natives can be given a complete physical examination without disclosing some evidence of tuberculosis. Tonsillitis, respiratory disease, digestive troubles, and myalgia are ever present. Diphtheria, according to hearsay, kills off many in occasional epidemics." Yet these savages crowd to the hospital and are devoted amateurs of the out-patient department. They are bad patients, for they object to physical examination, though fond of medicine. In this they do not differ from their Western congeners. The medicine-man, who is also a magician, is their mainstay. He sings to drive away disease. It is suggested that a Government Commission should be appointed to teach them the simpler rules of hygiene, but savage custom dies hard, and these Indians are a doomed race.

## ALLEGED FORGERY BY A MEDICAL MAN.

Arthur Harrison, aged 47 years, once a medical student and described as a physician and surgeon, of Trinity-square, Borough, has been charged with uttering a cheque forged in the name of Dr. I. Burney Yeo. The prisoner made an explanation in which he referred to a letter received by him from Dr. Burney Yeo, from which he conceived and put in practice the idea of obtaining a cheque-book and forging cheques on Dr. Yeo's account. The truth of this matter is that Dr. Yeo, in response to a letter from the prisoner, who claimed to be an old King's College Hospital man, then in St. Bartholomew's Hospital as a patient partially paralysed, and asking for a subscription to a translation of Mosso's "La Paura," sent him a cheque for £1 as a subscription for four copies, and received a letter of profuse thanks also from the hospital. The prisoner admitted forging the cheque and also five others. Two cheques respectively for £60 and £10, both purporting to be signed by Dr. Yeo, were found on him when he was arrested. There were previous convictions against him and he was found guilty at the Central Criminal Court.

## BOVRIL PICTURES.

WE have received from Bovril, Limited, a framed artist's proof of their latest bonus picture, entitled "Blind Man's Buff," by Mr. Arthur J. Elsley, which is an excellent reproduction of an original oil painting exhibited in the Royal Academy in 1910. The full size of the gravure is 24×20 inches and of the paper 37×32 inches. We have also received two other reproductions of pictures (unframed) entitled "Tales of the Deep," by Mr. Joseph Clark (exhibited in the Royal Academy, 1910), and "Babes in the Wood," by Mr. Fred Morgan. Messrs. C. W. Faulkner and Co., Limited, London, are to be congratulated upon the excellence of the reproductions.

## POSOLOGICAL HINTS.

THE Fellows Company of New York, the proprietors of Fellows' compound syrup of hypophosphites, has issued a very useful compilation under the title of "Some Posological Hints and other Useful Information." The pamphlet opens with a section on the absorption and elimination of various drugs used in everyday practice, followed by a table of incompatibles. Next is given a broad classification of drugs (diuretics, cathartics, anthelmintics, and so forth), and finally a trustworthy table giving the overdose symptoms of drugs. Space is found also for recording the names of the authorities from whom the printed statements are taken.

## THE "PHILIPSON" SANATORIUM FOR CHILDREN.

THE medical report, by Dr. T. M. Allison, of this institution, situated at Stannington, Northumberland, shows that the health of the children generally has been good during the year ending Oct. 31st, 1910. Much attention is paid to defective teeth. Through the generosity of Sir W. H. Stephenson, Lord Mayor of Newcastle, a new wing for cases of localised tuberculosis is being built. Much care has been devoted to consumptive cases, with, on the whole, gratifying results.

*R.G.*—Certainly not; the spirit of the regulations is opposed to it.

*Lex.*—We cannot trace any legal decision bearing on the matter.

*G. S. F. W.*—The condition is unknown to medical science.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
April (Berlin).—German Surgical Congress. (Thirty-ninth Annual Meeting.)
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
April 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
" (Los Angeles, Cal.).—American Medical Association.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August 15th–21st (Dublin).—Royal Institute of Public Health.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
" (Genoa).—International Exhibition of Marine Hygiene.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
" 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 18th–24th (Turin).—Fourth National Congress of Hygiene.
" 24th–30th (Rome).—International Congress on Tuberculosis.
" 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Montreal).—Canadian Medical Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—

Spring (London).—Second Optical Convention.
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—

(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—

(Vienna).—Third International Congress for Professional Diseases.

In 1915:—

(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

THE following journals, magazines, &c., have been received:—*Journal of Inebriety, Guy's Hospital Gazette, National Health, Medical and Surgical Papers of the Massachusetts General Hospital (October, 1910), Rivista Ospedaliera, Official Gazette of the United States Patent Office, Auckland Weekly News, Pioneer Mail, Finchley Press, Bulletin de la Société Royale des Sciences Médicales et Naturelles de Bruxelles, Medical Bulletin of the University of Pennsylvania, St. George's Hospital Review, St. Bartholomew's Hospital Journal, Canadian Journal of Medicine, Journal of the Royal Institute of Public Health, Maryland Medical Journal, Berliner Klinische Wochenschrift, Clinical Journal, Gazette Hebdomadaire des Sciences Médicales, La Belgique Médicale, Times of India, Army and Navy Gazette, Broad Arrow.*

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Jan. 11th, 1911.

| Date. | | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|
| Jan. | 5 | 30·09 | N.E. | 0·03 | 42 | 41 | 37 | 37 | 37 | Overcast |
| " | 6 | 29 85 | S.W. | 0·01 | 46 | 44 | 37 | 39 | 40 | Cloudy |
| " | 7 | 30·17 | N.W. | 0·25 | 49 | 45 | 35 | 35 | 35 | Fine |
| " | 8 | 30·36 | S.W. | 0·02 | 52 | 50 | 35 | 42 | 45 | Overcast |
| " | 9 | 30·28 | S.W. | 0·13 | 52 | 52 | 45 | 49 | 49 | Raining |
| " | 10 | 30·53 | N.W. | 0·14 | 57 | 45 | 38 | 37 | 39 | Fine |
| " | 11 | 30·93 | S.W. | ... | 46 | 45 | 39 | 41 | 43 | Raining |

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Dr. Clive Riviere: The Rôle of Auto-inoculation in Medicine: a Plea for its Rational Extension.

Dr. A. P. Beddard: Some Points in the Treatment of Pneumonia.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham): at 8.30 P.M.

Dr. J. P. Candler: The Incidence of Gallstones and of Primary Carcinoma of the Gall Bladder and Biliary Passages in the Insane.

Mr. H. Seidelin: Demonstration of Certain Protozoan-like Bodies in the Blood Organs of Yellow Fever Cases.

Dr. H. R. Dean: Studies in Complement-fixation with the Typhoid and Paratyphoid Group.

Dr. W. J. Penfold: Variability in the Gas-producing Power of Intestinal Bacteria.

Mr. S. G. Shattock: Microscopic Structure of Uric Acid Calculi.

WEDNESDAY.

SURGICAL SECTION (Hon. Secretaries—Jonathan Hutchinson, L. A. Dunn): at 5.30 P.M.

*Adjourned Debate:*

On the Operative Treatment of Cancer of the Rectum. The following gentlemen will take part:—Mr. A. Boyce Barrow, Mr. F. C. Wallis, Mr. P. Furnivall, and Mr. Lockhart Mummery.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira), at 11, Chandos-street, W.: at 5 P.M.

Exhibition of Cases.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris): at 8.30 P.M.

Dr. F. E. Batten: The Progressive Spinal Muscular Atrophies of Infants and Young Children (Illustrated on the epidiascope by photographs and microscopical sections).

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—H. J. Marriage, Sydney Scott), at 11, Chandos-street, W.: at 5 P.M.

*Cases and Specimens*

Will be shown by Dr. W. Milligan, Mr. Arthur Cheatle and Mr. G. J. Jenkins, Dr. G. C. Cathcart, and Mr. Chichele Nourse.

*Paper:*

Mr. C. Ernest West: The Bacteriology of Chronic Post-nasal Catarrh: a Preliminary Study of Fifty Cases.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

Mr. J. Hall-Edwards: The Treatment of Cancer by X Rays and Radium (followed by a Discussion to be opened by Dr. Frank Fowler).

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ROYAL METEOROLOGICAL SOCIETY, Institution of Civil Engineers, Great George-street, Westminster, S.W.

WEDNESDAY.—7.30 P.M., Ordinary Meeting. 7.45 P.M., Annual General Meeting. Report of the Council for 1910. Election of the Council for 1911. Mr. H. Mellish (President): The Present Position of British Climatology.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Prof. J. A. Thomson (President): Annual Address.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Adjourned Discussion on Sir Rubert Boyce's paper on Yellow Fever in West Africa.

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## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. T. C. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. Thompson: Anæsthesia as an Aid in Diagnosis

TUESDAY.—4 P.M., Dr. G. N. Pitt: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw (Liverpool): Modern Methods of Treatment of Tuberculosis.

WEDNESDAY.—4 P.M., Mr. T. P. Legg: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. McNab: Myopia.

THURSDAY.—4 P.M., Mr. A. Carless: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. J. Clarke: Treatment of Certain Common Fractures.

FRIDAY.—4 P.M., Mr. R. E. Bickerton: Clinique (Eye).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Drainage in Abdominal Surgery.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Throat and Ear Diseases (Clinical Lecture I.).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine (Lecture I.).

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Davis: Throat and Ear Diseases (Clinical Lecture II.).

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture: Mr. Turner: Operative Wounds and Injuries.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. Lister: Bronchial Affections in Children.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. E. Gillespie: Talipes and its Treatment.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY AND FRIDAY.—3.30 P.M., Clinical Demonstration:—Dr. J. Taylor.

**HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Genu Valgum; Genu Varum; Curved Tibiæ; Flat-Foot. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Lecture:—Dr. Thursfield: Purpura.

FRIDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Congenital Talipes. (Special Post-Graduate Course.)

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.**

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Acne Vulgaris in its Three Stages—I., Comedo; II., Indurata; III., Necrotica.

**ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.**

TUESDAY.—3 P.M., Prof. F. W. Mott: Heredity. (Lecture I.).

FRIDAY.—9 P.M., Prof. Sir James Dewar: Chemical and Physical Change at Low Temperatures.

**ANCOATS HOSPITAL, Manchester.**

THURSDAY.—4.15 P.M., Dr. E. B. Leech: Visceroptosis. (Post-Graduate Clinic.)

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## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (16th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY (18th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY (19th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY (20th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY (21st).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

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# A Lecture
ON
# SOME POINTS IN THE DIAGNOSIS OF ORBITAL DISEASE.

*Delivered at the London School of Ophthalmic Surgery on Oct. 21st, 1910,*

BY J. STROUD HOSFORD, F.R.C.S. EDIN.,
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LADIES AND GENTLEMEN,—He who would accurately interpret the phenomena of disease or become an expounder of Nature's secrets must have something more in him than the mere capacity for taking pains; he should have something more than the mere clinical instinct; he should have an accurate memory of his past cases, combined with an intimate knowledge of the structure and functions of the parts concerned. In studying orbital disease from the clinical standpoint you will find that an intimate knowledge of the anatomy of the orbit and its adjacent structures is essential, whilst a groundwork of the embryology and ethnology of the face and skull will greatly aid you in a certain class of cases. But important as it is to cultivate these knowledges, yet it is just as important to cultivate what I call the clinical faculty, by which I mean the mental note-taking and continual mental comparison of one case with another of the same class. Written notes are of the greatest value, but for a diagnostician mental notes are more so, because they are ready to hand on the spot. The diagnosis of deeply seated orbital disease is often so very difficult that no knowledge of a set of symptoms is sufficient for the purpose, and you will find mental notes of similar cases you have seen and treated before of far more value to you than all the books you may read upon the subject.

Throughout the universe I apprehend that life is nowhere exactly the same; no sarcoma is exactly similar to its fellow in the same class; and so it is necessary for us to remember that we ought not to expect pathological processes in Nature to present the same picture, although they be similar and due to identical causes. Just as we know that the human race is continually altering, so we know that the presentation of disease to us is also. There is but little doubt that the severest forms of syphilis, as seen in the clinical departments to-day, are yet not the same, either in their severity or their sites of attack, as they were, say one hundred years ago. From the perusal of the writings of the surgeons of earlier years of the nineteenth century upon orbital cases, one is disposed to think that syphilitic swellings were vastly commoner then than they are now, for from one's own observations syphilitic caries and necrosis of the orbit is exceedingly rare, if we exclude the margin. Even the great Mackenzie, whose unrivalled experience was obtained when syphilis was rampant in Europe and notoriously badly treated—even he admits of only having seen one undoubted case of necrosis of the orbit from specific disease. Nowadays the sites for it are the neighbourhood of the lacrymal bone and the rim of the orbit, and even here I have never seen an exfoliation, but only gummatous thickening with a suppurating focus and perhaps bare bone. So that we may say that it is quite rare for the orbit to be attacked by syphilis in the form of gumma or necrosis, especially if we compare it with the cranium and its contents and the sphenoidal cavernous sinuses, where gummata are not very rare. It is, however, quite probable that all the hyperostoses of progressive nature and certain of the exostoses have been syphilitic in origin, for they are undoubtedly affected by large doses of iodide, sarsaparilla, and by mercurial inunction.

## DIAGNOSIS.

For diagnosis methodical examination of your patient is very important, and in examining the orbit and head in general do not forget the habits of body and general constitution of your patient. In examining the orbit itself, when you have chronic cases of progressive proptosis to deal with and there is not much trouble with the lids, the following observations should be carefully made. The symmetry or asymmetry of the two sides of the face and orbits Quite a number of patients have not only a slight difference in level of the two orbits, but the eyes on the two sides are not the same distance from the mid-nasal line, and one may be more sunken in the orbit than the other. These points are important in measuring your patient for spectacles. The state of the skin and feel of the lids and rim of the orbit should be noted; the interpupillary distance, the mobility and proptosis of the eyeball; the site of headache, pain, and tenderness; is there pain if the eyeball is pressed very slowly and gently backwards? is there fluctuation? the state of the inner canthus and caruncle and lacrymal apparatus; and, lastly, do not forget to tap with your finger in the neighbourhood of the orbit, as you may elicit a valuable symptom thereby. In all chronic and very obscure cases it would be wise to get the opinion of the nasal surgeon upon the nose and accessory sinuses and antri, but you should systematically look yourself for pus beneath the middle or superior turbinated bones. If there is any there is almost certainly ethmoidal disease; if there is none it does not exclude it.

Now a line drawn vertically through the orbit, dividing it into an inner and outer half, will place two-thirds of orbital disease upon the inner side and one-third upon the outer, and disease is far commoner of the left than of the right orbit. But pus which has slowly more or less invaded the orbit from one side and become chronic and encapsuled may present itself as a tumour on the extreme opposite side, and leave the site from which it sprang, to all appearances, quite natural. I recently had a beautiful example of this in the wards of this hospital. The patient was a woman, who came to the hospital with a circumscribed, fixed, firm, smooth, painless swelling at the upper and outer margin of the right orbit, about as large as a walnut, apparently attached to the bone. The whole of the orbital contents were elsewhere normal. I dissected it out, and just as I had nearly finished I found it to be a collection of pus in a densely thickened capsule connected by a long, but very narrow, sinus-like tract, with the frontal sinus which was distended with pus and greatly diseased. The patient did well. In quite a number of these frontal sinus cases the first sign is a tumour presenting at the upper and inner angle of the orbit, or even bulging the whole of the inner wall. A larger percentage of disease and swellings of the inner half of the orbit is due to acute or chronic collections in the ethmoid, frontal, and sphenoidal sinuses, and to caries and necrosis of the lamina papyracea. A sarcoma or exostosis occurring within these is comparatively rare, but I here show you the photographs of another patient with enormous broadening of the face from a sarcoma in that region upon whom I operated in the hospital six weeks ago. The interpupillary distance was 75 mm., and yet mobility of the eyes was excellent and diplopia only present in the later stages of the malady, but each fundus showed papillitis.[1]

But these ethmoidal and sphenoidal diseases do not always present themselves to us as cases of orbital disease *per se*, such as cellulitis, abscess, necrosis, caries, tumour, &c. They quite as frequently cause more concealed trouble, and insidious trouble because it is concealed. For instance, there is one sphenoidal cell that is larger than the rest, and it is in direct contact with the optic nerve, since it forms part of the wall of the canal through which it runs. Some collections in the ethmoido-sphenoid suppuration expand this and press upon the canal and cause retro-bulbar nerve trouble, which ends in optic atrophy. It is my desire to try to diagnose this form of acute or chronic retro-bulbar neuritis early, as the patient may be saved from certain blindness thereby.

Now of recent years quite a number of observations have been taken upon the blind spot of Marriotte, and I here show you a roughly made board I had made three years ago upon which fairly accurate measurements of the normal and the diseased blind spot can be obtained. The blind spot can be measured in various diseases of the optic nerve, and always gives very reliable information as to the expansion of the nerve or its head. You will find that the diagram is generally vertically oval, slightly at first, and more so the longer the duration of the disease; and then if a central scotoma should form, as is not uncommon, the two blind spots are sometimes bridged across by a kind of dumb-bell connexion. Later still, a large universal scotoma may

[1] The patient has now (Jan. 16th, 1911) an interpupillary distance of 88 mm. and much broadening of the face and head.

precede total blindness unless something is done to relieve the patient. One more instance of the disastrous effects of chronic purulent conditions of the sinus and teeth and toxic absorption from them may be mentioned in the serous choroiditis, serous cyclitis, and sometimes chronic retro-bulbar atrophy which result from long-standing neglected diseases in these situations. Hardly a week passes in this hospital but that we could see one or other of the above diseases caused by oral sepsis or nasal and sinus disease.

More than half of the cases of orbital cellulitis arise from disease spreading from the inner wall of the orbit, which in the living subject is as thin as notepaper.

### ORBITAL CELLULITIS.

Let us consider, then, acute orbital cellular inflammation. The patient has general symptoms of malaise and fever, with drowsiness and marked irritability of temper in adults, which needs to be taken into account in treating the patient. There is acute, throbbing pain, tenderness, much swelling of the lids, with brawny œdema in some cases and marked engorgement of the veins in others, which may pass beyond the region of the lids to the forehead, temple, or cheek. The lids are generally separated by chemosed tissue, if severe, although the ptosis and capacity for great stretching of the upper lid covers the cornea. The proptosis is not merely of the eyeball, but in most cases of all the orbital contents, and is generally downwards, outwards, and forwards, because the commonest cause is trouble at the upper and inner angle of the orbit. It is displaced up and in, in maxillary inflammation. The chemosis is clear and gelatinous, there is no discharge, but the edges of the lids may be a little gummy. The eyeball, as a whole, is normal, the cornea clear and bright, the pupil natural and reacting to light; but mobility of the eye may be entirely abolished, and is always limited. The fundus is normal in the early stages, and for a long while, except in pyæmic and metastatic cases, when papillitis is common. If tension is not soon relieved by nature or by art the eyeball may be strangulated and mortify or be perforated, which is exceedingly rare, and then the parts shrink up or the septic process may spread backwards and start a fatal meningitis or septic sinus thrombosis; but it generally subsides under appropriate care and leaves a useful eye, with perhaps a little ectropion or entropion, if the eyeball is not affected. I have never seen a permanently paralysed muscle follow an orbital cellulitis, except ptosis, but optic atrophy frequently supervenes some months later. An abscess of the orbit points through the upper lid.

Orbital cellulitis should be early and freely treated by incisions, and careful search should be made for the pus, which is generally to the inner side of the median line and above; but be careful of injury to the levator palpebræ and causing permanent ptosis; be careful of injuring your pulley or its muscle; be careful of injury to your ciliary ganglion or optic nerve—nature hardly ever injures it, it is the surgeon; and lastly, be careful not to injure the veins, thus setting up septic phlebitis. It is safer, unless pus is actually pointing, to make your exploratory incision from the outer side.

Inflammation of the cellular tissue of the orbit may be due to blood states and metastatic inflammation. It is commonest in children and the aged, but it is far more usually due, at all ages, to trauma and spreading inflammation from contiguous cavities, especially the nasal and accessory sinuses of the skull, the antrum of Highmore from disease of the bones *per se*, from oral sepsis, especially Riggs's disease, or due to erysipelas or to carbuncle.

With regard to trauma it is surprising how trivial an injury will sometimes start a virulent orbital cellulitis; the opening of a Meibomian cyst has caused it, and it has frequently followed excision of the eyeball when there has been a conjunctival discharge, or panophthalmitis, at the time of the excision, which has terminated fatally.

It has been my experience to find that patients with orbital disease give histories of their trouble which can generally be relied upon. In other diseases of the body patients are not always to be believed; but I would suggest to you that in no other region of the body will you find the history of more aid to you than it will be in diagnosing orbital disease, and in doing so I would say that in my experience it is safe to rely on one's patient for an accurate account of the events and their sequence. They are far more reliable in giving details about orbital disease than they are in those of maladies of the eyeball. In spreading inflammations in particular the patient has given very definite and valuable localising aid in all the cases I have notes of. He has aided me in forming a conclusion as to where the process started and as to its mode of spread in all of my cases but one. Let me give you two instances of orbital cellulitis spreading from ethmoidal sinus disease. They had both been long under the nasal surgeons. In one the man stated definitely that he had felt something go on to the inner side of the eyeball whilst blowing his nose, and the eye got painful an hour later; and on making an incision on the fourth day I found the lamina papyracea eroded and a hole in it, and pus and mucoid secretion came away. In the other case there was the usual history of nasal trouble and aching at the root of the nose and between the eyes, but no history of the patient having felt anything give way. In this latter case there was pus in large quantity along the inner wall, but no bare bone or bone pain, and I believe the process was not due to direct extension by expansion, but probably along the perforating vessels. It is important to get your patient to try to find which way he can move his eyeball with the least pain. At first he will tell you that he cannot move it, especially as he cannot open it. Sometimes this is true, and then you lose a valuable aid to diagnosis. But more often, although intensely swollen and exquisitely tender, especially if you make him rotate the good eye well to one or other side, he will say that there is more pain when he moves it, or attempts to move it, in a certain direction. The direction of the pain is generally the direction of the lesion, and is not so valuable when the trouble is deeply seated about the apex. The septic processes which spread from the antrum and perforate the orbital plate of the superior maxillary bone are less successfully treated than the nasal side cases because of the extensive necrosis and prolonged suppuration, the absence of the natural drainage to be got from ethmoidal cases, and from the great tendency to meningitis and sinus thrombosis. They want thorough and energetic treatment more than any other spreading inflammatory cases I know of. They may occur in quite young babies, for we had one in the hospital this summer. Here are a few notes of it:—

The patient was a female child, aged 6 weeks, who had been well for the first five weeks of life. The mother stated that six days before bringing the child to the hospital there was a discharge from the roof of the mouth, the left nostril, and the left upper alveolus. Two days later the left eye became swollen and prominent, and the child cried continually. The case was admitted to the hospital by the house surgeon, and when I saw the patient there was marked orbital cellulitis, swelling and œdema of the lid, and the eyeball was dislocated upwards and inwards. There was considerable chemosis, and apparently fluctuation of the lower and external part of the orbit. The pupil was dilated, but it reacted to light. The cornea, and apparently the fundus, were normal. The right eye was normal. The left ala nasi was pushed down and flattened by the orbital cellulitis and maxillary swelling. There was pus from the left nostril and from the left upper alveolus, of a greenish, thin nature. Under chloroform an incision was made at the outer portion of the protruding inner surface of the lower lid, and about an ounce of fœtid bone pus escaped. Dead bone could be felt downwards and backwards under the eyeball, showing the whole of the orbital surface of the superior maxillary bone to have been perforated and absorbed by pus which was probably from the antrum. Next day the swelling subsided considerably and the cornea was clear, but two days afterwards the swelling returned, and the right eyelid became very swollen and the eyeball considerably proptosed. Twelve hours later the patient showed all the signs of meningitis, which increased until she died two days later. In all the patient was in the hospital eight days. The post-mortem examination was made, and besides slight basal suppurative meningitis there was bilateral thrombosis of the cavernous sinus on either side, and the circular sinus and ophthalmic veins contained septic matter, the lateral sinus containing fluid and dark blood. The tissues in both orbits were infiltrated with pus.

The above is the youngest case on record of bilateral thrombosis of the cavernous sinuses, and, like all other cases of septic thrombosis of these sinuses on record, it terminated fatally, for, as far as I know, not a single patient in history with this disease has ever survived. The case is also o

paramount importance, since it shows how a trivial septic process in a baby's mouth may cause a serious and a fatal meningitis through the means of septic absorption from the oral cavity.

The orbital cellulitis sometimes set up by tuberculous bone disease is never a very tense one, nor does it cause the brawny swelling of the lids that is found in idiopathic and septic cases, whilst the eyeball is not fixed and can generally be moved by the patient, and there is far less pain and tenderness, and probably no febrile state. But not always, for I have notes of a case of a child who had quite high fever all the while—about four to six weeks—until the pus was evacuated and the necrosed bone removed, yet the orbital cellulitis was never very tense, the eyeball, although greatly proptosed and chemosed, could be moved; and there was no tenderness except on separation of the lids, whilst of course some patients get a temperature from merely nervous excitement.

### DIFFERENTIAL DIAGNOSIS.

Of the troubles that cause difficulty in diagnosing whether we have true orbital cellulitis at all, acute purulent conjunctivitis, acute thrombosis of the cavernous sinus, and acute lacrymo-adenitis, of these the second, cavernous sinus thrombosis, is most likely to cause great difficulty where there is no present, but only past, external ear disease. I have twice known the patient to be operated upon for orbital cellulitis when the cases have been those of sinus thrombosis. Here the diagnosis should not be difficult if we take a larger view of the patient and do not confine ourselves to the swollen orbital contents.

In the first place, sinus thrombosis is very sudden in onset, not very painful, if at all, in early stages; œdema of the forehead and over and about the mastoid is nearly always present, and in one of these cases tapping the mastoid elicited pain and tenderness. Secondly, the chemotic tissue protrudes between the lids more than usual, and the skin of the lids is soft and supple. Thirdly, since the veins are blocked, and the only possible means of draining the eyeball is through the communication of the angular with the facial and through the spheno-maxillary fissure with the tributaries of the internal maxillary, one expects to find some symptoms altering or abolishing vision, as well as ophthalmoscopic signs, if the upper lid can be sufficiently elevated. Engorgement of the retina and blindness should always be searched for in orbital cases. I have never known them in orbital cellulitis, except in the last stages, when fibrotic changes take place, but I have seen hæmorrhages and œdema of the retina in all my cases of cavernous sinus thrombosis and temporary reduction in vision, as well as permanent blindness in some of them. One case of non-septic thrombosis has always been vividly fixed upon my mind, and I will give you a short note of it.

The patient was an elderly gentleman, with malignant disease of the larynx, for which he was being treated by Sir Felix Semon. The patient suddenly had pain and swelling of the left orbital contents with great proptosis and chemosis, and only slight œdema of the lids, but by slowly and gently separating them the pupil, which was dilated, could be seen to react to light slightly. His vision was 6/36 and J. 14, with glasses. There were hæmorrhage and œdema of the retina. He had œdema over the mastoid and of the forehead on that side, very well marked. The diagnosis made by me was thrombosis of the cavernous sinus. In a few days' time the sight gradually came back, and on the eighth day was 6/9 and J. 1. Collateral circulation was sufficient to restore the retinal circulation, whilst the proptosis and swelling gradually abated. The patient died from the cancer of the larynx six weeks later. Non-septic monolateral cases of thrombosis of the cavernous sinus very frequently recover. I have notes of 14 cases, in all of which the patients got quite well.

The diagnosis of orbital cellulitis is often made in cases of blennorrhagia of the lacrymal sac and gonorrhœal conjunctivitis, but the history, the presence of a purulent discharge, combined with the absence of proptosis of the eyeball, should be sufficient for diagnostic purposes. The swelling and brawniness of the lids and the chemosis may be extreme, but you will on careful inspection find the eyeball sunken at the bottom of the chemosed tissue or normally placed—never displaced either forward or laterally or upwards, as it always is in orbital cellulitis. One notices, however, that in gonorrhœal ophthalmia of the severer types the eyeball is sometimes displaced a little down owing to the pus collections in the conjunctival folds above and to the thicker base of the upper lid. I have seen a child who was a mass of scrofulous disease of glands of the neck and several bones of the chest and the left scapula get dacryoadenitis, with intense swelling of the lids, which subsided in a week, leaving the gland chronically enlarged and palpable and riddled with pus. At first this case looked like one of cellular inflammation. I have seen acute œdema of the lids in children and young adults follow urticaria, and in both cases they had provisionally been diagnosed as orbital cellulitis. I have known retro- as well as intra-orbital hæmorrhage, with severe proptosis and chemosis, following blows, coughing, and scurvy-rickets, to be diagnosed as orbital cellulitis because of the proptosis, chemosis, and swelling. But the absence of inflammatory symptoms, of tumefaction of the lids, and of fever, with perhaps, but not always, the presence of effused blood into the lids or conjunctiva, ought to lead to a correct diagnosis; but here, as in all orbital disease, history is everything, for trauma, vascular hypertension as in coughing, or blood states, as in scurvy, would come to one's aid if necessary. Actinomycosis has once occurred in the orbit as a chronic abscess and caused difficulty; whilst in cases of anthrax, malignant pustule, and small-pox, although they may affect the orbit, yet I have never seen them. Not infrequently babies or children are brought to us with undoubted orbital cellulitis and no assignable cause can be discovered. You are aware that the sense of fluctuation in orbital disease is very deceptive, yet you make an incison and probe deeply, and in spite of your certainty of fluctuation you find no pus. You foment and purge and the inflammation passes off without a drop of pus ever showing itself. The same kind of cellulitis occasionally comes in adults who have been run down by an exhausting illness, such as influenza, and again no pus is found, and it gets well. The probability is that some of these cases originate from simple thrombosis of the ophthalmic veins with resulting œdema of all the orbital tissues. I exclude those cases where pus does not come at the time of the operation but follows next day or two, for these are cases where we have only failed to strike the pus and it has subsequently burst into the track of your incision. It is this class of cases in young children which is prone to follow that disease which every mother looks upon as nothing, and which is yet a scourge in the world in a variety of ways and undermines the vitality of the organism and is the starting point of so much infantile tuberculosis—I mean measles. If preventive medicine could do away with measles I believe it would prevent one-tenth of children's eye diseases.

Before I leave orbital cellulitis there is a condition which, although not actually orbital cellulitis, yet is so intimately related to it that when you see it for the first time you are sure to diagnose "orbital cellulitis"—and that is metastatic panophthalmitis. You are all acquainted with panophthalmitis which follows the ingress of virulent septic organisms by trauma, especially that form following cataract extraction in certain diabetic patients with perforating ulcers, for these diabetic patients have special proclivities and predispositions for sepsis. There is a certain amount of cellular inflammation, though not of all the orbital tissues as a rule. But when metastatic panophthalmitis arises you have no injury to help you, and at first you may be nonplussed.

Metastatic panophthalmitis was known to Tenon, Junker Himley, and others, who early recognised the danger of excision of the eyeball in these cases. They thought the condition one of milk metastasis, because it occurred so often in the puerperal state. Later, many cases were ascribed to other general pyæmic conditions, especially from bone disease, small-pox, cerebro-spinal meningitis, typhus and scarlet fevers. Roth and Herrnheisser have since very carefully studied the malady. The symptoms are much the same as those of traumatic panophthalmitis. It starts with pain, which is a continual throbbing, and the whole of the fifth nerve on that side aches. It is followed by rapid swelling, redness, and œdema of the lids, proptosis, chemosis, and exquisite tenderness of all the tissues, whilst the eyeball is fixed straight forward and cannot be moved. The diagnostic points are very important and are as follows. 1. The pupil loses its brilliant blackness and becomes dull grey or actually yellowish-green; there is a semi-dilated, immobile iris, with exudate on and in it, and a turbid aqueous

in a deep anterior chamber, because the septic process has spread from retino-choroiditis and irido-choroiditis to a general panophthalmitis. 2. The upper lid can generally be more easily manipulated. 3. Early and total loss of sight. 4. Glaucoma early supervenes with rupture sooner or later of the globe just outside the limbus with escape of purulent contents and subsequent shrinkage. Sometimes the course is more chronic and the case ends in phthisis bulbi without rupture. It may be bilateral, but it never causes sympathetic ophthalmia.

You will thus see that the eyeball, its position and condition, especially that of the media, will soon show you, with the history of the patient, that it is metastatic panophthalmitis with which you have to deal, and not orbital cellulitis *per se*. True it is that orbital cellulitis may cause by strangulation of its blood-supply complete mortification of the eyeball, but it is exceedingly rare, and I have never seen it. But it is a last result only and therefore does not come into our region of diagnosis.

Now the fat of the orbit varies somewhat, not only in form and consistency, but also in amount. In the outer and lower half of the orbit you will find it firm and compactly enclosed in compartments of fairly dense strands of connective tissue, whilst that surrounding the sheath of the optic nerve is looser, more finely fibrillated, and more oleaginous, and only becomes firmer and has thick fibrous strands in the intermuscular intervals. A knowledge of this is very important, as in cases of periosteal trouble, where cellulitis is quite secondary, and pus easily riddles and absorbs this thin fat; the pus is far back around the nerve, whilst in the upper and outer and lower portions of the orbit, where the fatty tissues are much more compact and firm, they are but slightly affected by the exudation of inflammatory products. You will remember that the eyeball rotates by a complicated mechanism in which Tenon's capsule plays quite a secondary part. The fatty tissues and muscular cone move as a whole at the same time that the eyeball moves in Tenon's capsule. Now a knowledge of this helps us in diagnosing the probable cause of orbital cellulitis in periostitis, panophthalmitis, and so-called idiopathic cases. For in periostitis the eye is generally well deviated to the opposite side of the lesion, and is capable of motion in a certain direction without much pain. But pain is very severe on even the gentlest pressure backward or to the side of the lesion, and when the typical boring pain of bone disease comes on at night the eye may be observed to rotate. In panophthalmitis the affection of Tenon's capsule causes the eye to be rigidly fixed in the median line and no motion of the eyeball is possible, owing to acute tenonitis and the general involvement of the whole of the orbital tissues. In idiopathic cellular inflammation, whilst there is not much, if any, mobility of the globe, the lids are uniformly and intensely congested, and no one part of the orbit is more markedly affected than elsewhere, as is often the case in periosteal disease, and the eyeball and Tenon's capsule are nearly natural.

### TUMOURS AND SWELLINGS OF THE ORBIT.

In considering diseases of the orbit it is well to remember that the actual cavity of the orbit, the eyeball of which normally occupies only one-fifth, may be either expanded, as it is in long-standing intra-orbital disease, or contracted by being encroached upon by tumours and swellings from without or within the skull. It is surprising how much pus it can contain in the living subject or how many years a foreign body may be lodged in it without causing trouble.

I show you here the photograph of a child (Fig. 1) who had a lympho-sarcoma of the left lacrymal gland which weighed 2¾ ounces and had greatly expanded the orbit on that side, although there was no infiltration of the orbit—for you will remember that there are no lymphatic vessels in the orbital tissues—except the lids and conjunctiva. Here is another, of a girl also, who had the capacity of the left orbit very greatly encroached upon by a large exostosis of the temporal bone, and the proptosis that is present is due to it; the eyeball is normal, the vision good, and mobility free, but there is diplopia in certain positions. When the orbit is invaded by malignant growths from the skull, especially those arising from the sella turcica in that region, they do not have time to expand the orbit, but cause rapid proptosis without much pain. Morax had a most valuable case in 1904 of sarcoma of the temporo-sphenoidal lobe in a man of 40 in which a process of the growth had penetrated through the temporo-sphenoidal fissure into the right orbit, and which, besides causing marked proptosis, homonymous hemianopsia, and a relative hemiopic pupillary inaction, with retained normal vision, had the peculiar sensations of perverted smell. The patient died six months later, and although the hemiopic pupillary signs remain permanent the necropsy showed that mere pressure on the optic tract was sufficient to cause the symptoms without there being evidence of structural alterations, as careful staining of the tract and visual centres revealed the parts to be normal.

Of the slowly growing swellings of the orbit we have chiefly chronic periostitis, abscesses, exostoses, gummata of the soft parts, and the cysts and new growths. Chronic circumscribed periosteal abscess, in my experience, takes place in three situations: either it is along the inner wall or at the apex, and then it is in persons under 35, and the patients are kept awake at night by pain and eye-ache; or it

FIG. 1.

Lympho-sarcoma of the lacrymal gland.

occurs in persons of about 40 years of age or older, and then is situated in the middle line of the orbital plate of the frontal bone, just behind the overlapping bony rim. Here it causes a characteristic tumefaction of the centre of the upper eyelid and eyebrow, perhaps is tender, but not often painful, and does not interfere with orbital structures or the ocular movements. When the extreme rim of the orbit is attacked it is generally in children with a scrofulous or traumatic history, and occurs at the outer part over the lacrymal gland or malar bone. Exostoses, if not too deeply situated, are fairly easily diagnosed by their extremely slow growth, nodulated surface, if this can be felt, and ivory hardness. They arise mostly from the sutures or in the sinuses, are deeply situated, and at first cause but little trouble, but later optic atrophy and proptosis, and may necessitate excision of the eyeball. They are painless in the early stages. I excised one from the rim of the orbit in the region of the orbital notch recently. You will find in deeply seated tumours of the orbit that it is very seldom that one can satisfy oneself as to the nature of them. The only possible way to palpate them is to thrust the smallest finger firmly but gently into the conjunctival sac after instilling cocaine. Valuable aid may be obtained in this manner. Orbital tumours may be solid or cystic, innocent or malignant.

Solid tumours of the orbit are much more deeply seated in my opinion than the cystic. They are fibromata; lymphomata which are often symmetrical and associated with lymphatic nodules in other organs of the body; endotheliomata and sarcomata. Carcinoma has only been found as metastatic growths and is extremely rare. The fibromata, lymphomata, as well as the lipomata, which latter are mostly seated anteriorly at the upper and inner angle, are all of them slow-growing, benign, painless, and tenderless swellings which cause slight proptosis and diplopia but nothing more. On the other hand, a patient who comes with a sarcoma comes complaining of pain in the orbit or eyeball, or both, and has tenderness on pressing back the orbital contents, and he will tell you that he is conscious of having "something growing behind the eye." Sarcomata early invade the orbital muscles and interfere with the ocular movements by invasion long before pressure does (Fig. 2) But some of the sarcomata, which arise in or about the

sheath of the optic nerve, and which cause proptosis straight forwards, because they are within the cone of muscles, cause early optic atrophy and amaurosis, are less malignant, and do not grow so rapidly or have so great—if any—tendency to spread to the muscles. Many pathologists now classify these tumours, which were formerly called myxofibromata, among the endotheliomata, because Treacher Collins and others have found no mucoid or myxomatous substance in the cases they have examined, but only general œdema of the tumour.

There is a chronic hyperplasia of the tissues about the optic nerve and of the interstitial substance in old syphilitic patients, especially those who are the subjects of cerebral syphilis and pachymeningitis, which may cause not only proptosis, optic atrophy, and blindness, but pain also. This pain is associated with other morbid cephalic sensations, and is probably part of the pachymeningitis or periostitis. The nerve may be three or four times its normal thickness and very hard. Some tumours of the optic nerve have grown so slowly as to cause flattening of the antero-posterior pole of the eye, and with resulting hypermetropia.

The diagnosis of cold and slowly-growing swellings of the orbit is largely aided by a knowledge of embryology. You will find meningoceles and encephaloceles nearly always at the fronto-nasal process, and very rarely along the ethmoid. They are congenital, smooth, swell on coughing and crying, and may be emptied by gentle pressure. They do not call for surgical interference as the patients are the newly-born, very debilitated, and soon die. The dermoids are generally either at the upper and outer angle of the orbit or at the inner wall, or on the eyeball itself. They may contain teeth, but I have never known them contain more than hairs and sebaceous matter, or an oleaginous and green fluid. There is a case, I am informed, at Leipsic University, of a teratoma protruding from an orbit, apparently a limb, but these cases are mere curiosities.

Dermoids of the orbit are smooth, nearly circular, semi-solid, mobile swellings which always appear more superficial than they really are; and in two of my cases where the growths were along the inner wall they sent long bands of

FIG. 2.

Sarcoma of orbit.

firm tissue backwards, and in one case a process went under the internal rectus muscle which had to be divided at its insertion and afterwards re-attached in order to thoroughly extirpate the growth. Great care is necessary in operating upon these dermoids, as sometimes the processes project into the cranial cavity, or through the sinuses, or are attached to large veins. But they are quite operable, and leave the eyeball and orbit with no defect worth mentioning afterwards, either functionally or cosmetically. There are not 20 hydatid cases on record and only half that number of cysticerci; they fluctuate and grow slowly. Filaria loa has occurred. The two other cysts that are not uncommon are the dacryops, which is easily diagnosed, since it is a lid tumour and can be found connected with the lacrymal gland, a duct of which has become enormously distended. Sometimes fluid may be squeezed from it. The other is a congenital cyst presenting along the lower eyelid, pushing it forward, and projecting also well backwards beneath the eyeball. It is connected with the globe and sometimes with the vitreous, and has arisen from the defective closure of the choroidal fissure. I here show you the section of such a cyst and the eyeball which I removed three years ago. My colleague, Mr. Brooksbank James, has a beautiful case attending the hospital now, in which the ophthalmoscope shows a connexion between the cyst and the eyeball.

The swellings in the orbit most likely to be confounded with the cysts in the early stages are the vascular tumours—the nævi and nævo-lipomata and the arterio-venous aneurysm. The nævi take two forms—the soft compressible, and the firmer, which may be slightly cystic. The first are by far the commoner, and may be connected with the veins of the lids, but are generally entirely within the orbit, and arise within the cone of muscles above or below the eyeball, and rarely to the nasal side, and protrude between the muscles into the orbit, projecting beneath the conjunctiva. They are all encapsulated, lobulated, and swell up on forcible expiration or on drooping the head forwards. They can be partially emptied on pressure, are not painful or tender, and do not interfere with the eyeball movements. They appear first at puberty and take years to grow, but cause great, quiet proptosis and distort the anatomy of the parts without loss of vision. The more solid ones have no impulse or expansion upon coughing or lowering the head, but they contain old and organised blood-clots, many large calculi, and sometimes small cysts. Some of you have no doubt seen the girl whose photograph I here show to you. She is 14 years of age, has large symmetrical nævi of the upper eyelids projecting into the orbits, which swell up greatly on lowering the head for a few seconds. The mother states that they are much larger and firmer at the menstrual periods. I intend to operate upon both of these.

In cases of arterio-venous aneurysm, or aneurysm of the internal carotid, or aneurysm of the extra-orbital portion of the ophthalmic artery, there is, even in the earliest stages, a continuous bruit, of which the patient is conscious, and which you can hear with the stethoscope. The patients nearly always give you the history of "something having gone off bang" in the skull, and they state that they continually hear the noise afterwards; it even keeps them awake at night. But they only come to you days or weeks later, when proptosis and chemosis of the eyeball appear. If you lay the flat of your hand on it you can feel it pulsate and expand. There is sometimes pain, but the sight is retained until very late in the disease. The patients generally give a history of syphilis or trauma. Sometimes a large venous dilatation will give pulsation and a bruit, but the great point to remember is that the bruit intermits in venous cases, there is no chemosis, and the contents of the orbit are more compressible, not painful, and the patient is not conscious of noise in his head.

Lacrymal gland tumours sometimes grow to a great size before they cause symptoms or physical signs. They mould themselves to the deep recess behind and above the outer rim of the orbit and at first extend backwards; afterwards the hard, sharp, and sometimes notched edge can be felt through the upper eyelid. They are rarely tender or painful unless inflamed, but sooner or later cause displacement of the eyeball and contents of the orbit downwards and inwards with enormous stretching of the upper eyelid. The photograph I showed you is one of a girl, aged 12 years, with marked orbital distension and proptosis caused by a lymphosarcoma of the left lacrymal gland. The pre-auricular gland, as well as the parotid lymphatic glands on that side of the face, were much enlarged. I excised the growth, which weighed 2¾ ounces, and the glands, and the patient did well and returned home. But four months later the patient had a recurrence of the cancer in the pharynx and parotid, from which, I was informed, she died, but it did not recur locally. The commonest swellings of this gland are either simple hypertrophy or endotheliomata. Excision is the treatment. Whilst it is almost unknown for tumours of the orbit to invade the eyeball, the reverse is by no means uncommon. They may perforate the globe at any site by thinning and absorbing the sclerotic, but the commonest place is by invading the optic nerve, or through its foramen in the sclerotic, or they perforate the limbus to the outer side of the cornea after causing glaucoma, and present as one variety of the fungus hæmatoides described by Wardrop. They are nearly all cases seen in quite young children and are gliomatous, and it is a late

stage of the disease when they are first seen by the surgeon, but the soft and thin state of the sclerotic coat in children, which easily yields to internal tension, predisposes to orbital extension. The photograph of the case I show of an enormous tumour projecting from the left orbit of a little Chinese girl was one of secondary recurrence after excision of the globe for perforating glioma of the retina.

Lastly, I wish to refer to some cases that I have seen at odd times of obscure and recurrent pains in the orbit, in which there has been no definite swelling, or proptosis, or tenderness, or which, if present at all, has been quite transitory and lasted less than 24 hours. One class of cases belong to the category of so-called ophthalmoplegic migraine and is associated with hemicrania, giddiness, slight ptosis, and perhaps paralysis of an extra- or intra-ocular muscle. They occur in youth, and patients get well upon alterative treatment, and about a year later recur. Then there is another in the so-called angioneurotic œdema, but here there is some slight swelling of the lids, which in one case occurred upon excitement after dancing or going to a theatre. Lastly, some rheumatic patients get intractable pains in the orbits which are quite independent of errors of refraction and muscular anomalies. They may be due to our old enemy, a sinus, especially the sphenoidal, and this is not improbable if the pain is deeply situated between the eyes. There are other sets of orbital cases, such as exophthalmic goitre, the cases of increased intracranial pressure with proptosis; the cases of tenonitis, the cases of enophthalmos which I should have liked to discuss, but my allotted time for this lecture has run out, and I must close.

# TRANSVERSE FRACTURES OF THE PATELLA, WITHOUT SEPARATION OF THE FRAGMENTS.[1]

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THE causes of separation of the fragments of a transversely fractured patella, and the causes of failure to obtain bony union in cases in which much separation has occurred, have been of the greatest interest to surgeons for some considerable time. The subject was first studied scientifically by Gulliver (1), whose classical experiments laid the foundation of our knowledge of this subject. He performed 11 experiments on dogs and rabbits, in five of which he divided the patella transversely together with its aponeurosis, and in the other six divided the bone only, leaving the aponeurosis intact. In the five in which the aponeurosis was divided there was separation of the fragments, and only fibrous union resulted. In the six in which the bone only was divided there was no separation of the fragments, and firm union was the result in all. The union was bony in five of these cases, but in one patella, removed only 27 days after the experiment, there was short ligamentous union only and no new osseous tissue had appeared. Amongst Gulliver's conclusions we find the following: "Osseous union is simply the effect of immoveable coaptation of the fragments, the provision for which, in certain forms of fracture, is the integrity of the aponeurosis in front of the bone." Gulliver, therefore, so long ago as 1837, only just failed to grasp fully the pathology of the failure of bony union in most of these cases. He knew that the rupture of the aponeurosis was the primary cause, but missed the fact, observed and pointed out by Macewen (2) nearly fifty years later, that the aponeurosis does not give way opposite the seat of fracture, with the result that the fringe attached to one part, generally the upper, falls between the fragments.

Macewen's clinical observations established the fact that the interposition of the præpatellar fibrous structures between the fragments was the cause of failure of bony union, and his deductions from his observations drew a picture of the pathology of transverse fracture of the patella which has been amply borne out by later observations made with greater facilities. Since the introduction of the X rays further proof has been forthcoming, and the recognition of transverse fractures, without any separation of the fragments which could not be diagnosed with certainty before the days of skiagraphy, has furnished additional evidence of the truth of Macewen's statements.

From the ease with which such fractures can be missed and the frequency with which they are found when specially looked for, one is led to infer that before the introduction of the X rays many cases without separation of the fragments were not diagnosed at all, or only after a further trauma had "completed" the fracture. Support is given to this view by the following. Malgaigne (3) described the case of a man who, several years earlier, broke his left patella, and in February, 1839, fell and broke the union. In March, 1839, he died, and at the post-mortem examination it was found that the right patella had also been broken and united by bone. This fracture of the right patella had not been suspected during life, and Malgaigne's drawings (4) show how close the union was. Again, Broca (5, 6) described a case of fracture of the patella by direct violence in which the fragments were held together for 14 days, when a false step and the slight muscular exertion necessary to prevent a fall led to tearing of the aponeurosis and separation of the fragments. Broca also quotes two similar cases reported by Malgaigne. In one of them a medical man received a violent blow on the knee from the wheel of a carriage and continued to walk, but the next day, whilst descending a staircase, he slipped, made an effort to recover himself, and the fracture was "completed." In the second case a woman, who had a violent contusion on the knee, continued to walk, and at the end of a month, whilst making a slight exertion, separated the fragments.

Broca's case is of special interest, in that there was positive proof that the first fall really did lead to a fracture of the patella by direct violence, for at the subsequent operation it was found that the lower fragment was split into two halves, the strain at a later date having caused separation at the site of the transverse fracture.

In 1887 Macewen (7) himself related an interesting case. A young medical man received an injury to his knee in a football match. He could, however, walk without much difficulty. On examining his patella no line of fracture could be found. Still, osseous crepitus was detected on lateral movement. The patient went about with a bandage applied for three weeks. Firm bony union took place. Macewen first saw the limb some years later, when there was only a transverse ridge on the patella to mark the seat of the former fracture. After describing this case Macewen expresses the opinion that "it is highly probable that those specimens which are occasionally seen of osseous union after transverse fracture of the patella have been obtained from patellæ which were fractured without accompanying rupture of the præpatellar ligamentous structures," an opinion which has been endorsed since the introduction of the X rays and the frequency of the occurrence of such fractures has become more apparent. I would here mention a case reported by Vallas (8) in 1899, in which a man fractured his patella by direct violence and became unconscious. He therefore made no attempt to rise, and there was no separation of the fragments. No operation was performed. In 1905 the same man died from Ludwig's angina, and the patella was obtained. It was described by Vallas (9), and it was impossible to find a solution of continuity either by direct examination or by the X rays.

Since the use of X rays has become more of a routine measure in cases of possible fracture a few further remarkable cases have been reported, the most striking being three described by Wegner (10), who, by employing the X rays systematically in all cases of injury, was able to demonstrate some cases of fracture of the patella which had not been diagnosed before. Since they were the first cases of this nature which had been clearly described and demonstrated by skiagrams, I venture to quote them rather fully, especially as at present they are only on record in the German language. They are of the greatest interest when studied with some cases of my own which, as far as I have been able to find, are the only other similar cases clearly demonstrated.

In Wegner's first case a man, aged 35 years, slipped and "wrieked" his knee. He did not fall, and after walking about 20 paces in considerable pain he was driven home. His medical attendant diagnosed an internal derangement, and treated it for four weeks with fixation, and then adopted massage. Two months after the accident the patient returned to light work, but had to abandon it, and four months after

[1] A paper read befor the Surgical Section of the Royal Society of Medicine on Dec. 13th, 910.

the accident he went to hospital. There was some atrophy of the thigh muscles, but the patella could be easily moved, was not enlarged nor uneven, and movements in the knee were free and without grating. A skiagram revealed a transverse fracture of the patella, and the plate which Wegner publishes shows that there was practically no separation of the fragments. With massage and exercises the muscles were restored and a good result was obtained.

The second case was that of a workman, aged 41 years, who is stated to have fallen on his left knee as he was carrying a chest of drawers downstairs, thinking he had only one instead of two stairs to go down. He walked home in spite of acute pain in the knee, stayed in bed for one day, and then went a 12-minutes' walk without stick or other help to see the surgeon, having to ascend two steps to get to the house. He walked home again alone. He was admitted to hospital three days after the injury. The effusion which was present disappeared after four weeks' compression, but on account of pain on the inside of the knee a further examination was made, and it was decided that the patient had a loose body in his joint. A skiagram, which Wegner publishes, was taken to decide this point, when it was found that the patient had also a transverse fracture of the patella, with practically no separation of the fragments, although a careful examination had failed to detect any pain at the site of the fracture, or any crack, or any separate mobility of the fragments. The patient had had no difficulty in extending the limb or raising it from the splint. The loose body was removed and the patient made an uninterrupted recovery. Bony union occurred, and on the X ray plate, with the exception of a small eminence on the anterior surface of the patella, Wegner states that there was no trace of injury.

The third case reported by Wegner is that of a workman, aged 44 years, who struck his right knee against the rung of a ladder which he was ascending. He felt a crack, but, in spite of acute pain, went a seven minutes' walk and ascended three storeys to his room, descended again to see the surgeon, again ascended, and two days later, on the advice of his medical attendant, went to hospital, again descending the three storeys alone. With the exception of a slight bruising of the soft parts at the sides and in front of the patella there was no sign of injury, and no sign of fracture of the patella, though this was specially looked for. A skiagram, which Wegner reproduces, shows the presence of a transverse fracture of the patella near its middle, without separation of the fragments. Treatment consisted of enclosure in plaster-of-Paris for six weeks, after which massage and exercises were employed. Convalescence was uninterrupted, and after three months Wegner states that no signs of a fracture could be detected by the X rays.

In 1900 Barker (11, 12) showed a somewhat similar case at the Clinical Society. This was a case of fracture by direct violence, with no palpable displacement, which was discovered by the aid of the X rays. The plate which was published, however, shows a separation of about a third of an inch, which is much more than in Wegner's cases or my own. Cauthier (13) reported a case of transverse fracture of the patella due to direct violence, without appreciable separation of the fragments, in which it was not until the man had been under treatment for eight days that a fracture was diagnosed. Cases which fall into the same category have been mentioned also by Thiem (14), Mayer (15), Doberauer (16), Smith (17), and Humblet (18). Trésoret (19, 20) has also reported a case of fracture by direct violence which should be included amongst those we are considering, for though the man went about his usual work in the field, walked two kilometres directly after the accident, and 13 kilometres the next day, he did not seek advice for more than two months afterwards, yet the union between the fragments was so narrow that it only measured some lines in breadth.

Blackham (21) has reported a case where the lower tip of the patella was broken off without the fragment being separated from the main part of the bone; and Bennett (22) showed at the Dublin Pathological Society a specimen obtained from the dissecting-room in which the same thing had occurred, though there was no history to the case. In Scudder's book (23) there is a tracing of an X ray plate of a similar fracture. In these cases of fracture of the tip of the patella the line of fracture is extra-articular, and separation of the fragments seldom takes place, since at this point the bone lies in the thick and strong patellar tendon. They have been fully described by Rödiger (24). Such fractures are very rare and of but little importance compared with transverse fractures through the body of the patella without separation of the fragments. The fractures of the tip of the bone get well without treatment; whereas in fractures through the body of the patella there is danger of some slight muscular exertion at a later date leading to separation of the fragments. Moreover, the joint being involved makes the injury a more serious one.

An extraordinary variety of transverse fracture of the patella is referred to by Reichel (25) and Magruder (26) in which the fracture is incomplete, not involving the cartilage. I have never seen a skiagram of such a case, which, of course, could not be diagnosed without the use of the X rays, and there do not seem to be any published. Such cases would be very like cases of incomplete fracture of the olecranon, which I have described elsewhere (27, 28), but if an incomplete fracture of the patella does occur it is much more remarkable than a similar injury to the olecranon. It must be remembered, however, that it is easy for the fracture to appear incomplete in a skiagram when the fissure does really extend through the whole thickness of the bone, and a careful examination with the screen should be made before the plate is exposed in order to avoid the chance of this error being made.

Now it is, of course, well known that cases of fracture of the patella from direct violence often do not result in much, if any, separation of the fragments. These fractures may be of any nature and the line of fracture may be in any direction. They are often comminuted, sometimes vertical, and in many cases transverse. It is not a matter for surprise, therefore, to find no diastasis in transverse fractures of the patella if due to direct violence, as in Wegner's last two cases and in other cases which have been quoted.

As in many ways a fairly typical example I will mention a case which occurred in the practice of the Middlesex Hospital.

CASE 1.—The patient, an able-bodied man, aged 28 years, was descending some steps into the street on May 26th, 1909, when he slipped and fell on his left knee. He got up without help and walked half a mile without stick or aid of any kind. On attempting to walk again, after resting for half an hour, he had much pain in the knee, and had to obtain the help of a friend to walk about a quarter of a mile to the hospital. He was seen by one of the resident officers, who transferred him to the out-patient department as a case of "traumatic synovitis" of the knee. The surgeon who saw him suspected the possibility of a fracture of the patella and recommended him for admission. The patient could move the knee freely, there was no palpable separation of the fragments, and no crepitus was obtained. A radiogram (Fig. 1) revealed a fracture of the patella without separation of the fragments, the line of fracture being mainly transverse, but the bone being slightly comminuted. There was considerable effusion into the joint and the patient was kept in bed for a few days, after which he had a light removeable plaster-of-Paris splint applied and went to the convalescent home. There massage and passive and active movements were carried out daily, and convalescence was uninterrupted. Bony union occurred, as the accompanying skiagram, taken on Dec. 20th, 1909 (Fig. 2), shows, and the man recovered with a strong knee and perfect movement.

This case, as I have said, is fairly typical and by no means uncommon, though, like many similar cases, it presented some difficulty in diagnosis. But the next three cases I will describe were much more remarkable and of the greatest pathological, as well as clinical, interest, for the fractures were caused in each case, as in Wegner's first case, by indirect violence—that is, by muscular contraction snapping the patella across the lower end of the femur—the well-named "tear fracture" of the patella.

CASE 2.—The patient, a man aged 43 years, a driver of a horse tramcar, was descending the stairs to open the door to some visitors on the evening of Jan. 15th, 1909, when he caught the heel of his boot on the edge of a stair. He stumbled, but with an effort recovered his balance. He noticed a slight pain in the right knee, but did not pay any attention to it, finished his descent of the stairs, and returned to his room, mounting two storeys. Next morning he noticed that his knee was rather swollen, but went to work. Owing to some pain and weakness in the joint he came later in the day to the hospital. He walked in with a slight limp, and, on examination, it was found that there was a little effusion into the joint, but otherwise no sign of any injury. The history being very suggestive of a fracture of the patella, particular attention was paid to the signs of this injury, and he was seen by several members of the hospital staff. There was no crepitus, no local tenderness, no cleft could be felt, no interference with movement (apart from what would be accounted for by the effusion alone), and no loss of the power of extending the leg. A radiogram, however, revealed the presence of a transverse fracture of the patella without separation of the fragments (Fig. 3). The patient was kept at rest in bed for a few days, when a light moveable plaster-of-Paris splint was applied, and he was sent to the convalescent home, where he had massage and exercises daily, getting about during the rest of the day with his splint on. Convalescence was uninterrupted and bony union the result. (Fig. 4, taken on Feb. 14th, 1910.)

This last case was demonstrated at a meeting of the Middlesex Hospital Medical Society on March 25th, 1909, and the importance of being on the look-out for such an obscure injury was emphasised. It was somewhat alarming a few weeks later, when a house surgeon informed me that he had filled the last surgical bed with a traumatic synovitis of the knee, because he suspected that it might turn out to be a case of a similar fracture to the one I have described. However, my fears that the wards would be filled with cases of suspected fracture were not justified, for the case turned out to be a transverse fracture of the patella without separation of the fragments. The history of the case is as follows:—

CASE 3.—The patient, a barmaid, aged 29 years, was turning round quickly in a stooping position when she felt a pain in the left knee like "something stretching." The pain increased, so she went to get some camphorated oil, her panacea for all ills, to obtain which she ascended

three flights of stairs. She then returned to her work at the bar, but as the knee got more painful she sent for a medical man, who referred her to the hospital. She was admitted to the Queen's Ward on April 14th, 1909, the day of the accident, under Sir Alfred Pearce Gould, who, knowing I was interested in these cases, kindly transferred the patient to my care, and I am indebted to him for permission to publish it. There was good power of extension of the leg; no line of fracture could be felt. There was no local tenderness, no crepitus, and but little effusion into the joint. A radiogram (Fig. 5) showed a transverse fracture of the patella, without separation of the fragments. After a few days' rest in bed a light removeable plaster-of-Paris splint was applied, and she was sent to the convalescent home, where massage and passive and active movements were carried out daily. Convalescence was uninterrupted and the result was excellent, bony union occurring, as the accompanying plate shows. (Fig. 6, taken on Sept. 5th, 1909.)

CASE 4.—The remaining case was that of a carman, aged 31 years. He was descending some stairs on Feb. 7th, 1910, to deliver a parcel, when he slipped and fell downstairs, failing to recover himself. He did not fall on his knee, but his leg was bent under him. He got up, went upstairs again, mounted his van, and drove back to the depôt. He got off his van without help. The knee later in the day became painful, so he drove round to the hospital and walked in. The case was diagnosed as one of synovitis of the knee, a back splint was applied, and the patient instructed to attend as an out-patient. The next day he remained indoors, but the following day, Feb. 9th, he called at the hospital again, when the casualty surgical officer, Mr. C. H. S. Webb, ordered a skiagram to be taken (Fig. 7), and it was found that there was a transverse fracture of the patella, without separation of the fragments. In this case, as in the others, there was no local tenderness, no crepitus, and no separation of the fragments to be felt. The power of extending the leg was quite strong also. The same treatment was adopted as in the other cases and the result was excellent, bony union being obtained. (Fig. 8, taken on July 18th, 1910.)

For the trouble he has taken in the skiagrams published with the above cases I am much indebted to Mr. R. F. Mann, photographer and assistant in the electrical department at the Willesden Hospital.

The problem of the satisfactory treatment of fractures of the lower limb in hospital is no easy one, for if they are to be treated by massage and exercises these cannot be carried out for a sufficient length of time in the wards owing to the great demands on the beds, so that some splint has to be applied while they are being treated as out-patients, with the result that stiffness in the neighbouring joints and adhesions at the site of fracture are but too common. At the Middlesex Hospital a serious attempt has been made to deal with this difficult problem, and we are fortunate in having at our convalescent home a most able and enthusiastic matron who takes the greatest interest in these cases, and supervises treatment by massage and exercises by nurses skilled in massage after the patients are fit to be discharged from the wards of the hospital.

All the cases of fracture of the patella which I have described were, after a few days' stay in bed, transferred from the hospital to the convalescent home, where massage and movements were carried out daily. In all the cases recovery was absolutely complete—in fact, a perfectly sound limb was the result, and the patients were fit to return to their occupations within three months of the date of the injury.

In every instance the union was bony. Unless great care be taken to make the exposure to the X rays in the exact line of fracture, it is quite possible for a plate to appear to show bony union when none is present. In all my cases the patella was most carefully examined through the fluorescent screen before the exposure of the plate, to make absolutely certain that no cleft between the fragments was still visible.

The cases are extremely interesting in many ways. First, they are of great pathological interest, for they bear out very clearly the statements of Macewen with regard to the mode of production of a transverse fracture of the patella by indirect violence. As Macewen (29) stated, "the fibrous and aponeurotic tissues lying in front of the patella are more elastic than the bone. By muscular action the bone snaps and retracts, and the fibrous and aponeurotic tissues over it still holding they bridge the interspace between the two fragments. If the contraction continues, the aponeurotic and fibrous tissues become overstretched and lose their resiliency. Finally, if the force be great enough the bridge gives way ....."

The clinical interest of these cases is enormous, and their importance cannot be exaggerated. The fact that the patients walked without much difficulty is remarkable in itself. Still, it must be remembered that patients can walk even when there is an obvious fracture of the patella, with marked separation of the fragments. Jessop (30) reported the case of a bargee who broke his patella clean across, tied a handkerchief round the knee, but never lay up or received any treatment at all. Dubrueil (31) also relates how a man fractured his patella and was able to walk forward to his home. Later he re-fractured it and again was able to walk. Martin (32) has also reported a similar case; while Carl Beck (33) mentions that in his experience patients, in spite of appreciable diastasis, were able to walk considerable distances without apparent discomfort. The fact that a patient walks in to see the surgeon should not therefore lead him to exclude the likelihood of a fracture of the patella having occurred.

From a study of these cases without separation it will be realised that the diagnosis may be extremely difficult, and that an absolutely certain diagnosis may be impossible without the aid of the X rays. This possibility has been rather neglected in most text-books, though recently attention has been called to it in some American and German works. Besides those writers who have already been referred to, these cases of fracture without separation of fragments have been mentioned specially by Reichel (34), König (35), Magruder (36), and Heineck (37), the last named stating that they often escape recognition. But even in the latest work by Cotton (38) it is stated that tear fractures always lead to separation of the fragments. This is shown to be a misstatement by Wegner's first case and by my three cases.

The difficulties of diagnosis being proved, the question arises whether neglect to recognise cases of this character is of great importance. Undoubtedly it is. If these cases are treated as simple contusions or sprains, and the patients are allowed to go about and return to their ordinary work when the swelling has subsided, separation of the fragments is likely to occur, and the fracture may be very easily converted from one which will get quite well with rest and care into one requiring operative treatment to ensure a satisfactory result. The case reported by Broca, and Malgaigne's cases which he refers to, all of which I have already described, are good examples of the dangers to which these patients are exposed. It is essential, then, in injuries of the knee or any other part to have a skiagram taken of all cases in which there is the slightest possibility of fracture. In fact, the X rays, by the revelations they have made, have proved the importance of having a plate taken in all injuries of the joints, and there can be little doubt that many cases diagnosed as sprains are really associated with fracture. The medico-legal importance of these cases can hardly be over-estimated, for if the patient obtain a skiagram elsewhere, which shows a fracture when the surgeon has assured him that there is none, the consequences are likely to be extremely unpleasant, if not disastrous, for the surgeon. While not in any way wishing to discourage the most careful manual examination of cases of injury, the fact must be recognised that manual examination, however carefully carried out, will fail to demonstrate some bone lesions which only the X rays will reveal. By the systematic use of the X rays obscure injuries will be revealed, and much needless suffering and inconvenience prevented.

The next aspect of these cases to which I will direct attention is the process of repair and the importance of obtaining bony union. The average length of treatment in my cases was about three months, when the patients returned to full work. Skiagrams were frequently taken to make sure that no separation of the fragments was taking place. The new bone does not throw a clear shadow for some months after it is laid down, and it is not possible to be sure that bony union has occurred until five or six months after the injury. I attach great importance to obtaining bony union in these cases, for even a short fibrous union is liable to stretch, an occurrence attended by some disability, not to say many dangers. Not the least of these dangers is the liability to re-fracture of the patella or rupture of the ligamentum patellæ. It is a pity, to my mind, that cases of fracture of the patella, including even those which have been submitted to operation, are not more carefully followed up and skiagraphed to see whether bony union has resulted; and Stimson (39) has stated that even in operation cases the union, which was so close that no independent mobility could be recognised, has sometimes been found to be fibrous, while in some bony union has taken place only in the posterior half or three-quarters.

It has been maintained that fibrous union was as good as, or even better than, bony. Hamilton (40), for instance, stated that a fibrous band, with only half or three-quarters of an inch separation, was as useful as bony, whilst many writers contended that because the bone, and not the fibrous

FIG. 1.

FIG. 2.

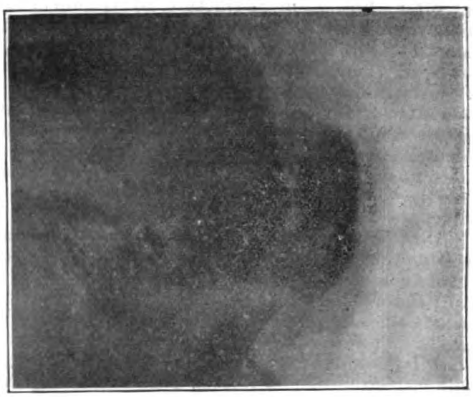


FIG. 3.

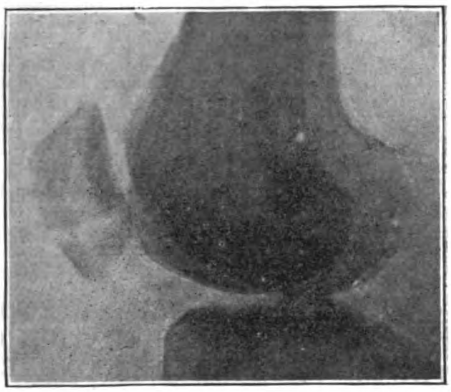


FIG. 4.

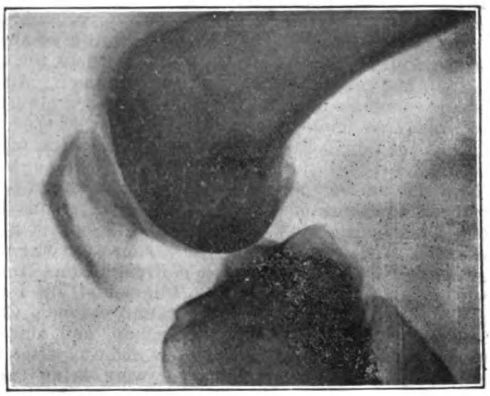


FIG. 5.

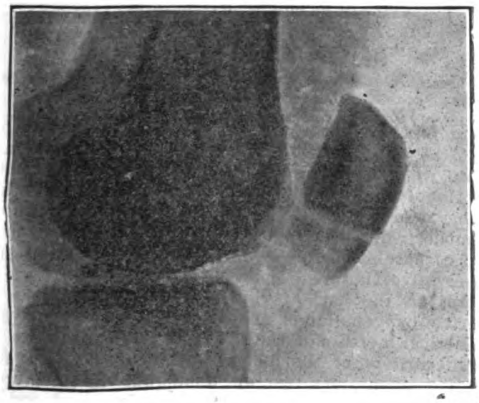


FIG. 6.

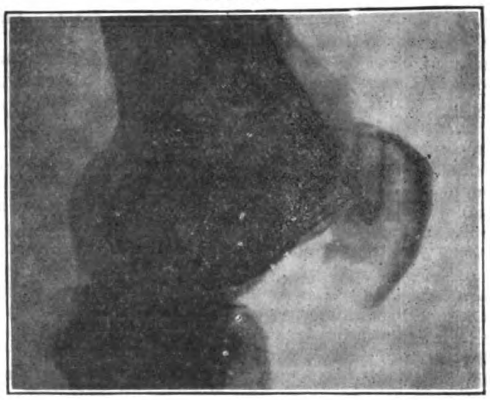
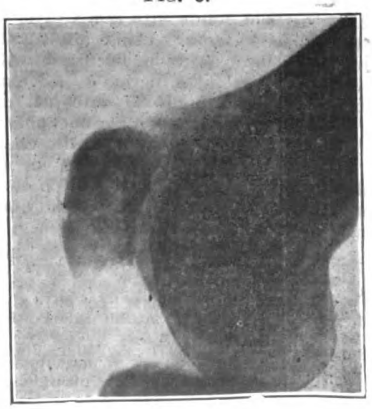


FIG. 7.

FIG. 8.



union, often breaks in re-fracture, bony union has no advantage over a close fibrous union. Such was maintained by Morris (41), Desprès (42, 43), Wagner (44), and Murray (45), amongst others, but these surgeons were probably not aware of the fact that re-fracture was more common after non-operative than after operative treatment, and that it was the fibrous union and consequent lengthening of the patella which predisposed to re-fracture.

That fibrous union of a fractured patella does seriously impair the stability of the knee-joint must now be undoubted. Re-fracture is much more frequent in the patella than in any other bone—Lauper (46), Thiem (47), Corner (48, 49); and more common after massage and other forms of non-operative treatment (when the union is generally fibrous) than after open operative treatment (when the union is probably bony)—Alessandri (50), Gibbon (51), Meyers (52), Powers (53), Bégouin and Audérodias (54). Not only does a fibrously united patella increase the liability to re-fracture, but the whole extensor arc is weakened, the joint being uncertain and unreliable, which leads to frequent falls if the patients return to their usual occupations and habits of life. There is evidence of this in the frequency with which other injuries occur; for example, rupture of the ligamentum patellæ. In 140 cases of rupture of the ligamentum patellæ Walker (55) found that previous fracture of the patella had been an etiological factor 17 times. Although bony union presents but slight advantages over a close fibrous union so far as immediate results show, when the future history of the limb is taken into account the advantages are much greater.

The period of treatment in my own cases might possibly have been cut down slightly, but, for the reasons I have stated, I was particularly anxious to make sure of a sound bony union. There has been great keenness on the part of surgeons to cut down the length of treatment of fractures of the patella after suture of the fragments, but I cannot help thinking that this has been rather overdone. Cases of re-fracture after wiring are too common, and since they generally occur during the first few months after operation it looks as if too great a risk were being taken in allowing these patients so much freedom of the limb, and some support such as a bandage or even some check apparatus, such as that described by Howard Marsh (56), would seem advisable to prevent extreme flexion for the first few weeks after getting about. No doubt, however, many wonderful cases have been reported; for instance, one recorded by Lucas-Championnière (57), where a clown was able to return to his occupation, involving the turning of somersaults, within two months after operation.

In bringing the subject of transverse fracture of the patella, without separation of the fragments, under notice, I thought it would give food for thought in many ways: pathologically the cases are interesting; the clinical picture is most striking and teaches us to hesitate very much before giving a definite diagnosis of a bone lesion without the help of the X rays; and historically, in accounting for probably most of the cases of bony union which were recovered from the post-mortem and dissecting rooms before the days when wiring was the usual treatment.

By far the most important point for the surgeon is the difficulty of diagnosis, and he must now realise that he is absolutely dependent on the X rays in such cases. With regard to the frequency with which these cases occur, it is difficult to speak with certainty, and until it is the rule to examine all injuries of joints with the X rays, we cannot say how many of these cases are being missed at the present time. The cases I have described occurred in the practice of the Middlesex Hospital in a period of 13 months, during which time we treated in all 20 cases of fracture of the patella. Failure in diagnosis may not only involve the surgeon in a suit for damages, but if the character of the injury be not realised by somebody else, an unusual strain may lead to great hardship for the patient, owing to separation of the fragments and the necessity of an operation which would otherwise have been unnecessary.

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Middlesex Hospital, W.

A CASE OF

# CONGENITAL PULMONARY STENOSIS, WITH SPECIAL CONSIDERATION OF THE NATURE OF THE SECONDARY BLOOD CHANGES.[1]

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IN a previous paper one of us (F. P. W.)[2] described the case of a young man, aged 22 years, with congenital heart disease, great cyanosis, and extreme secondary polycythæmia (polyglobuly)—namely, over 10,000,000 red cells to the cubic millimetre of blood. Evidence was furnished in support of the modern doctrine that the excess in the number of red blood corpuscles in such cases was largely of a compensatory (conservative) nature; that it was a manifestation of the attempt on the part of the bone-marrow to make up for imperfect oxygenation of the blood and tissues of the body by a numerical increase of the red cells—that is to say, of the oxygen carriers of the blood; that it represented, in fact, a vital compensatory reaction analogous to the increase of the polymorphonuclear leucocytes in the blood, consequent on streptococcal invasions, &c. It was furthermore pointed out that the figures obtained by actual blood-counts might make one under-estimate rather than over-estimate the total numerical excess of erythrocytes in the body, for there was considerable evidence indicating that when, in chronic cardiac cases, the erythrocyte-count per cubic millimetre of blood was above the normal (relative polycythæmia) the total volume of blood in the whole body was likewise excessive, a supposition confirmed by the congested appearance of the ears, lips, nose, tongue, and retinæ in many cases.

In the present case we have been able to obtain additional evidence (pointing to the same conclusions) by means of the estimation of the total hæmoglobin and total blood volume in the body by Haldane and Lorrain Smith's carbon

[1] A paper read before the Clinical Section of the Royal Society of Medicine on Jan. 13th, 1911.

[2] F. P. Weber: Edinburgh Medical Journal, 1909, New Series, vol. ii., p. 18.

monoxide method. As concentration of the blood resulting from delayed circulation (stasis) in the capillaries might partly account for the polycythæmia in chronic cardiac cases, we have in the present case attempted to measure (as was proposed in the paper already referred to) the degree of any such blood concentration (if present) by estimating the total solid residue in the patient's blood serum, just as Weintraud and Senator estimated it in cases of so-called "splenomegalic polycythæmia" or "erythræmia."[3]

It has been suggested by Bence, von Koranyi, Mohr, Lommel,[4] and others, and quite recently again by E. C. Seufert,[5] that the excess of red blood corpuscles in cases of splenomegalic polycythæmia (erythræmia) may be accounted for as a compensatory vital reaction on the supposition that the hæmoglobin is defective in quality in such a way as to lower its capacity for taking up oxygen. Similarly it might be suggested that a lowered oxygen capacity of the hæmoglobin is the real cause of polycythæmia, when this is met with in cases of congenital (and acquired) heart disease. There is, however, no evidence that the oxygen capacity of the hæmoglobin is abnormally low or abnormally high in either group of cases, unless Mohr's observation be correct that it was actually diminished in a case of congenital pulmonary stenosis with secondary polycythæmia, which was specially examined in this respect. In cases of polycythæmia with splenomegaly the oxygen capacity of the hæmoglobin has never been found notably reduced. Thus, in two cases of Lommel and one of Mohr it was found to be at the lowest level within normal limits; nor did cases referred to by Senator (1906) and Parkes Weber (two cases in which A. E. Boycott examined the oxygen capacity of the blood) furnish any support to Bence's suggestion.[6] Of great importance are the observations of P. Morawitz and W. Röhmer[7] on the subject. They apparently find that the oxygen capacity of the hæmoglobin does not differ in health or disease from the ordinary standard, even if in some conditions (affecting the salts in the blood) the oxygen is much more readily dissociated from the hæmoglobin than in others. Moreover, we may add that in the rare cases of chronic methæmoglobinæmia and chronic sulph-hæmoglobinæmia (in which less oxygen than normally can be taken up by the red corpuscles) secondary polycythæmia has not been noted.

The patient in the present case is an intelligent young man of Jewish parentage, aged 29 years, a French polisher by trade, who first came under observation on account of temporary bronchitic symptoms. In spite of his congenital heart disease (see later) and the lividity, polycythæmia, &c., connected with it, he has usually enjoyed good health. He has great cyanosis of the lips, tongue, ears, nose, fingers, and toes; the cyanosis varies in degree from time to time and is increased by muscular exercise; it does not seem to be markedly lessened by oxygen inhalation. There is a tendency to epistaxis and there is decided "clubbing" of the fingers and toes. A skiagram of the hands shows the absence of any osteo-arthropathy; the phalangeal bones appear normal. By percussion and Roentgen ray examination the heart is found to be slightly enlarged to the right, the cardiac dulness reaching one finger-breadth to the right of the sternum. There is a rather loud systolic murmur, best heard over the second and third left intercostal spaces, close to the left border of the sternum, doubtless due to pulmonary stenosis. From what has been found in similar cases, it is highly probable that in addition to the pulmonary stenosis there is a considerable defect in the interventricular septum, but of this we have no certain physical signs. Beyond these points there is nothing special to be noted in regard to the examination of the thorax and abdomen. The liver and spleen cannot be felt and are apparently not enlarged. Brachial systolic blood pressure, about 100 mm. Hg. Examination of the urine shows nothing abnormal except that there is intermittent albuminuria of the orthostatic type. The urine passed immediately on getting out of bed in the morning is free from albumin, whereas that passed later yields a more or less thick cloud of albumin; but when microscopically examined it was free from tube-casts. There is no sexual or other form of infantilism. As in cases of "splenomegalic polycythæmia" ("erythræmia") the conjunctivæ tend to be suffused owing to vascular engorgement, and by ophthalmoscopic examination the retinal veins are seen to be distended. In January, 1910, a retinal hæmorrhage at the lower part of the left optic disc was noted.

*Blood examination.*—Red cells (capillary blood). 10,110 000 per cubic millimetre of blood; white cells, 10,275 per cubic millimetre; hæmoglobin, 200 per cent. by Sahli's method, 180 per cent. (on a later occasion) by Haldane's method. The blood is so "thick" that it is relatively difficult to suck it up into a capillary tube; when the fresh blood has been centrifugalised in a cylindrical tube about nine-tenths instead of the normal one-half of the column are taken up by the corpuscular layer. A differential count of 500 white corpuscles (made in September, 1910) gave polymorphonuclear leucocytes 73 per cent., small lymphocytes 19·8 per cent., large lymphocytes 5·2 per cent., transitionals 1·0 per cent., eosinophiles 0·6 per cent., mast-cells 0·4 per cent.; the red corpuscles in the blood-film showed nothing abnormal excepting that three nucleated red corpuscles (normoblasts) were seen during the count of 500 white cells.

The viscosity of the blood as estimated (at 20° C.) by Determann's clinical viscosimeter,[8] was found to be 35·9 times that of water (at 20° C.), that is to say, very greatly in excess of the normal. The coagulability of the blood was less than that of normal blood; the coagulation time, as measured by Sir A. E. Wright's coagulometer, being 15 minutes.[9] The resistance of the blood towards hæmolysis, as tested by the addition of the washed red corpuscles to graduated hypotonic salt solutions, appeared to be rather below the normal standard; very slight hæmolysis was observed when the washed red cells were added to a 0·72 per cent. aqueous solution of sodium chloride, and was complete with a solution of 0·54 per cent.

Specific gravity of the blood (pyknometer method), 1·086; specific gravity of the blood serum (pyknometer method), 1·036; dry residue of the blood, 29·4 per cent.; dry residue of the blood serum (only half a gramme of serum was obtained, which, owing to slight hæmolysis, was coloured red with hæmoglobin), 10·38 per cent.

On Sept. 10th, 1910, Dr. J. S. Haldane and Dr. C. Gordon Douglas kindly estimated the patient's total oxygen capacity (or rather the oxygen capacity of the total hæmoglobin of his blood) and his total blood volume by Haldane and Lorrain Smith's carbon monoxide method.[10] For their investigation and the following report (by Dr. Douglas) we take this opportunity of thanking them. Precautions were taken to guard against a possible source of fallacy (in the method in question) which may arise if insufficient time is allowed for the even distribution of the carbon monoxide through the blood before taking the samples of blood for analysis. The carbon monoxide was given at a slow rate (30½ minutes were occupied by this) by means of the original apparatus employed by Haldane and Lorrain Smith, and the patient was required to breathe for another four minutes into this apparatus. Then he breathed for 17 minutes into a closed respiration apparatus with an effective volume of 15 litres containing pure air, the oxygen in this being kept constant automatically

[3] Vide F. P. Weber: Polycythæmia, Erythrocytosis, and Erythræmia, Quarterly Journal of Medicine, Oxford, 1908, vol. ii., pp. 85–134. By analogy with the terms "leucocytosis" and "leukæmia" the term "erythrocytosis" is sometimes employed to signify a secondary ("reactive") increase of the red blood corpuscles so as to distinguish it from a condition ("erythræmia") in which the increase of the red cells is apparently due to a primary disorder of the erythrocyte-producing tissue of the body.

[4] These authors are quoted by F. P. Weber, Quarterly Journal of Medicine, loc. cit., p. 113.

[5] E. C. Seufert: American Journal of the Medical Sciences, Philadelphia, 1910, vol. cxl., p. 827. Seufert assumes, as causa causans of erythræmia, some deterioration in the quality of the hæmoglobin.

[6] Cases quoted by F. P. Weber, Quarterly Journal of Medicine, loc. cit., p. 114.

[7] P. Morawitz and W. Röhmer: Ueber die Sauerstoffversorgung bei Anämien, Deutsches Archiv für Klinische Medicin, 1908, vol. xciv., pp. 529, et seq.

[8] Determann: Verhandlungen des Kongresses für Innere Medicin, Wiesbaden, 1907, vol. xxiv., p. 533. E. Münzer and F. Bloch, in their work, Experimentelle Beiträge zur Kritik der Viskositätsbestimmungsmethoden (Zeitschrift für Experimentelle Pathologie und Therapie, Berlin, 1910, vol. vii., pp. 174–184), find that Determann's clinical viscosimeter gives too high values. Anyhow, in our present case, the viscosity is, beyond all doubt, excessive.

[9] In cases of erythræmia (splenomegalic polycythæmia) and polycythæmia secondary to cardio-pulmonary affections Parkes Weber has observed that the coagulation of the blood seems to be delayed, as if diminution of coagulability were compensatory (in the modern teleological sense) to great increase of blood-viscosity in these cases (the increased tendency to thrombosis, connected with the excessive blood-viscosity and delayed capillary circulation being to some extent neutralised by the diminution of blood-coagulability).

[10] Haldane and Lorrain Smith: Journal of Physiology, 1900, vol. xxv., p. 331.

by means of an arrangement similar to that devised by Regnault and Reiset. The amount of carbon monoxide lost by the patient into this closed space was sufficiently small to be neglected. During the experiment 239 c.c. of carbon monoxide (measured at 0° C. and 760 mm. Hg pressure) were administered to the patient. Two samples of blood were taken from the finger, one 11½ minutes before the end of the experiment and the other at the end of the experiment. The degree to which the blood was saturated with carbon monoxide—namely, 11·9 per cent.—was the same in the two samples, and there can therefore be little doubt that the time allowed was long enough for the gas to become evenly distributed through the blood. The total carbon monoxide (or oxygen) capacity of the subject (or rather of the hæmoglobin in his blood) was therefore $239/11 \cdot 9 \times 100 = 2010$ c.c. Since the percentage of hæmoglobin by Haldane's hæmoglobinometer was 180, corresponding to an oxygen (or carbon monoxide) capacity of 33·3 per cent., the volume of the patient's blood was $2010/33 \cdot 3 \times 100 = 6040$ c.c. The patient's weight without clothes was 7 st. 4 lb., or 46 kilos, and he had therefore 4·37 c.c. of oxygen capacity (in his hæmoglobin) and 13·13 c.c. of blood per 100 grammes of body weight. Haldane and Lorrain Smith's original results for a series of 14 normal men were 0·98 c.c. of oxygen capacity and 4·78 c.c. of blood per 100 grammes of body weight; Plesch [11] gives 1·12 c.c. of oxygen capacity and 4·78 c.c. of blood, and Oerum [12] gives 5·2 c.c. of blood. It is doubtful (Dr. Douglas writes us) whether the fallacy alluded to above was excluded in all these cases, since more recent observations [13] have shown in three perfectly normal persons an oxygen capacity of about 1·4 c.c. and a blood volume of about 7·5 c.c. per 100 grammes of body weight. In the present case, however, there can be no doubt that both the oxygen capacity and the blood volume per 100 grammes of body weight are very much greater (especially, of course, the former) than those in normal persons, though, on account of the difficulty just mentioned, the values cannot at present be definitely expressed as multiples of normal values.

In regard to these remarks of Dr. Douglas, it may be noted that according to the old idea that the total blood in the whole human body averages about one-thirteenth of the body weight (or 7·7 grammes blood per 100 grammes body weight), the normal weight of the blood in a person of the present patient's body weight (46 kilogrammes) should be about 3538½ grammes.

The present case may be regarded as an extreme example of cyanosis and polycythæmia [14] in an adult secondary to congenital heart disease. It shows that in these cases, as in "splenomegalic polycythæmia" ("erythræmia"), not only the number of red corpuscles and the amount of hæmoglobin per cubic millimetre of blood are greatly above the normal, but so also are the amount of hæmoglobin (as measured by the oxygen capacity) and the volume of blood per 100 grammes of body weight; there is, in fact, a condition of true plethora ("polyhæmia") present, so that the degree of absolute polycythæmia is much greater even than the degree of relative polycythæmia.

The polycythæmia in these cases can therefore only to a very limited extent, if at all, be accounted for by inspissation of the blood owing to blood stasis in the capillaries. But it must, as in "splenomegalic polycythæmia" ("erythræmia"), be almost entirely due to an increased formation of red blood cells in the bone marrow. In the present case the great hæmopoietic activity of the bone marrow is confirmed by the rather large percentage (though it is within normal limits) of the polymorphonuclear leucocytes (73 per cent. of the white cells) and by the presence of a few nucleated red cells in the circulating blood.

That polycythæmia in chronic cardiac cases is not merely "relative polycythæmia"—that, in fact, it is not merely due to concentration of the blood owing to delayed circulation (blood stasis) in the capillaries—has been to some extent shown by the numerical increase of the red cells being found not only in the blood from capillaries and veins, but likewise in that from the arteries. Thus, G. A. Gibson [15] on one occasion, in a boy, aged 16 years, supposed to be suffering from mediastinal pericarditis, found the erythrocytes in the arterial blood to be 7,000,000; in the capillary blood, 8,500,000; and in the blood from a vein, 10,000,000. Palleri and Mergari, [16] in a case of congenital pulmonary stenosis, counted the red cells in capillary blood from the finger at 6,650,000; in venous blood from a vein in the arm at 6,400,000; and in arterial blood from the temporal artery at 5,950,000.

The dry residue of the blood (29·4 per cent.) and of the blood serum (10·38 per cent.) in our present case may be compared with the following data given by W. Bie and W. Maar [17] in their account of a case (a man aged 19 years) of cyanosis and polycythæmia (6,500,000 to over 10,000,000 red cells in the cubic millimetre of blood) secondary to congenital heart disease:—

| | |
|---|---|
| Dry residue of blood (from a vein) ... ... | 25·41 to 25·45 per cent. |
| Dry residue of blood serum ... ... ... | 8·87 to 8·88 ,, |

As approximate values for normal persons the following figures may be given [18]:—

| | |
|---|---|
| Dry residue of blood ... ... ... | 20·3 to 22·8 per cent. |
| Dry residue of blood serum... ... | 9·21 to 10·50 ,, |
| Albumin in blood ... ... ... ... | 22·6 per cent. (von Jaksch). |
| Albumin in blood serum ... ... | 8·8 ,, ,, |
| Specific gravity of blood ... ... | about 1·060 |
| Specific gravity of blood serum... | 1·028 to 1·031. |

The excess of red corpuscles accounts, of course, for the rather large percentage of dry residue and the rather high specific gravity in polycythæmic blood as a whole, but it is with the corresponding figures for the blood serum that we are specially concerned. The fact that these latter are not much, or not at all, above normal limits shows that the blood plasma in polycythæmia secondary to congenital heart disease (as also in "splenomegalic polycythæmia" or "erythræmia") is not greatly if at all concentrated. In other words, it proves that the polycythæmia cannot be accounted for by concentration of the blood as a whole. In our own case, indeed, the figures show that the blood plasma may have been very slightly concentrated, [19] probably as a result of capillary blood stasis. (It may be noted in this connexion that "clubbing" of the fingers and toes was not present in Bie and Maar's case, but was in our case.)

The albumin in the blood and blood serum has not, as far as we know, been estimated in cases of polycythæmia secondary to cardiac disease, but in cases of erythræmia Weintraud and Senator both found the percentage of albumin in the blood serum below the normal, and in an unpublished case of erythræmia G. Dorner estimated it at 7·38 to 7·55 per cent. (that is, below the normal, according to von Jaksch).

Anyhow, we have now decided evidence that the chronic polycythæmia of congenital heart disease is, like that of "erythræmia," associated with excess in the total blood-volume of the body ("plethora vera," "polyhæmia") and with excessive formation of red blood corpuscles in the bone marrow. This is doubtless also true of the polycythæmia sometimes associated with acquired heart disease. Thus Lorrain Smith and H. L. M'Kisack, [20] in the case of a boy, aged 12 years, suffering from adherent pericardium and chronic cyanosis, not only showed that the proportion of red cells to blood plasma was excessive (relative polycythæmia), but also demonstrated by the carbon-monoxide method that

[11] Plesch: Zeitschrift für Experimentelle Pathologie und Therapie, 1909, vol. vi., p. 380.

[12] Oerum: Deutsches Archiv für Klinische Medicin, 1908, vol. xciii., p. 356.

[13] See Boycott and Douglas, Guy's Hospital Reports, 1908, vol. lxii., p. 157; and C. G. Douglas, Journal of Physiology, 1910, vol. xl., p. 471.

[14] F. Parkes Weber in the Edinburgh Medical Journal (1909, New Series, vol. ii., p. 18) gave references to 14 cases of congenital pulmonary stenosis, or more complicated forms of congenital heart disease, in which blood counts showed that there were over 8,000,000 red cells in the cubic millimetre of blood. In the case he himself described, a man aged 22 years, the red cells were 10,300,000 in the cubic millimetre. In cases of congenital heart disease published since then counts of over 9,000,000 red cells have been recorded by C. A. Fife (Proceedings Philadelphia Pediatric Society, Dec. 14th, 1909; British Journal of Children's Diseases, London, 1910, vol. vii., p. 24), by T. R. Whipham (Proceedings Royal Society of Medicine, 1910, vol. iii., Section for the Study of Disease in Children, p. 149, and Ibid., 1911, vol. iv., p. 3), and by W. Bie and W. Maar (Deutsches Archiv für Klinische Medicin, 1910, vol. xcix., p. 382.)

[15] G. A. Gibson: THE LANCET, Jan. 5th, 1895, p. 24.

[16] Palleri and Mergari, quoted by Guiserne, Des Polyglobulies, Thèse de Paris, 1902.

[17] W. Bie and W. Maar: Deutsches Archiv für Klinische Medicin, Leipzig, 1910, vol. xcix., p. 382.

[18] Compare also the figures quoted in H. Vierordt's Anatomische, Physiologische und Physikalische Daten und Tabellen, third edition, Jena, 1906, pp. 191-203.

[19] The blood serum used in our case, as already mentioned, contained a little hæmoglobin.

[20] Lorrain Smith and M'Kisack: Transactions of the Pathological Society of London, 1902, vol. liii., p. 136.

the total volume of blood was far beyond the normal standard, so that there was undoubtedly a condition of true plethora present. It is almost certain that in all chronic cardiac cases, whenever the erythrocyte count per cubic millimetre of blood is above the normal (relative polycythæmia), the total volume of blood in the whole body is likewise excessive. This is indeed what one would expect from the congested appearance in some patients of the face, lips, tongue, and retinæ (as seen by ophthalmoscopic examination) during life, and the hyperæmic condition of their viscera as seen at post-mortem examinations. It is also probable that the total blood volume may be excessive in many chronic cardiac cases even when a blood count shows absence of relative polycythæmia.

E. Weil[21] of Paris was the first to show that the secondary polycythæmia of heart disease is associated with an actual erythroblastic reaction in the bone marrow. In 1901, in post-mortem examinations on two children with congenital stenosis of the pulmonary orifice of the heart and chronic cyanosis, he found that there was red transformation of the bone marrow, microscopic sections of which showed that all traces of the normal fatty tissue had disappeared. His results have been confirmed by Mackey and others. In 1907 L. G. J. Mackey[22] examined microscopic sections made by J. Miller from the bone marrow of a case similar to those of Weil, and obtained similar results to Weil. The polycythæmia of congenital heart disease and chronic cardiac insufficiency is therefore due to great erythroblastic activity of the bone marrow, and represents a true hyperplasia of the erythrocytes and of the erythrocyte-forming tissues of the body, which is, in fact, analogous to the myocardial hypertrophy found in conditions throwing abnormal work on the whole or a portion of the musculature of the heart.

Orthostatic albuminuria seems not to have been observed in most cases of congenital heart disease, but it was very marked in the present patient[23] and in a young man, aged 22 years, whose case was previously described by one of us.[24] We should expect to find it in other cases of congenital heart disease, if accompanied by chronic cyanosis and extreme polycythæmia, and in this connexion, as suggested to us by Dr. A. E. Garrod, the calcium content of the blood might be estimated in similar future cases.

It is worth while drawing attention to the fact that the patient whose case we are now considering takes a good deal of open-air exercise, and, though it may tend temporarily to increase his cyanosis, he declares that he feels much better with exercise than without it. He thinks that an active industrious life suits him better than a lazy one.

The secondary polycythæmia in cases of congenital heart disease is seldom, if ever, rivalled in degree by the secondary polycythæmia which sometimes, as is well known, occurs in chronic acquired valvular affections (of the mitral valve) and in adherent pericardium. It is more nearly rivalled by the marked secondary polycythæmia occasionally associated with late stages of pulmonary emphysema, chronic bronchitis, asthma, old bilateral pleuritic adhesion, chronic interstitial pneumonia, and pulmonary fibrosis. The polycythæmia in all such cases differs from the polycythæmia (possibly of primary myelogenous origin) associated with chronic splenomegaly, which has been termed "erythræmia,"[25] by the not infrequent absence of real cyanosis in erythræmia, especially in its early stages.

What prognostic significance can be attached to the secondary polycythæmia in cardiac cases? In answer to this question we need only repeat what one of us has previously written. Just as hypertrophy of the walls of the heart is useful in so far as it compensates for mechanical defects in the valvular apparatus, so also is polycythæmia useful in so far as it compensates for difficulties in the proper oxygenation of the blood and tissues of the body; but just as in cardiac valvular disease great hypertrophy of the heart indicates some grave defect in the valvular mechanism, so also an extreme increase in the number of erythrocytes in the blood points to there being great impairment of the normal process of oxygenation of the body.

[21] E. Weil: Comptes Rendus de la Société de Biologie, Paris, 1901, vol. liii., p. 713.
[22] L. G. J. Mackey: Birmingham Medical Review, 1907, vol. x., pp. 113, 177.
[23] The orthostatic albuminuria was apparently not a family peculiarity.
[24] F. P. Weber: A Case of Congenital Heart Disease, with Extreme Secondary Polycythæmia and Orthostatic Albuminuria, Edinburgh Medical Journal, 1909, New Series, vol. ii., p. 18
[25] Vide F. P. Weber, Quarterly Journal of Medicine, loc. cit.

# THE INTRAVENOUS METHOD OF TREATMENT OF SYPHILIS WITH SALVARSAN ("606"), WITH A CONVENIENT APPARATUS FOR SUCH ADMINISTRATION.

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Professor Ehrlich now advises that "606," which is on the market under the trade name of "salvarsan," should be administered by the intravenous method and that two doses should be given at an interval of three weeks. For this purpose a syringe has been devised, and as the volume is considerable (250–300 c.c.) the nozzle is provided with two-way taps, so that after one syringeful has been injected the syringe can be refilled without withdrawing the needle from the vein. Anyone, however, with experience of venipuncture will realise that it is difficult to manipulate the taps and the plunger without some slight movement of the needle which may lacerate the vein.

FIG. 2.

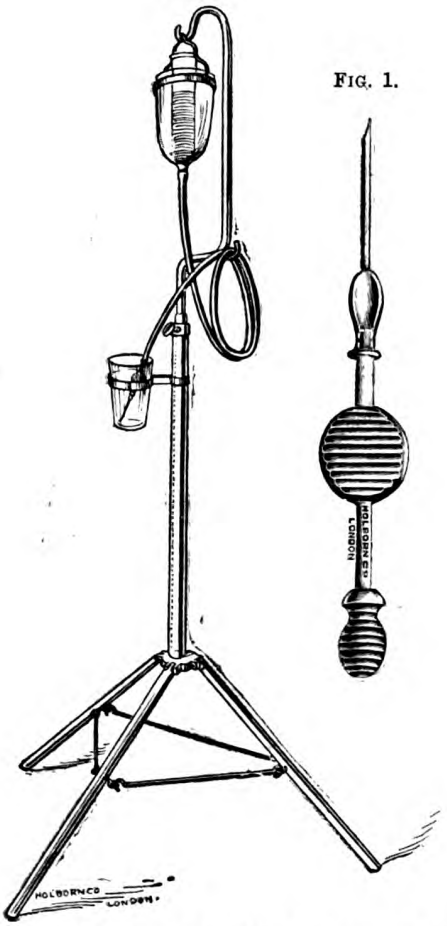


FIG. 1.




In December last, by the kindness and courtesy of Major G. W. Gibbard, R.A.M.C., and Captain L. W. Harrison, R.A.M.C., of the Military Hospital, Rochester-row, I was accorded the privilege of watching the technique there employed for the intravenous administration of "606."[1] I understand that as a matter of routine all suitable cases of syphilis are now treated by "606" given by the venous

[1] West London Medical Journal, January, 1911, p. 46.

route at this hospital. The technique that follows is that used by the officers mentioned, with the exception that I use my own needle-holder, described in THE LANCET of May 1st, 1909, p. 1248, which ensures complete control of the point of the needle (Fig. 1). I have used this holder, which was made for me by Mr. J. H. Montague of 69, New Bond-street, London, W., for over 1500 venipunctures, and find that it greatly facilitates this little operation, especially in cases where the vein is not large or prominent. I have also added a water-jacket to surround the small irrigator containing the "606" solution, as I found that the small volume of solution cooled too rapidly. The Holborn Surgical Instrument Company have also made me a convenient adjustable stand from which to hang the irrigator (Fig. 2). The apparatus consists of a container surrounded by a hot-water jacket, a rubber tube about 4 feet long which connects the container and the needle-holder, and a stout needle 1½ inches long and of the calibre of a fine exploring needle. About 3 inches from the needle-holder a piece of glass tubing is let in to act as a window. The container, tube, and needle-holder are connected up and sterilised before use. The rate of flow is regulated by altering the height of the container, and a clip is applied to the rubber tube about a foot from the needle-holder.

The patient should be in bed, with the arm selected for the infusion supported on a pillow. Having sterilised in the autoclave a glass measure graduated to 300 c.c., and also a glass stirring rod, 30 c.c. of sterilised distilled water is poured into the measure. The end of the phial containing the salvarsan is now broken off, and the contents are *slowly* shaken into the distilled water, which is briskly stirred. A clear yellow acid solution results. This is made up to a volume of 100 c.c. with sterilised normal saline solution (0·9 per cent.). Sterilised normal sodium solution is now added slowly in the proportion of 0·7 c.c. to each 0·1 gramme of salvarsan——viz., 4·2 c.c. of normal sodium hydrate to the solution containing 0·6 gramme of salvarsan. The sodium hydrate should be added till the yellow precipitate which is first produced is just re-dissolved. A slight excess of alkali, however, is of no matter. More normal saline solution is now added to bring the volume up to 300 c.c. All the solutions employed should be at a temperature of about 100° F., and the glass measure is placed in a basin containing water at a temperature of 110°. The water jacket surrounding the irrigator is also filled with water at a temperature of 110°. The irrigator is now filled with warm saline solution which is run through till all air bubbles have been got rid of. The clip is now applied and the needle-holder put into the sterilised tumbler containing some warm sterile saline solution. The skin over the most prominent vein at the bend of the elbow is sterilised by dabbing it with a saturated solution of iodine in chloroform and a bandage applied firmly round the upper arm in order to distend the vein. The needle having been boiled is now adjusted to the holder and a little saline solution run through. The irrigator is now lowered and the needle plunged into the vein and the clip removed. If the needle is in the vein the blood will run into the tube and be seen at the "window." The bandage is now removed and the irrigator raised and the required quantity of the solution of salvarsan is poured in. The solution should only be allowed to run in *slowly* so as to be well diluted by the blood-stream, and it should take about ten minutes to run in all the solution. 0·6 gramme of salvarsan having been diluted up to 300 c.c., 50 c.c. of the diluted fluid contains 0·1 gramme of salvarsan. 0·5 gramme is the usual dose for a healthy male adult and 0·4 gramme for a woman. About 100 c.c. of normal saline solution should be poured into the irrigator when the salvarsan solution has almost run out, so that the needle may be washed free of salvarsan before being withdrawn. Otherwise some salvarsan may escape along the needle track and produce some local inflammation and possibly phlebitis and thrombosis.

The preparation of the patient is of great importance, as if the infusion is given with a full stomach and high blood pressure an alarming condition of feeble rapid pulse and collapse may supervene, which, however, usually passes off when vomiting occurs. Rigors are not uncommon, and may occur from one to two hours after the infusion. The patient sometimes complains of a throbbing in the head and a metallic taste in the mouth and a sense of fulness in the throat. I prepare the patient by giving a pill the night before and a brisk saline purge in the morning of the infusion. I permit only a light breakfast with but little fluid, and allow no food or drink for four hours before the infusion. Since I have adopted these precautions I have recorded no alarming symptoms. The temperature generally becomes raised a few hours after the infusion, and although the rise is usually only a slight one of about a degree, occasionally it reaches 103° or even higher. The temperature usually returns to normal in 24 hours; in one or two cases it has lasted for several days.

There seems to be little doubt that the arsenic is almost entirely eliminated in a week, and therefore there can be little danger in giving a second dose even as early as a fortnight after the first. The patient should be kept in bed for at least three days or for 24 hours after the temperature becomes normal.

The practitioner must be on the look out for phlebitis and thrombosis, although this is a very rare sequela, and if it occurs the arm must be kept absolutely at rest. The Wassermann reaction should be determined before the first infusion and a month after the second infusion.

Upper Berkeley-street, W.

# "NODULAR" FIBROMYOSITIS, AN EVERY-DAY AFFECTION,

## AND ITS IDENTITY WITH SO-CALLED CHRONIC MUSCULAR RHEUMATISM.[1]

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IN bringing under notice the affection to which I have given the provisional title of "nodular fibromyositis," I cannot lay claim to any particular originality, for this condition has been recognised and the principles of its efficient treatment laid down for upwards of a hundred years, and descriptions have from time to time appeared in the literature. Dr. Balfour in 1816 wrote a very complete one, and at infrequent intervals other authors made contributions to the subject; one of major importance was by Uno Helleday, a Swede, in 1876. Since then it has been systematically studied on the clinical side, its pathology investigated, and its treatment established beyond doubt by a large number of observers. The Scandinavian school has led the way. In Sweden for the last 35 years the condition has occupied the important and prominent place in medical practice which it deserves, and to this fact the incomparably superior training and efficiency of the Scandinavian school of massage undoubtedly owe their origin. The German school has also furnished many investigators in this subject. The English literature, and I believe also the French, is almost barren of any adequate description. In 1904 Dr. R. Stockman of Glasgow wrote an excellent paper in the *Edinburgh Medical Journal:* to his monograph I am under great obligation. So much for a brief historical survey of what I consider to be the most neglected subject in the English literature of to-day.

Although I am specially concerned to describe a nodular or infiltrated condition of the fibro-muscular tissues and the symptoms to which this may give rise, laying special stress on the more marked and severe cases and on the more unusual examples which not infrequently lead to diagnostic errors, yet over and above this I have a very important thesis to maintain. It is this: That chronic muscular rheumatism, or to quote some of its synonyms—rheumatism, muscular and tendinous rheumatism, myalgia, muscular fibrositis, &c.—is a pathological condition, *the essential morbid process of which is an inflammatory exudation into the fibrous tissues in almost any situation in which fibrous tissue is found.* This exudate leads to swelling and thickening of very variable character and degree: it may be slight and impalpable; severe and definitely tumour-forming; acute and transient; chronic, and eventuating in hard fibrous lumps which resist all efforts at dispersal by the ordinary means at our disposal; but under all circumstances it tends to be painful.

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on Nov. 25th, 1910.

To consider, first, the *nature* of the exudate which results in these thickenings, indurations, or actual nodules. The most probable view is that it is a *focal inflammatory hyperplasia of the connective tissue.* This focal hyperplasia is the result either of direct microbic action or, more probably, of toxins conveyed by the blood-stream, and clinical observations abundantly support the view that these results can be brought about by more than one toxic condition. The inflammatory foci may be limited in number, even to a single area, or they may be scattered widely through the fibro-muscular structures of the body. To quote Stockman:—

> The irritant may give rise to proliferation of the fibrous tissue with serous exudation into the inflamed circumscribed parts, which are tender, painful on pressure, and if large can be easily felt or seen in the muscles and fasciæ and on the sternum or other thinly covered bones. At first they may resolve readily enough, leaving no apparent traces behind, but they tend to return on slight provocation, and if much new fibrous tissue forms in the affected area they become permanent and often increase to a considerable size, or spread out over a large area. The older and more fibrous they become the less tendency they have to disappear spontaneously or on treatment. These indurations assume various forms. Sometimes, especially in the lumbar region or in the fascia lata, large portions of the aponeurosis or subcutaneous fibrous tissue become more or less uniformly thickened, with perhaps more prominent indurations at certain points. In severe cases this gives the skin a hard, inelastic, and brawny feel. More commonly the fibrous indurations are more defined and circumscribed, varying in size from a small shot or split pea to an almond, or even half a walnut. The larger ones may be rounded or flattened, the smaller ones often feel like beaded chains along the fibrous edge of a muscle or aponeurosis. Very frequently the thickening takes the form of a strand or cord running through the fascia or subcutaneous fat. Sometimes they are deeply placed in the intermuscular septa, sometimes quite superficially in the subcutaneous tissue, in which case they may adhere to and often slightly pucker the skin. They can often be felt also as small tender projections on the surface of the ribs and other thinly covered bones.

The more recent or more diffuse exudates give rise, when palpated, to a sensation of lumpiness in an affected muscle, or the whole muscle may be brawny to the touch.

First, as to the term we apply to the local thickening; it may be swelling, induration, or infiltration. All these terms have been used, and only in the more advanced cases is use of the term "nodular" justified. "Induration" is perhaps the best general term and has the advantage of not committing one to a particular pathological view, for the view that an inflammatory fibrous hyperplasia is the underlying lesion has not been universally accepted. Moreover, I do not wish to defend very strongly the term "fibro-myositis," because the condition is probably not really a muscular one at all. "Fibrositis" is a better term. "Myositis" is useful, however, because it directs attention to the frequent involvement of the muscles, even though such involvement be secondary, and, again, because it has been largely used in this connexion, as also the terms "myositides" or "myitides," preferred by the Germans.

My position, therefore, may be summarised thus: all chronic rheumatism is essentially an exudative hyperplasia of fibrous tissue, probably inflammatory in origin, and the clinical characters of which depend upon the amount, persistence, and anatomical situation of such inflammatory exudate. It has a preference for certain fibrous areas, the frequency of ordinary lumbago testifying to this. The varying situation of such inflammatory exudate is well illustrated by the fact that most cases of sciatica are due either to pressure on the nerve by a nodule or to infiltration into its sheath. Many cases of supraorbital neuralgia are similarly explained.

The one almost constant symptom which results from this fibrositis is pain. These infiltrations are painful when they are pressed upon, and if vigorously rubbed they swell up and the pain is greatly increased. To quote Stockman once more:—

> Under the action of certain irritants (cold, damp, meteorological changes, muscular exertion, indigestion, and unknown toxins) these indurations are apt to swell and become tenser, and then they give rise to stiffness, aching, or acute pain. The local tension probably exerts pressure on the filaments of sensory nerves; hence these symptoms. Sudden movement of muscles, by increasing the tension or by exerting pressure on the swollen tissue, often greatly aggravates the pain or causes it to shoot excruciatingly.

This local pain on pressure is practically the diagnostic feature of these cases. If a patient presents himself with any of the ordinary manifestations of chronic rheumatism, as a lumbago, sciatica, pleurodynia, or a cephalalgia, and I would add (having abundantly confirmed it from my own experience) with any obscure myalgic or neuralgic pain in any part of the body, a careful investigation should be made of the fibro-muscular tissues of the affected areas. In the more recent diffuse cases there is general tenderness of these tissues, and one may not be able to feel anything which one could definitely assert to be a palpable thickening. But more usually, either with or without such general tenderness, one will find areas which are definitely, often exquisitely, tender to touch. All that is needed is a careful digital exploration of the structures involved, asking the patient to let you know when you are pressing upon a painful spot, though in many cases such a request is far from necessary. It is astonishing how sharply many of the painful areas can be localised, though, of course, this is not always the case.

Having localised the painful areas, the next point is to determine whether they are definitely thickened, either as doughy swellings, strands or septa, or small beads or hard nodules; all variations occur. The detection of indurations is where the sceptics come in, and with a certain measure of justification. The slighter degrees require much practice for their detection, though no one can mistake a really nodular case. Patients sometimes discover their own nodules, and in an extreme case, which I shall presently describe, the patient was the first to draw attention to them as the source of the pain and described them as "glands." But there are two ways of examining a case. To do it properly you must have the patient symmetrically disposed, and the muscles to be explored must be in a state of relaxation. You must carefully and slowly go over the affected areas, using both light and, if necessary, deep pressure (if this can be borne), comparing exactly corresponding areas of the muscles and fibrous tissues on each side of the body. It aids greatly if the skin be smeared with some lubricant, the fingers gliding more easily over the surface. The wrong method is obviously that which means a perfunctory and asymmetrical palpation of the muscles; this prevents one drawing any reliable conclusions.

If the examination is made in the way I have described, after a little practice in detecting the more obscure forms of infiltration one will be surprised at the number of cases yielding positive findings. Two points must not be forgotten. If the exudation is slight, if it is recent, if it is diffuse, or if it is deep-seated and difficult to reach, one cannot expect a positive result. One localises the pain but one cannot convince one's self of the actual thickening. Again, if one finds a painful and thickened area one cannot in most cases swear to it as a thickening without the most careful comparison with the corresponding region on the opposite side, unless, of course, it is particularly well marked and approximately nodular in character.

A few years ago I did not believe in these infiltrations, though their existence was asserted by competent observers. It simply was not in English literature, therefore one disregarded it. But one or two striking cases led me to think that the teaching of other schools might be worthy of investigation. I then began to study a few of the more obvious cases which came in my way. The positive nature of my findings, and the success of treatment based thereon, led me to more and more detailed investigation of these cases, many of which are labelled anything but chronic rheumatism. As a result of the experience which I have now acquired, it is my absolute conviction that this is the real nature of chronic rheumatism, and that all cases form a connected group, whether slight and negative to palpation at the one end of the series, or abounding in nodules of almost gristly hardness at the other. If this be so I think everyone will agree that my sub-title, "an everyday affection," is justified.

Having now, I hope, made the general nature of these cases clear, I can proceed to cite some actual cases, and in doing so I wish to draw attention especially to the following points: (1) the extreme development as to size and hardness of the more severe indurations; (2) the extreme character of the pain that may result from indurations of every kind; and (3) the secondary nervous phenomena, or states of acute or chronic invalidism which may supervene as results of the extreme or persistent pain. It is difficult to realise, short of actual experience, the severity of some of the cases. A further point, and one upon which I wish to lay the greatest possible stress, is the extremely wide range of the painful manifestations, and the serious, yet at the same time avoidable, diagnostic errors for which this is responsible. But really this is strictly deducible from my foregoing description.

I have said that the fibro-muscular apparatus in practically any situation of the body may be affected, in slight or serious degree, in one area or in many. Certain situations are specially favoured. Implication of the tissues of the lumbar

region causes the lumbago familiar to us all, not only in our patients, but more regrettably and not infrequently in our own persons. One nodule is sufficient to cause an extremely painful and persistent lumbago. This is a clinical fact of the greatest importance. The better-known situations of muscular rheumatism I need not enumerate, but some special situations must be mentioned. A very common but much overlooked group of cases is that in which headache is the prominent symptom, the so-called myalgic or indurative headache. This is due to indurations in the retrocollic muscles, which frequently cause a direct or reflex headache, or to indurations in the temporal or other cranial aponeuroses. The abdominal muscles are not infrequently affected; a single nodule in the abdominal area may give rise to either continuous pain or to the most excruciating paroxysms of pain. Such cases have been wrongly diagnosed as gastric ulcer, appendicitis, biliary and renal colic, and a host of other things. Many negative laparotomies undoubtedly owe their undertaking to a failure to recognise chronic rheumatism.

The two points one has to keep in mind are the almost infinite possibilities as to localisation and the variations in the character of the pain owing to the local intensity of the process. In regard to the almost constant symptom of pain I have mainly laid stress up to now upon its local character, occurring with or without pressure, and upon the general stiffness and aching in the affected areas with which you are all familiar, and also with the acute twinges which occur on sudden exertion. But there are two further points which must never be forgotten—the frequency of the radiation of the pain and of its occurrence in paroxysms, such paroxysms being often of the most excruciating and agonising character. These phenomena are probably due to the involvement of nerves and nerve-endings by the indurations, and in really marked and persistent cases a cure is only possible by excision of the offending nodule. As may be expected, pain, from its persistence and its severity, may break down the resisting power of the patient, and many of the so-called chronic neurasthenics owe their myalgic invalidism to this cause. This is no exaggeration. Paroxysmal pain is always liable to be complicated by secondary and reflex phenomena, of which vomiting is a very notable example.

If now this general description be fully comprehended one could almost describe in advance the varieties of case which one would expect to meet. I do not desire to burden this communication with descriptions of many cases or of any at great length, but those which I now quote illustrate very well both the severity and the protean character of the manifestations of this disease. The following is the most severe case that I have so far seen.

CASE 1.—The patient was an unmarried lady, aged 26 years, whom I first saw in consultation with Dr. O. L. Scarborough of Leeds. Very briefly the history is as follows. She was a healthy and vigorous girl when, about four years before the onset of this trouble, she fractured her coccyx, which was removed by Mr. H. Littlewood. She then suffered from severe indigestion and constipation, and some two years later developed suppurative appendicitis, which was successfully operated upon by the same surgeon. Her indigestion was better, but her health was not good; she had much trouble with her teeth, and soon after the operation began to suffer from pain which may be shortly described as a combination of lumbago and sciatica. This increased in severity, being both continuous at times and paroxysmal. Adhesions were suspected, sought for, and not discovered. About 18 months before I saw her she felt in her own back what she described as little lumps or "glands," which were very painful when pressed upon, and from which the pain appeared to take origin. She underwent various treatments—electrical, thermal, and rubbing—at hydropathic establishments and at home, but got worse. Some six months previous to my seeing her the pain began to take on the most severe paroxysmal character. She had crises of pain which were agonising to her, and which, it is no exaggeration to say, were almost torturing to the onlooker. She became practically never free from pain, was bedridden, almost helpless, and a nervous wreck, with, it is not surprising to record, a considerable train of secondary so-called neurotic phenomena. Her resisting power when I saw her was almost *nil*.

Upon examination I found what had, indeed, been found by her medical man, but which he scarcely thought could account for the extreme severity of the pain—numerous and extensive areas of infiltration in the muscles of the lumbar, gluteal, and sciatic regions. There was no doubt about them. If the pain and the patient would have permitted one could have rolled the more superficial ones beneath one's finger. A large sheet of skin over the right gluteus was markedly infiltrated. One induration at the lower border of the gluteal muscle was so massive and so painful that it had been explored with a needle in the hope of reaching some deep-seated suppuration. I immediately put her under a course of special massage, and later gymnastics; and this treatment, commenced on Sept. 9th, 1910, has at the moment of writing resulted in a progressive improvement, so much so that a helpless bedridden invalid, scarcely able to move, suffering the most excruciating pain, is shortly going abroad.

This result has been accomplished in a period of 11 weeks despite many difficulties, such as the elimination of necessary morphia, and the correction of the most marked secondary neuroses. A serious degree of secondary lateral curvature had occurred, and the treatment is still going on, and will have to do for many months yet before a final cure is accomplished, but the change in the patient's condition was nothing short of dramatic.

The next case demonstrates the serious degree of chronic invalidism which may result; the trouble had a different localisation, and I was able to achieve a great deal of benefit from treatment.

CASE 2.—The patient was a widow aged 52 years. She had some general dyspepsia and constipation. She had been a myalgic invalid for about six years when I saw her on Jan. 1st, 1910, but for the last two years had been so bad that she had been unable to earn her living and had been intermittently bedridden, and was in a truly miserable condition. She complained of pain of varying character and intensity in and about the left shoulder, and radiating thence. Her history was very clear, however, about the pain and stiffness always starting in this neighbourhood. She had pain elsewhere, in the lower lumbar region and in the gluteal muscles. The pain was always brought on or aggravated by movement. It occurred in attacks which would last perhaps a fortnight and then leave an interval of some weeks reasonably free from pain. The shoulder muscles—that is, the spinati, the deltoid, &c.—contained numerous infiltrations, easily identifiable as they were almost nodular in character; I could demonstrate them to my students with ease. These were extremely painful to pressure. Massage and exercises at once improved her. In a few weeks she left the hospital a different woman and returned to her work, which she has since satisfactorily performed. I wrote to her this week to come up for re-examination and found that her shoulder pain had not returned. We did not treat the lumbar region and she now has some pain there; on examination there were numerous doughy infiltrations of the erector spinæ muscles; I have no doubt we shall achieve a permanent cure by treating this area as well.

A further example of the generalised nature of this trouble was furnished by the next case:—

CASE 3.—The patient, aged about 30 years, the son of a medical man, had suffered at frequent intervals since childhood from rheumatic pain, principally in the muscles and fibrous tissues of the back; from time to time exacerbations occurred in which he had myalgias almost everywhere. I saw him first about four years ago, and advised treatment by massage, &c. He was due for foreign service, however, and did not carry out this treatment, because on the West Coast of Africa it was difficult to do so, and the pain, though continuous, was not very severe. I saw him on his return three years later, when his general health was much impaired by malaria, &c. He was then becoming a chronic rheumatic, with serious danger of permanent crippling, and faced with the imminent probability of having to give up the service. His lumbar muscles and aponeuroses presented in abundance the usual painful infiltrations. I put the serious aspect of the case very fully before him and pointed out the necessity for a prolonged course of treatment. Being anxious to have my view confirmed in this particular instance I sent him to Dr. Stockman of Glasgow, who fully concurred with the diagnosis and treatment. Under energetic massage and exercises the patient rapidly improved, but before complete cure could be effected (for the case was a very old-standing one) he returned to foreign service. He had, however, learned the routine of the treatment and promised to have it continued for a considerable time. The amount of improvement in this case far exceeded our expectation in the all too short time at our disposal.

The next case is an excellent example of chronic invalidism brought about by a serious and general infiltrative condition of the abdominal muscles, and to a less extent of the muscles of the back.

CASE 4.—The patient, a woman, aged 36 years, was sent to me by Dr. J. W. Hopkins in June, 1909. She was a chronic dyspeptic. She had suffered from an aggravation of the dyspepsia and epigastric pain for nine months before I saw her; her health was considerably impaired and she had lost much weight. Her medical man feared organic disease of the stomach. On examination I found a good deal of general tenderness in the abdominal wall, but could not identify any definite infiltrative areas. As there was no doubt about the dyspeptic symptoms I thought a trial of treatment on this line was indicated. This was strictly carried out, and though the dyspepsia improved, the pain on the whole increased, and her condition became a miserable one. She was sent to me this week again, and then the explanation of things was abundantly clear. Her pain was caused or aggravated by any movement or strain and was relieved by rest; it was not definitely related to food, and was practically continuous, with neuralgic paroxysms from time to time. All the abdominal muscles and fibrous tissues were tender, and there were numerous areas which were exquisitely sensitive to pressure, and any number of infiltrations and irregularities and small pea-sized nodules could be made out.

I quote this case, not because I am yet able to say what treatment can do, but because it is a typical example of the abdominal type of chronic rheumatism, and one which I feel sure will be quite cleared up by massage if that is persevered with for a sufficient length of time.

The next case is an illustration of one single area of fibrositis giving rise to a diagnosis of cardiac disease.

CASE 5.—The patient was an able-bodied policeman, about 26 years of age, sent to me by Dr. G. W. Middlemiss of Settle. Two years before he had had influenza with severe pain, apparently cardiac. This pain persisted up to the time that I saw him. There had been no cardiac lesion noted at any time, and his medical man had persistently refused to diagnose cardiac mischief, though this had been done by another

medical man and he had been told that he was unfit for his duties as a policeman. I found that the pain could be definitely localised to one tender area, involving the upper attachment of the rectus abdominis to the costal cartilages. This was sharply painful, and pressure on it set up the diffuse pain radiating to the cardiac area of which he had complained all through. I showed him how firm massage should be given, and there being but a single area I felt that massage might in this case be performed at home. This was done. Three weeks later I wrote to his doctor and quote his reply. He says: "I have looked up the policeman and he states that he has not felt so well for two years (i.e., since before his first attack of influenza in November, 1908) as he does now. He started the massage as soon as he returned from seeing you, and to this alone he ascribes the great improvement and diminution of pain, for he has neither taken nor done anything else."

Another striking case of localised pain is the following:—

CASE 6.—A medical man, aged 35 years, had suffered for two or three years from attacks of pain in the upper part of the right chest. This would start as a pain localised approximately in the situation of the second right costal cartilage. It would remain localised for some days and would then become more diffuse, spreading over the front of the chest, causing pain, not particularly severe, with every inspiration. This would last for a few days longer and would gradually disappear, the attacks lasting for about 7 to 14 days. Upon examination this pain could be absolutely localised to a tender spot in the upper border of the second right costal cartilage at its junction with the rib, where there was a slight thickening to be made out. Massage of this area quickly caused it to swell up and become exquisitely tender, but a few days' rubbing effected the dispersal of the swelling and a complete cessation of the pain. So far there has been no recurrence.

The next case is a very good example of the mimicry of appendicitis.

CASE 7.—The patient, an anæmic, delicate lad, aged 13 years, for some years had had recurring abdominal pains with sickness, of uncertain origin. About five months ago he had more or less pain in the neighbourhood of the pubic symphysis and sharp pain throughout micturition. There was tenderness in this area and in the right iliac fossa. By X rays the presence of calculus was eliminated with practical certainty, but a dark shadow suggested that there was possibly a calcareous gland in the right iliac fossa, but entire reliance could not be placed on a single observation of this kind. A few days ago I was asked to see him. His medical man said that his general health had greatly improved, but the attacks of pain had been more severe, more definitely localised to the right iliac and pubic regions, where there was great tenderness on pressure, and he feared a chronic appendicitis and the necessity for an operation. The one puzzling feature, however, was that the pain was felt on pressure over the attachment of the rectus to the symphysis, extending well to the left of the middle line. I found on examination that the pain was entirely superficial—that is to say, in the abdominal wall and localised in and near the right iliac fossa. The lower insertion of the rectus abdominis was markedly tender throughout its length. Muscular and fibrous thickenings could be felt, and here and there was a sharply defined pea-sized nodule at a point of maximum tenderness. The condition extended more than half way up the rectus. Deep pressure in the right iliac fossa, of course, also produced pain by dragging on the tendinous structures attached to the symphysis. This case is too recent to be able to report any result of treatment which has been commenced, but I have no doubt but that we shall cure him in a few weeks.[2]

I commend this and the other abdominal cases of fibrositis very specially to the notice of the surgeons, and I think one is permitted to wonder whether some cases of "appendix trouble" that eventuate in operation, and in which the appendix, when removed, presents practically a normal appearance, may not be of this nature.

The following case is a very excellent example of a shoulder type:—

CASE 8.—The patient was a woman, about 40 years of age, who was sent to me by Dr. J. O. Ward of Ferrybridge. For over a year she had had very troublesome pain in the shoulder and down the left arm. It had seemed to take its onset in what was described as an attack of bad neuralgia in the eyes, back of the head and back of the neck, and shoulders, following influenza. This undoubtedly was the acute onset of a more diffuse form of the trouble. The pain subsequently settled down to the muscles about the left shoulder. It came on in attacks in which there were both continuous pain and sharp neuralgic pain down the arm. The persistence and paroxysmal character of this had been so severe as to raise the suggestion of some organic nerve trouble. Upon examination very definite areas of tenderness and infiltration of the muscle in elongated bands and septa could be made out in the deltoid, biceps, and spinatus muscles. Eight days after the commencement of special massage there was a striking improvement. For the first few days the pain was, of course, aggravated, then it was greatly relieved, and she was able to use her arm in a way which had not been possible for months. The case, of course, is still under treatment.[3]

I must content myself with one example out of many of the cephalalgic type of case, which is, I believe, of much more frequent occurrence than is supposed. In this group the indurations occur in the retrocollic muscles, most commonly in the trapezius and sterno-mastoid, and not infrequently in the temporal aponeuroses. They give rise to headache of the most persistent and recurrent character, and unless this condition be remembered in investigating any cases of chronic headache or cephalalgia, I have no hesitation in saying that many of the cases will be missed and the patient's sufferings pass unrelieved.

CASE 9.—The patient was a man, aged 26 years, sent to me by Dr Scarborough. For ten years he had suffered from severe periodic headache which was increasing and rendering him unfit for his duties. No definite cause had been discovered and no treatment had been of any avail. The history was very striking, in that the attacks of headache always started by painful stiffness in the retrocollic muscles. This is a very characteristic feature in these cases and is almost diagnostic. The trapezius muscle contained numerous more or less well-defined infiltrations. A few weeks' massage cured him. Some months afterwards he greeted me in a tramcar with the most effusive thanks, saying that I had transformed his existence by freeing him from pain.

One is sorely tempted to go on quoting cases, each of which presents some different and specially interesting feature; but I have confined myself to my own recent experience, to the exclusion of remarkable cases to be found in the literature.

With regard to the causation of chronic rheumatism, the limits of space will not permit me to go into detail. It is convenient, however, to consider the etiology under two different headings: (1) as to the original causes of the local fibrous thickenings and nodules; and (2) the causes of the attacks of muscular or neuralgic rheumatism when once these indurations are established.

*Original causes.*—By many rheumatism is supposed to be one. That true rheumatism does cause fibrous nodules is familiar to you all, and the remarkable and rapid way in which they disappear is a sufficient answer to those who cavil at the curability of the indurations and nodules of chronic fibrositis. Personally, however, I am unable to accept the view that chronic rheumatism, as ordinarily met with, is a sequel of true original rheumatic fever, or, indeed, that it occurs with any frequency in genuine rheumatic subjects. Influenza is responsible for a certain number of the cases; a fact of clinical importance. Exposure to cold and wet is very frequently responsible. My own feeling is that disturbances of the gastro-intestinal tract, such as oral sepsis, flatulent dyspepsia, chronic constipation, &c., all conditions leading to the production and absorption of toxins, play a somewhat important etiological rôle. Trauma certainly explains some cases, either in the form of frequent slight traumata from over-exertion, as in athletes or labourers, especially when coupled with exposure, or in the form of local injury. This undoubtedly gives rise to the condition, and is a point which is well worth bearing in mind in regard to certain cases occurring under the Workmen's Compensation Act. I quite admit that the majority of the alleged persistent pains and neuralgias which occur in these cases (the painful back and spine being common examples) come very near to deliberate malingering. On the other hand, I am quite certain that some of the cases are genuine examples of the condition we are discussing, and I have been able by suitable treatment to clear up such local pain. An opinion is, perhaps, rather widely held that chronic fibrositic rheumatism is a disease of middle and later life, but this is not so. It is very common in adolescence and in early middle life.

*The exciting causes of pain after the indurations have once formed.*—These are well known to you all and include various meteorological conditions, cold and damp being most prominent. Violent muscular strain is another frequent cause. Acute indigestion, especially resulting from dietetic indiscretions in which champagne and port frequently play a part, is especially liable to precipitate an attack. Many cases also supervene upon an ordinary tonsillitis or pharyngitis, possibly due to septic absorption from this source.

*Treatment.*—Many of the cases are of an acute type, with general malaise and widespread myalgia. These frequently clear up but may settle down into a more chronic condition. There may be a slight degree of temperature. General treatment meted out to a feverish attack, with the employment of the ordinary pain-relieving drugs, is generally sufficient to effect a cure. If the pain is at all localised a single thorough application of massage may result in cure in this early stage.

*The treatment of the chronic cases.—General treatment.*—The removal of any discoverable cause, such as gastro-intestinal irregularities, must be undertaken, and will not only help towards a cure, but will tend to prevent recurrences. During the more acute exacerbations drugs such as sodium salicylate, antipyrin, or pyramidon, and the various means described in the acute attack produce a certain measure of relief, but recurrence is liable to occur indefinitely. To obtain a permanent cure and a complete relief from the recurrent attacks it is absolutely necessary

[2] Since writing the above I am able to report that the pain entirely cleared up in about two weeks' massage, and has so far not returned.

[3] The patient is now perfectly well.

that local treatment should be adopted with a view to obtain a complete dispersal of the indurations.

*Local treatment.*—There are, of course, palliative forms of local treatment. Counter-irritation by blistering or cautery produces relief. Nothing, perhaps, is so efficient as the rubbing in of oil of gaultheria. But these measures are at best temporary; mechanical treatment must be adopted to secure a permanent dispersal. The most important of the forms are massage and systematic exercises. Acupuncture is undoubtedly of great use in relieving the pain, but in my experience does not produce complete dispersal of the infiltrations. Injection of chromic acid into the nodules has its advocates, and is undoubtedly useful, but I think it is a less convenient form of treatment than massage and may be reserved for the more refractory cases. In cases of fibrous nodules which will not yield to simpler measures, and which by implicating or pressing upon nerves cause persistent pain, excision is not only advisable but necessary, the only caution being that the nodule must be very definitely localised beforehand.

*Massage.*—The form of treatment which for over a century has been almost uniformly given first place is some form of massage, and exercises which are designed to replace massage for inaccessible areas and wide tracts and sheets of fibrous tissue. In recent cases from three to ten days will cause dispersal, in more chronic cases weeks or months may be required, and if the indurations have become too fibrous a cure short of excision cannot be expected. There is scarcely any painful ailment of everyday occurrence in which the results of massage are so striking and gratifying as in the more recent cases, while, on the other hand, the cases of years' standing are liable to prove disappointing. This, of course, merely constitutes a plea for the earlier and wider recognition of the disease. Massage should at first be gentle because it causes the painful areas and infiltrations to swell up and to become still more painful and very acutely sensitive to pressure. The patient must always be warned of this, otherwise discouragement will result. In ordinary cases the painful stage is over in a few days, and during this time the patients are often with advantage confined to bed. After that they should get about as much as possible, for exercise is beneficial and tends to improve the condition. This in itself is a striking gain, for with many physicians the routine treatment of these cases is rest. Rest relieves, it is true, because the tender areas are not pulled upon or pressed, but for the most part the disease takes its own time to clear up and not infrequently fails to do so. By active treatment we not only cure but very materially shorten the duration of the disease. Instead of confining your business man with lumbago or sciatica to bed for longer or shorter periods, you can very quickly have him going about his ordinary affairs while at the same time continuing his treatment.

Just a word as to massage. The drawback is its expense, and I know no way of obviating this. Secondly, it is always desirable to employ *skilled* massage, and herein I must digress a little. Some of my patients, on being advised to have massage, inform me that that has already been tried and found to be useless. On inquiry one feels certain the reason why such massage was useless was that the tender areas were left alone because they were tender, and rubbing was directed quite uselessly to those parts which did not require it. In no instance of this kind which has come under my notice has massage failed to be of benefit when given according to my instructions. General massage is useless. The one thing useful is that the tender and infiltrated areas shall be specially marked out for treatment, and the character and vigour of the massage must be varied to suit the requirements of a particular case. I regret to say so, but I have very little confidence in the majority of English-trained masseurs. England at the present moment is flooded with a host of so-called trained rubbers. A large number of these people when calling on one claim to be certificated for massage and medical gymnastics. I daresay they are, but their certificate is obtained on from three to six months', or less, training. Apart from the fact that this results in an almost complete lack of anatomical knowledge, it does not constitute a training. The course in the Swedish school is a full two years' one, and there special attention is devoted to the very numerous class of cases with which we are dealing. To put a case of this kind under a Swedish rubber is to hand it over to an expert. The ordinary English masseurs know practically nothing about this condition (though efficient training *can* be got in England), whereas the Scandinavians not only recognise it, but almost without exception, when cases fall into their hands, treat them at once and successfully without any special directions, and often without any definite diagnosis from the medical man. A correct and nice knowledge of anatomy is of great help in securing the best and most rapid results, and that is just what distinguishes well-trained operators from the rabble of rubbers, comparatively unskilled and anatomically uneducated, which floods our own country.

In conclusion, I would ask practitioners to put the statements that I have made to the test of investigation. Most of us, I am sure, are able to recall difficult cases of persistent neuralgia which baffled elucidation and failed to respond to treatment. To say that such cases were all due to chronic rheumatism would be untrue, but a very large number of them probably were. To treat chronic rheumatism as I have suggested is to get results which are as rapid as they are certain, if the cases be taken early enough, with, naturally, much gratification to the patient. With regard to the infiltrations, which in many cases are slight and elusive, I can only say that their existence is genuine and undoubted, and the advice which one would give, both in regard to them and to cases of chronic rheumatism in general, is "Seek, and ye shall find."

*Bibliography.*—Ralph Stockman: The Causes, Pathology, and Treatment of Chronic Rheumatism, Edinburgh Medical Journal, 1904 (this paper contains a useful bibliography). Hutchison and Collier's Index of Treatment, art. Chronic Rheumatism. N. S. Jawger: Chronic "Rheumatic" Myositis (Muskelschwielen), THE LANCET, July 31st, 1909. J. Odery Symes: The Rheumatic Diseases.

Leeds.

# THE INFLUENCE OF CHLOROFORM WHEN REPEATEDLY ADMINISTERED IN SMALL DOSES.

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THE very striking results obtained when administering a single large dose of chloroform and referred to at length in a paper published in 1908 (1)* suggested to the author that a very much smaller dose might have some influence on the tissues of an animal, particularly when the small dose was repeated daily.

Sir James Crichton-Browne in 1907 (2) called attention to the habit in certain districts of taking lozenges and jujubes containing chloroform, and pointed out that samples of the lozenges contained as much as 2·9 per cent. of chloroform. He pointed out that these lozenges are taken in considerable quantity and over long periods, and he expressed the opinion that such repeated doses must be harmful. The repeated administration of small doses of this drug by the stomach to lower animals is therefore of practical as well as of scientific interest.

In the series of experiments undertaken rabbits were used throughout and the chloroform was administered as in the paper referred to above in one of three different ways—either by inhalation, by the mouth, or subcutaneously. The weight of the animal was taken day by day, and after death in many cases the weight of the heart was taken, and also the weight of the spleen. In all cases portions of liver, spleen, kidney, and heart were examined for fat and also stained and examined for degenerative changes. In the first experiments of the series the animals which were injected with $CHCl_3$ had 0·2 c.c. on two consecutive days, and two days were allowed to elapse before this procedure was repeated. This method proved so rapidly fatal that in the subsequent experiments 0·1 c.c. of $CHCl_3$ was injected daily. In the cases where the rabbits received the $CHCl_3$ in the form of an inhalation they were rapidly anæsthetised and then kept lightly anæsthetised for 15 minutes. In the first experiments of this series this was done daily, but as all the

* The parenthetical figures throughout the paper refer to the bibliography at the end.

animals used died while under the anæsthetic after a very few days the procedure was modified and the anæsthetic given on alternate days. When $CHCl_3$ was given by the stomach it was found that $CHCl_3$ water was easily tolerated by the rabbits and consequently 40 c.c. of this solution were given daily. This contained 0·08 gramme of chloroform. In some cases the rabbits lapped up the fluid without trouble, but in most instances a stomach tube was passed under light ether anæsthesia and the $CHCl_3$ water administered through this. Considering the results of the experiments throughout the series the effect of the $CHCl_3$ administered in the various ways upon the well-being of the animal may be studied by an examination of the weights from day to day. The weights are given in grammes.

TABLE I.—*Administration by Inhalation.*

| No. | Day. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1st. | 2nd. | 3rd. | 4th. | 5th. | 6th. | 7th. | 8th. | 9th. | 10th. |
| 6 | 1470 | 1450 | — | — | — | — | — | — | — | — |
| 7 | 950 | 920 | 860 | 770 | — | — | — | — | — | — |
| 8 | 2250 | 2250 | 2120 | — | — | — | — | — | — | — |
| 12 | 1850 | 1725 | 1750 | 1780 | 1880 | 1855 | 1850 | 1870 | 1855 | 1750 |
| 20 | 2300 | 2275 | 2270 | 2270 | 2250 | 2200 | 2400 | — | — | — |
| 22 | 2050 | 1975 | 1950 | 1900 | 1850 | 1850 | 1800 | 1750 | 1700 | 1625* |
| 24 | 2250 | 2170 | 2250 | 2150 | 2250 | 2250 | 2100 | 2150 | — | — |
| 26 | 1600 | 1600 | 1700 | 1750 | 1750 | 1750 | 1700 | — | — | — |
| 27 | 1650 | 1600 | 1550 | 1700 | 1750 | — | — | — | — | — |
| 30 | 2050 | 1950 | 1800 | 1670 | 1600 | — | — | — | — | — |
| 32 | 2370 | 2270 | 2260 | 2250 | 2300 | 2100 | 2050 | 1950 | 1925 | 1950† |
| 36 | 1600 | 1550 | 1550 | 1550 | 1620 | 1600 | — | — | — | — |

* Survived for one month. Weight at death 1400 grammes.
† Survived for two months. Weight at death 1840 grammes.

Where the administration took place daily the weight fell fairly rapidly. In the case of rabbit No. 7 the weight had fallen nearly 200 grammes in four days. Where the administration was upon alternate days there was in most cases but little change. The daily rise or fall was similar to what was observed in control rabbits. In a few cases, however, a marked fall in weight took place—e.g., rabbits Nos. 22, 30, and 32. The rabbits took food well, and some lived for a long while, having the chloroform administered as described—e.g., No. 22 lived for more than a month and No. 32 for nearly two months.

TABLE II.—*Administration by Subcutaneous Injection.*

| No. | Day. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st. | 2nd. | 3rd. | 4th. | 5th. | 6th. | 7th. | 8th. | 9th. | 10th. | 11th. | 12th. |
| 1 | *1150* | *1150* | 1100 | 1050 | 1070 | *1075* | *1100* | 1050 | 1070 | 1000 | — | — |
| 2 | *2000* | 1950 | 1890 | *1925* | *1900* | — | — | — | — | — | — | — |
| 3 | *1550* | 1550 | 1520 | *1470* | *1550* | 1450 | 1430 | 1450 | — | — | — | — |
| | *Daily Injections of 0·1 c.c.* | | | | | | | | | | | |
| 4 | 1700 | 1680 | — | — | — | — | — | — | — | — | — | — |
| 5 | 1430 | 1400 | — | — | — | — | — | — | — | — | — | — |
| 13 | 2400 | 2450 | 2430 | 2230 | — | — | — | — | — | — | — | — |
| 16 | 2700 | 2630 | 2520 | 2625 | 2500 | 2470 | 2400 | 2310 | 2220 | 2180 | 2150 | 2130 |
| 19 | 1700 | 1680 | 1700 | — | — | — | — | — | — | — | — | — |
| 21 | 3100 | 3050 | 3050 | 3000 | 3050 | 3020 | 2975 | 2930 | 2900 | 2850 | 1 mnth later | 2725 |
| 25 | 1650 | 1550 | 1470 | 1450 | 1450 | 1350 | 1300 | 1350 | 1300 | 1375 | 1350 | 1250 |
| 28 | 1500 | 1400 | — | — | — | — | — | — | — | — | — | — |
| 29 | 1150 | 1150 | 1150 | 1150 | 1100 | 1060 | — | — | — | — | — | — |
| 31 | 2450 | 2420 | 2280 | 2250 | 2350 | 2450 | 2300 | 2150 | 2100 | 1950 | 26 days later | 1350 |
| 37 | 1325 | 1300 | 1200 | 1100 | 1200 | 1200 | 1150 | — | — | — | — | — |

In the first three experiments cited above 0·2 c.c. of the anæsthetic was injected on the days signified by italic figures, and it will be noted that the effect of the injections is to lower the weight on the day or days following. This effect is very much more marked in the nine experiments of the second series when the chloroform was given daily until the animal died. Here a considerable fall in weight is shown in some of the animals. In rabbit No. 21 there is a loss of 720 grammes in a month, and in rabbit No. 31 a loss of 1100 grammes in a somewhat shorter time. In many of the animals the loss in weight is very slow at first, but as time progresses it becomes much more rapid. The effect upon weight of administering the chloroform in this way is much more marked than when the drug is administered by inhalation on alternate days, but not so rapidly fatal as where it is given daily in that manner.

TABLE III.—*Administration by the Stomach.*

| No. | Day. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st. | 2nd. | 3rd. | 4th. | 5th. | 6th. | 7th. | 8th. | 9th. | 10th. | 11th. | 12th. |
| 9 | 2380 | 2320 | 2200 | 2250 | 2250 | 2160 | 2210 | 2175 | — | — | — | — |
| 14 | 2300 | 2350 | 2380 | 2380 | 2240 | — | — | — | — | — | — | — |
| 15 | 2150 | 2025 | 1975 | 2050 | 2150 | 1950 | 1925 | 1900 | 1940 | 1875 | 1870 | 1870 |
| 18 | 2400 | 2520 | 2500 | 2550 | 2450 | 2300 | 2150 | 4 months later | | | 1350 | |
| 23 | 1700 | 1700 | 1750 | 1700 | 1650 | 1550 | 1500 | 1500 | 1450 | — | 1 mnth later | 1620 |
| 33 | 2100 | 2000 | 2000 | 1900 | 1900 | 1800 | 1700 | 1650 | 1600 | 1550 | 1475 | — |

The amount of $CHCl_3$ given by this method was somewhat smaller than that given in the two previous series, being about 0·08 gramme per diem, but this amount, small as it is (about the same as the $CHCl_3$ content of one lozenge as described by Crichton-Browne (2)), caused a progressive diminution in weight in the animals. In all these cases the diminution in weight was marked, with the exception of No. 14, where a rise in weight was found. The death of the animal was, however, preceded by a very considerable fall. In No. 18 the rabbit tolerated a daily dose for over four months, but it is significant that in that time the animal had lost nearly 50 per cent. of its original weight—or rather more than a kilogramme.

*Histological Changes.*

Concurrently with the alteration in body weight in the animals under experiment histological changes in the organs and tissues examined were found. These changes were for the most part similar to those already described by Bandler (3), Heintz (4), and Ajello (5), and later by Doyon (6) and Billet (7).

*Administration by Inhalation.*

As in the previous series of experiments (1) the kidney and liver suffered considerably when chloroform was administered in this way. The degree of degeneration, however, varied in the different cases, and the difference in degree was not always dependent upon the number of administrations, nor was the change equally marked in the kidney and liver. For example, in the kidney the greatest alteration from the normal was found in animals No. 22, which survived for 31 days, and No. 36, which only survived for six days. The liver in No. 22 was also very badly degenerated, whereas that of No. 36 was not markedly changed. On the other hand, the liver in rabbit No. 30, which lived for five days, showed marked degenerative changes. The cells were coarsely granular and vacuolated; the nuclei took the basic stain badly and fat was abundant. On the whole, it may be stated that the degeneration in the kidney was the most marked feature of administration in this way, and that the kidney was invariably the seat of much change. A point of interest lies in the fact that most of the specimens showed that the glomerular tuft had shrunk away from its capsule—a phenomenon which I showed in a previous contribution was only present after very great changes had taken place in the organ. The liver suffered most in those cases which survived for a considerable time, whereas those animals which succumbed at an early date showed generally a much smaller degree of change. Fat was detected in all instances, the stain used being Scharlach R. The fat was almost always abundant, and generally involved the cells at the centre of the lobule first and extended outwards subsequently.

The spleens of all the animals were examined and the sinuses were invariably found to be engorged with blood. A considerable quantity of an orange-coloured pigment was generally present, and in most instances enormous phagocytes were abundant, the phagocytes being distended with

red corpuscles and often with pigment. The weight of the spleen varied considerably. Four control animals yielded an average weight of 0·78 gramme, each of the animals weighing 2000 grammes or over.

TABLE IV.—*Weight of the Spleen in Animals Anæsthetised.*

| No. | Original weight of animal. | No. of days. | Weight of spleen. |
|---|---|---|---|
| 12 | 1850 grammes. | 20 | 2 grammes. |
| 20 | 2300 ,, | 7 | 0·9 gramme. |
| 22 | 2050 ,, | 31 | 1·2 grammes. |
| 24 | 2250 ,, | 8 | 1·95 ,, |
| 26 | 1600 ,, | 7 | 0·6 gramme. |
| 27 | 1650 ,, | 5 | 1·4 grammes. |
| 30 | 2050 ,, | 5 | 0·72 gramme. |
| 32 | 2370 ,, | 65 | 1·2 grammes. |
| 36 | 1600 ,, | 6 | 1·2 ,, |

The average weight of the animals was 1900 grammes while the average weight of the spleens was 1·24. A large increase of iron, as demonstrated by the relative amount shown by the ferrocyanide HCl stain on the sections, was found in all cases.

In examining the animals after death it was frequently found that the heart muscle appeared flabby and often the walls seemed unusually thin. These organs were therefore fixed and examined for histological changes. The heart muscle stained unequally; some parts appeared quite normal, while other areas showed a granular appearance quite unlike the normal; the transverse striations were lost and the fibres were often segmented. The nuclei in these parts were poorly stained and in some specimens little was left but a mere indication of the position which they occupied. A large number of the cells were vacuolated. This appearance is referred to by Ungar and Junkers (8), and by Heintz (4). The granular and broken-down appearance was very marked in some of the hearts examined, notably in Nos. 12, 20, 22, and 24, but not so marked in No. 32, where the animal survived for 65 days.

It may be noted here that all the animals referred to above died while under the anæsthetic, either while the drug was being administered or within five minutes after stopping the administration.

*Administration by Subcutaneous Injection.*

In the cases of animals Nos. 1, 2, and 3 chloroform was given in doses of 0·2 of a cubic centimetre, and the doses were given irregularly, as shown in Table II. The results in these cases are therefore not strictly comparable with those obtained by daily administration of 0·1 c.c., but they are included here as they illustrate the points to be brought out in this paper.

The animals referred to other than the above received 0·1 c.c. hypodermically each day. The injection appeared to have no immediate effect, and the rabbits so treated were as active after as they were before the administration. Of those which were injected with the larger amount one died after four and two after three administrations, so that the drug was rapidly fatal. Those rabbits which were injected with only 0·1 c.c. lived for longer periods, the average being 11 days. The longest period a rabbit lived during the administration was 30 days and the shortest two days.

The organ which appeared most affected histologically was the liver, and here the changes were comparable with those referred to in a previous paper (1). In one instance, where the rabbit survived for 30 days, the liver was found to be of an orange colour, and contained masses of an orange- or yellow-coloured pigment like that observed in the spleen, and similar to that described by Fraenkel (9), Marthen (10), and Cohn (11). This pigment gave a positive stain for iron. There did not appear to be atrophy. In a few of the livers examined, particularly when taken from animals which had lived for some time, a considerable amount of white fibrous tissue was found between the lobules, as described by Fiessinger (12). The kidneys also generally showed some degree of degenerative change, although in many instances but little alteration from the normal was observed. Congestion and hæmorrhage were generally found, and in the kidneys taken from the animals which were injected with the larger dose of the drug the degeneration in the convoluted as well as the straight tubules was very marked. Frequently the tubules were packed with débris and desquamated epithelium. Where the degeneration was far advanced fat was always found in the degenerated cells. On the whole, however, the kidney appeared to be affected to a somewhat slighter degree in this method of administration.

The spleens showed much the same condition as did those in Table IV. The amount of iron present as shown by the ferrocyanide HCl method of staining was very great, and in No. 19 when the animal was killed after three administrations fully half of the spleen section stained green by this method of staining. The large phagocytes referred to above were also present here in large numbers.

TABLE V.—*The Weights of the Spleens and other Particulars.*

| No. | Original weight of animal. | No. of days. | Weight of spleen. |
|---|---|---|---|
| 16 | 2700 grammes. | 13 | 1·5 grammes. |
| 21 | 3100 ,, | 30 | 1·85 ,, |
| 25 | 1650 ,, | 15 | 0·67 gramme. |
| 28 | 1500 ,, | 3 | 1·2 grammes. |
| 31 | 2450 ,, | 26 | 1·5 ,, |
| 37 | 1325 ,, | 7 | 1·5 ,, |
| Average... | 2121 ,, | 16 | 1·37 ,, |

Thus the average weight of the spleens was 1·37 grammes, as compared with an average weight of 0·78 gramme in the control animals. The hearts generally showed degenerative change, although this was not always marked. Granular cells with loss of the cross-striped appearance were common, and in most cases the nuclei stained irregularly; sometimes the peripheral part of the cardiac muscle appeared to have suffered most, at other times the central parts.

Fat was not observed in any of the hearts examined for it, therein differing from the findings of Fraenkel (9) and supporting Heintz (4).

*Administration by the Stomach.*

The method of administration adopted here was not by any means so rapidly fatal as either of the other methods, contrasting in this with the administration of larger doses in olive oil as detailed in a previous paper, where this was the most fatal method of administration. The average length of life during the administration was 16 days, not taking into account the animal that lived for four and a half months receiving an administration each day. As might also be expected, the liver suffered most of any organ when the chloroform was administered in this way. The amount of degenerative change was great in all cases, but was of a different type in those animals which lived for some time to that in those where death took place in a few days. In those dying soon the cells showed albuminous degeneration, vacuolation, and on two occasions all that could be made out of the liver cells was a kind of network outlining spaces which contained a poorly staining central nucleus surrounded by a small amount of coarsely granular protoplasm. In rabbit No. 18, which lived for more than four months, there was a very great deal of fibrous tissue throughout the liver. Large openings were found irregularly distributed throughout the specimen, and the altered cells showed no sign of definite arrangement.

The greatest degenerative change was observed in No. 33, where the centres of the lobules had lost all trace of their cellular components and were made up of a cheesy mass containing numerous dark granules. Abundance of fat was always found.

The kidneys had on the whole suffered comparatively slightly, although in Nos. 14 and 33 the cells in places were badly degenerated, showing but little sign of the original structure. In No. 33 the glomerular tufts were shrunken, and in a few places in the cortex as well as in the medulla the cells of the tubules were entirely lost. There was rarely congestion and no hæmorrhages were found.

In the spleen the sinuses were found distended with blood, and pigment was present. In Nos. 14, 15, and 23 the amount of iron shown by the ferrocyanide HCl stain was but small, although in 18 and 33 the amount was very great.

The large phagocytes were numerous in those specimens which contained much pigment.

TABLE VI.—*The Weights of the Spleens and other Particulars.*

| No. | Original weight of animal. | No. of days. | Weight of spleen. |
|---|---|---|---|
| 14 | 2300 grammes. | 5 | 1·2 grammes. |
| 15 | 2150 ,, | 14 | 0·3 gramme. |
| 18 | 2400 ,, | 140 | 1·5 grammes. |
| 23 | 1700 ,, | 30 | 0·95 gramme. |
| 33 | 2100 ,, | 11 | 0·8 ,, |

The average weight of the animal was 2130 grammes, while the average weight of the spleens was 0·95 gramme, the latter average being 0·17 gramme above the normal. The hearts showed very little variation from the normal, and the cross striping was seen plainly in all the specimens examined.

*Consideration of Results.*

In reviewing the results of the experiments detailed above, it appears to be proved that given in the form of small doses frequently repeated chloroform is a much more dangerous drug than when given in a single much larger dose. The first doses given appear to lower the vitality of the tissues, so that the later doses have a more marked action.

Idiosyncrasy or a number of undetermined factors appear to influence the action of chloroform on animals, and we find enormous variations between the shortest time and the longest time an animal lived during the administration.

In all the animals examined the liver appeared to have suffered greatly, although, as was to be expected, the most marked degeneration was found where the anæsthetic was given through the stomach. When the drug was inhaled the kidneys seem to have suffered more uniformly than in the other cases, and although the degree of degeneration was not always great, the difference in degree between kidney and liver degeneration was not nearly as marked as when the chloroform was given in either of the other ways.

Very great changes were seen almost uniformly in the spleen even in the animals that died in a few days. The evidence of extensive hæmolysis was most marked. The large-sized phagocytes in many cases distended with dead red corpuscles and in other cases containing a pigment which gave a positive stain for iron, the masses of such pigment apparently lying loose in the spleen, and the large size and weight of the organ all demonstrated its increased activity (Paton and Goodall) (14). The organs in which this increased activity was least manifest were those removed from the rabbits which received the administration through the stomach much diluted with water. Here the average size of the spleen was small and the weights corresponded. The average weight was only 0·17 gramme above the normal, whereas in the other experiments the increase was 0·46 gramme when chloroform was inhaled and 0·59 gramme where it was injected.

When chloroform was inhaled it seemed to have a more marked action on the heart muscle than when it was given through the stomach or injected. Fat was not detected in the hearts examined.

In connexion with the administration by the stomach, it is of interest to note that the amount of chloroform given in each administration was comparable with the quantity described by Sir James Crichton-Browne (2) as being present in one linseed, liquorice, and chlorodyne lozenge. The average weight of a full-grown rabbit is about 2 kilogrammes, while 70 kilogrammes represents the weight of a full-grown man. Thus 30 to 40 of these lozenges per diem in a man gives the same proportion of chloroform to body weight as in the experiments, and correspondingly less in a woman or a child. Many rabbits are very susceptible to the action of chloroform, but even in the one example where the animal lived for a long while the liver changes were of a very striking description. The lesions found in rabbits closely resemble those reported in fatal human cases of chloroform poisoning by Stiles and McDonald (15) and others.

The mortality among rabbits which have been anæsthetised through the respiratory passages and the changes in heart, liver, and kidney found after death emphasise the danger of repeated administration by this method, even when the anæsthetic is only exhibited for very short periods.

*Summary.*

1. Chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits.

2. The liver shows degeneration of the cells sometimes so marked that the whole centre of the lobule is broken down into débris. The cells in the centre of the lobule are early affected, those further out later. Fat is always present, generally in large quantities.

3. The kidney suffers to some extent, but relatively more when the chloroform is inhaled than when injected or given by the stomach. Fat is occasionally found in degenerated cells.

4. The spleen shows intense congestion, the sinuses being packed with red blood corpuscles. Along with the red corpuscles an orange-coloured pigment is generally present which reacts to the stain for iron. A large number of very large phagocytes are present in most cases. The average weight of the spleen was 0·46 gramme heavier than the controls when chloroform was inhaled, and 0·59 gramme and 0·17 gramme heavier when injected and when given by the stomach respectively.

5. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of hearts examined.

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Glasgow.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF NERVE DEAFNESS IN A SYPHILITIC OF THIRTY YEARS' STANDING.

BY ARTHUR H. CHEATLE, F.R.C.S. ENG.,
AURAL SURGEON, KING'S COLLEGE HOSPITAL.

A MAN, aged 51 years, complained of deafness in both ears, the right being the worse, and "ringing" tinnitus. The trouble had begun insidiously seven or eight years previously and seemed to have become stationary. Any noise around him made him feel deafer. He had not suffered with giddiness, headache, herpes, or facial paralysis, and there was no history of anything to cause deafness with the exception of syphilis at the age of 21 years. According to the history, consistent treatment of the syphilis had only lasted six months. There had not been any tertiary lesion and there had not been any girdle or lightning pains.

On examination, there was nothing abnormal in the membranes, nose, nasopharynx, or pharynx. The conversational voice could be heard at 2 inches on the right side and six inches on the left. The forced whisper was not heard on the right side and only at the meatus on the left. The tuning-fork tests clearly demonstrated internal ear deafness. The Eustachian tubes were quite clear on catheterisation, which made the ears feel decidedly "stuffy." The pupils were not contracted and were equal and reacted to light. There was no nystagmus. The knee-jerks were brisk. There was no incoördination, disturbance of equilibration, or loss of sensation, and no evidence of any other nerve implication. Dr. W. d'Este Emery reported that the blood gave a powerful Wassermann reaction.

In opening a discussion on "Syphilis in Relation to Otology" at the Otological Section of the Royal Society of

Medicine in November last, I had stated that "I cannot be certain that, apart from tabes, there is a progressive sclerosis of the auditory nerve alone," but this case appears to me to be of that nature and is probably a type which will not infrequently be met with. Cases of progressive internal ear deafness and tinnitus with a slow and insidious onset occurring without any assignable cause are strongly suspicious and demand the Wassermann test. I am as yet unable to say what effect antisyphilitic treatment will have.

Savile-row, W.

## A CASE OF ACONITE POISONING.

BY T. INGLIS, F.R.C.P. EDIN.

THE patient, a married woman, aged 45 years, a multipara, had suffered from rheumatism, shortness of breath, and swelled feet. She was at the beginning of the menopause and had had two or three floodings. Lately she had been upset by family and money matters which brought on neuralgia and aggravated gloomy thoughts of impending evil. To save money she went to a London hospital, where she was supplied with a mixture and liniment. The latter was in an ordinary clear medicine bottle, but marked "The Liniment" on a red poison label. Next morning, not feeling well, she carelessly drank by mistake about three ounces of the liniment, not noticing the label, it being turned towards the wall. At once she recognised that a mistake had been made from the taste of camphor (most officinal liniments contain it), followed by a hot tingling feeling in the mouth, then numbness. A sick giddiness crept over her, with gastric pains, and she collapsed on the floor, where she was found two hours later by her husband. He sent to a druggist for ipecacuanha wine, and administered a strong emetic. But by this time most of the poison had been absorbed and very little of it was returned. Feelings of sickness continued and a violent attack of clonic convulsions supervened. There was a delay in getting the medical man, who found the patient lying on the floor speechless, cold, pale, skin moist, pulseless, respiration very faint and irregular, and the pupils dilated and insensitive. The temperature was 96·6° F. There was no ptosis. At intervals she was able to gasp out that there was terrible gastric and abdominal pain and that all the body was alive with irritation and pricking of the skin, succeeded by numbness. The latter fact, together with the pallor and damp skin, pointed to aconite poisoning to the exclusion of belladonna. Three times after attacks of clonic convulsions she appeared to be dead, but when they ceased the mind was clear and unaffected. As ipecacuanha (a cardiac depressant) had been given, it was thought advisable only to give one mustard emetic to save the enfeebled heart. The head was kept low, the feet were raised, a sinapism was placed over the heart, and hot bottles and flannels were applied to the lower extremities and abdomen. Strychnine and digitalis were given hypodermically and brandy was injected per rectum. Artificial respiration was unceasingly kept up. After an anxious six hours the breathing became stronger, an irregular intermitting pulse could be felt at the wrist, whilst the body warmth slowly returned. A little coffee and brandy were swallowed and retained. So the crisis passed. There was no purging at any time, but subsequent actions of the bowel were hard and gritty, possibly from particles of the powdered aconite root. The quantity of aconite taken may be roughly estimated as sufficient to kill six persons.

Yokohama.

LECTURES ON MILK.—A course of six lectures on Milk, followed by practical work, will be delivered by Dr. A. Harden, F.R.S., on Thursday evenings, at 7.30 o'clock, at the South-Western Polytechnic Institute, Manresa-road, Chelsea, S.W., commencing on Feb. 2nd. The following subjects will be dealt with: (1) The Chief Properties of Milk; (2) Bacteria in Milk; (3) Changes Produced in Milk by Bacteria; (4) Spread of Disease by Milk; and (5) Preventive Measures. A practical class will be held immediately after the lecture, the work of which will include simple methods of ascertaining the composition of milk and the detection of impurities and preservatives in milk.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### CLINICAL SECTION.

*Exhibition of Cases.*

A MEETING of this section was held on Jan. 13th, Mr. W. BRUCE CLARKE being in the chair.

Dr. J. D. ROLLESTON and Dr. N. S. MACNAUGHTAN showed three cases of Familial Pigmentary Dermo-fibromatosis. The first patient was the father of the two other cases. He was aged 47 years. He had not suffered from any illnesses beyond scarlet fever and measles in early childhood; his general health was good, apart from "bilious attacks" about once a month. He had had the nodules and pigmentation as long as he could remember; he did not know which appeared first. Nodules had become more numerous since a severe attack of pneumonia 13 years ago. Both parents were alive; his father, aged 72 years, showed numerous small nævi and moles on the trunk; his mother, aged 73 years, had some nævi on the trunk and a large area of pigmentation in the lumbo-sacral region; both showed slight yellowish tinge of skin. The trunk of the patient was thickly set with molluscous tumours, mostly sessile, in all stages of development. There were a few lesions on the face and limbs. The skin of the abdomen and inner side of the thighs showed yellow groundwork of pigmentation, with pigmented spots and a few *café-au-lait* patches. The pigmentation of the anterior axillary folds was well marked. There was no pigmentation of the buccal mucosa and no deformities of the skeleton nor mental symptoms. The knee- and ankle-jerks were active. The plantar reflex was flexor. The blood count was normal, and the blood pressure was 130 mm. Hg. The second case was a daughter of the first patient and was aged 13 years. There was a general yellowish tinge of the skin and punctiform pigment spots and *café-au-lait* patches were scattered over the neck, the trunk, the arms, and the thighs; there was one ink-spot over the left costal margin and there were numerous blue spots, some slightly raised above the skin, on the trunk and the thighs, one being on the left upper arm. There was a nævoid growth of the right half of the upper lip, displacing upwards the ala nasi; the skin over it had a bluish tinge and was covered with fine hairs. The corresponding alveolus had a prominent bony ridge. There was a small nodule in the left frontal region at the margin of the hairy scalp. Slight scoliosis was present and the intelligence was good. She suffered from "bilious attacks" about every two months. A mild attack of diphtheria occurred in November and December, 1910; since the commencement of the attack blue spots had become more numerous. Blood examination showed slight anæmia. The third case was another daughter, aged 5 years. There was a general yellowish tinge of skin, punctiform pigment spots, and *café-au-lait* patches on the neck and trunk; the limbs were free; no molluscum was present. Diphtheria occurred in November and December, 1910; the mother thought that the patches had become more numerous since the beginning of the attack. The other two children, both boys, aged 14 and 10 years respectively, showed slight yellowish tinge of the skin but no molluscum or pigmentation. The eldest boy had one small mole on the chest and another on the left buttock. Microscopical examination of one of the father's tumours and of the eldest daughter's blue spots showed presence of fibrous tissue but no nerve fibres. Dr. Rolleston said that he and Dr. MacNaughtan had applied the term invented by Professor Chauffard of "pigmentary dermo-fibromatosis" to the condition illustrated by that family in preference to neuro-fibromatosis for three reasons: (1) The lesions appeared to be independent of the cutaneous nerves; (2) there were no nodular swellings on the deeper nerves; (3) histological examination of sections in the cases of the father and eldest child showed an absence of nerve fibres. The condition was undoubtedly closely related to von Recklinghausen's disease, of which it might be regarded as an incomplete form, or *forme fruste*. In the case of the two girls they had an excellent example of the disease developing in different stages. In the elder girl the pigment patches preceded the blue spots—i.e., the small

molluscous tumours. In the younger girl no molluscous tumours had at present appeared, but it was highly probable that they would develop later. Of special interest in the three cases was the relation of the condition to acute infections. The father stated that after an attack of pneumonia 13 years ago the molluscous tumours became more numerous, and during the stay of the two children in hospital for diphtheria the molluscous tumours in the case of the elder girl and the pigment spots in the younger girl increased in number and size. Probably the approach of puberty superadded to the recent infection would cause a further development of the lesions in the older girl. They would like to draw attention to the familial occurrence of so-called "bilious attacks." The occurrence of gastric disturbance had been noted in several cases of von Recklinghausen's disease, in some cases being associated with neuro-fibromata of the gastric wall. It was noteworthy that familial vomiting occurred in an incomplete series of cases of von Recklinghausen's disease reported by Dr. Parkes Weber. In view of the fact that attempts had been made to associate von Recklinghausen's disease with tuberculosis, they had found no evidence of tuberculosis either in the father or the children. Von Pirquet's reaction in the case of the children was negative. The doctrine of pluriglandular insufficiency was also inapplicable in their cases, as there were no mental or physical signs of disturbance of the glands of internal secretion. In conclusion, Dr. Rolleston stated that the blood examination made by Dr. MacNaughtan showed that the percentage of eosinophiles was normal, which in some cases of von Recklinghausen's disease had risen to 15 or 21 per cent.—Dr. H. D. ROLLESTON considered that the growth on the right half of the upper lip of the daughter aged 13 years was probably a plexiform neuroma, and Dr. F. PARKES WEBER thought also that it was a variety of that condition.—Dr. F. J. POYNTON described a case of Recklinghausen's disease in which excruciating pain was experienced, and asked if the cases shown were likely to develop painful tumours.—Dr. G. A. SUTHERLAND said that growths similar to that on the lip of the girl aged 13 years often occurred on the upper eyelid.—Dr. J. GALLOWAY described two cases in which surgical interference was tried for growth like that on the girl's lip—in the first success was not obtained and in the second no great result was achieved, but Mr. A. CARLESS narrated a case of similar growth on the chest which was successfully dealt with surgically.

Mr. C. C. CHOYCE showed two cases. The first was one of Symmetrical Gangrene of both legs, fingers of both hands, and nose. The patient, a marine coal-trimmer, aged 25 years, was a coloured native of Grenada, and had never before left the West Indies. He had never had any previous illness except gonorrhœa. No evidence could be obtained of past syphilis, Raynaud's phenomenon, or renal disease. Whilst in the Channel, on his first sea voyage, on a day that was not unusually cold, he suddenly noticed on coming on deck that his fingers and feet became very cold. He lost sensation in them, and then power of movement, and noticed that warming before the fire did not restore warmth and sensation. During that night his right foot was painful and became swollen, but he was able to do some of his work during the next day. During the next night his left foot also became swollen and painful; his fingers remained cold and numb, but were not painful. During these two days he passed black urine; since then it had been quite clear. There were no rigors, no lumbar pain, no vomiting, no diarrhœa, and no soreness of the gums or tongue. For some ten days he was invalided on his ship, suffering from thirst, acute pains in the legs and arms, and hyperæsthesia above the levels of anæsthesia. On arrival in the Thames he was sent into the Seamen's Hospital, Albert Dock. On admission his temperature was 101° F., but his general condition was fair. There was no evidence of a general endarteritis; there was no rash. The mouth was normal, except for dry sordes about the lips and a moist, slight fur on the tongue. The feet from the toes to 1½ inches above the ankles were glossy, black, swollen, and quite cold. There was no definite pitting on pressure; no pulsation could be made out. Deep pressure could be felt by the patient, but all sense of ordinary touch was lost, except at a ring, half an inch wide, at the upper limit of the gangrene, where there was marked hyperæsthesia. The patient could move the toes and ankles. The knee-jerks were present and normal. There was slight pain on deep pressure in the calves, but otherwise sensation above was normal. The fingers on both hands had the outer three fingers black and cold, with a ring of marked hyperæsthesia at the line of the metacarpo-phalangeal joints. The index fingers both showed black, cold, anæsthetic patches. The patient could move the fingers, although the terminal phalanges of the outer three fingers of each hand were dry and shrivelled. The nose showed at its tip a small gangrenous patch of about the size of a threepenny-piece. The ears were normal. The urine contained no albumin, blood, or sugar; its specific gravity was 1025. The stools were natural. The red blood corpuscles were 3,900,000 per cubic millimetre; the white blood corpuscles, 25,000 per cubic millimetre; and the hæmoglobin 70 per cent. Differential count: lymphocytes, 9 per cent.; large mononuclears, 5 per cent.; polymorphonuclears, 86 per cent. The limbs were thoroughly cleansed with acetone and treated aseptically. A well-marked ulcerating line of separation had formed 2 inches above each ankle. Both superficial and deep tissues appeared entirely dead. There had been some suppuration of the left leg, but the patient's general condition had steadily improved.

Mr. CHOYCE'S second case was one of Actinomycosis of the Abdominal Wall. The patient was a man, aged 49 years, upon whom he operated for appendicitic abscess in June of last year. The abscess was a thick-walled bilocular one which contained a concretion and about one pint of fæcal-smelling pus. The appendix was not readily found; the abscess was therefore drained and the appendix left for a future operation. The patient rapidly improved in health, and his wound healing well he left hospital in July, but stated that almost immediately after leaving the hospital he noticed some firm swelling in the region of the upper part of the left inguinal canal. That was slightly tender, but his general health was good. Nothing abnormal could be felt on the left side of the abdomen at the time of operation. The swelling on the left side of the abdomen gradually enlarged until, when seen again in September it extended from the left iliac spine to within 1 inch of the middle line, and from Poupart's ligament to within 3 inches of the costal margin above. It seemed to be confined to the abdominal wall, but was not moveable apart from the ilium. The abdomen moved freely on respiration. The tumour was tender on deep pressure, but was not painful. His temperature was normal, and the general health not markedly affected. A leucocyte count showed the presence of 10,000 per cubic millimetre. There was a history of syphilis ten years before. The patient was treated with large doses of potassium iodide. A fortnight later the tumour was larger, being more prominent anteriorly, and now extending up to within 1½ inches of the costal margin and to within ½ inch of the middle line. There was a reddened, slightly œdematous, area over the centre, the temperature was 101° F., and the leucocyte count now 20,000. An incision was made into the softened area, and an abscess cavity found containing a few drachms of pus and surrounded by dense masses of fibrous tissue. No actinomyces nor other organisms were found at this time. The abscess readily healed and the upper part of the mass diminished in size, but there remained a fibrous mass extending down behind the pubes. The temperature again became normal after the operation. At the beginning of November, as the tumour was increasing in size again, the old scar was excised with a small portion of the mass. In that were found a few fistulous tracks lined with granulations, and containing a slimy discharge in which were to be seen a few yellow granules. Those on examination proved to be composed of actinomyces. The incision carried through the mass showed that the peritoneum was free. The tumour was composed of fibrous tissue and a small round-celled infiltration. Since that date, under treatment of large doses of potassium iodide, the tumour had been decreasing in size, especially in its upper parts. It had, however, spread across to the right side of the abdomen. Now that part, too, was decreasing slowly.

Dr. GALLOWAY showed a case of Pulmonary Stenosis (Congenital)? The patient was a girl, aged 4½ years, who was sent to hospital on the discovery of abnormality of the heart. She had "bronchitis or pneumonia" when 4 months old; the medical man who attended her said that she had heart disease, which was probably congenital. She was

a fairly developed child and gave evidence of no serious defect on inspection. There was no cyanosis nor clubbing of the fingers, but she became breathless while at play, and perhaps a little cyanosed. There was a well-marked long-continued systolic murmur to be heard, its point of greatest intensity being at the base of the heart to the left of the sternum. The case was shown as one of congenital pulmonary stenosis or of patent ductus arteriosus.

Mr. SIDNEY A. BOYD showed a case of Hæmangioma of the Foot.

Dr. PARKES WEBER read a paper on a case of Congenital Pulmonary Stenosis, with special consideration of the nature of the secondary blood changes, which is published in full in this issue of THE LANCET, p. 150.

## SOCIETY OF MEDICAL OFFICERS OF HEALTH.

*The Relation of Public Health to Industrial Diseases.*

A MEETING of this society was held on Jan. 13th, Dr. W. G. WILLOUGHBY, the President, being in the chair.

In the unavoidable absence of Dr. B. A. Whitelegge, a discussion upon the Relation of Public Health to Industrial Diseases was introduced by

Mr. W. F. DEARDEN, who said that the excessive mortality from certain diseases which afflicted workpeople engaged in particular industrial pursuits must point to the existence of some method of causation common to each industry concerned, whether or not this be directly or indirectly attributable to the trade process itself. There was one outside factor, however—viz., alcoholism—which appeared to pick out certain trades in the exercise of its deleterious effects. Workers subjected to excessive heat, as in glass-works and rubber-works, were, on account of the thirst created, very addicted to the use of alcohol and suffered accordingly. The alcoholic tendency of printers, hatters, and shoemakers was well known; waterproof-cloth spreaders, who were subjected to naphtha fumes, were very rapidly affected by alcohol, and it was suicidal for workers in lead to indulge in the habit. The direct influence of trade processes upon the production of disease was particularly marked in dusty occupations, and could be further illustrated by a reference to the dangerous trade processes scheduled in the Workmen's Compensation Act. One way in which industry affected public health was the production of a special liability to incapacity and death as the result of accident. In 1909 there were 39,966 accidents investigated by certifying factory surgeons, and of these 946 were fatal. The provisions of the Factory Act referring to safety came quite within the range of public health, including as they did the providing of means for escape from fire and the fencing of dangerous machinery. General sanitary requirements had reference to cleanliness, proper provision of closet accommodation, air-space, ventilation, temperature, and the drainage of floors where wet processes were carried on, though it appeared strange that there were no obligations as to efficient lighting. The investigations by certifying surgeons of cases of anthrax, plumbism, mercury, phosphorus, or arsenic poisoning contracted in a factory or workshop were of great value, and had resulted in a supply of information which had been of immense service in demonstrating the necessity for supervision of the processes. Although much had been done to improve the lot of the workers since the first Factory Act was passed over a hundred years ago, the factory sanitarian could not yet rest on his oars. On the other hand, the medical officer of health must recognise the influence on the general health of the community of the ill-effects which kept pace with, and which could not be dissociated from, industrial occupations.

Dr. EDWARD C. SEATON referred to the work of Dr. Whitelegge at the Home Office, and Dr. G. P. BATE considered that one of the most important reforms of recent years was the introduction of the conditional certificate of employment for children. Many children in an indifferent state of health were better if working at a suitable employment than running wild in the street. He pointed to the greater efficiency of inspectors of factories, who were now obliged to have a working knowledge of hygienic conditions.

Dr. A. GLEN PARK also spoke with approval of the conditional certificates, but regretted that he was not empowered as a certifying surgeon to make a subsequent examination of a child for the purpose of ascertaining whether conditions he had laid down, such as the provision of spectacles, had been carried out. There was no doubt that these certificates had encouraged certifying surgeons to allot suitable work to particular children.

Dr. ALFRED GREENWOOD would like to see a closer coöperation between medical officers of health and certifying surgeons, and suggested that the latter should have access to the results of the medical inspections of school children.

Mr. F. E. FREMANTLE advocated courses of popular instruction for workmen in the methods to be employed in preventing accidents, and suggested that models of machinery properly guarded should be placed in public museums.

Dr. J. H. KEAY supported this suggestion, and referred to the fact that children who had been examined by a school medical officer upon leaving school were frequently rejected by the certifying surgeon on account of defective eyesight.

Dr. E. L. COLLIS urged the importance of medical officers of health taking more interest in conditions of employment in special diseases, and referred with satisfaction to the work in this direction which had been done by Dr. Greenwood and Dr. H. Scurfield. He emphasised the necessity for investigating the invalidity of special industries and considered that danger in occupation was indicated more by invalidity than by mortality.

Mr. HERBERT JONES, Dr. A. H. BYGOTT, Dr. SIDNEY DAVIES, Dr. W. BUTLER, and the PRESIDENT also took part in the discussion.

## SOCIETY FOR THE STUDY OF INEBRIETY.

*The Influence of Parental Alcoholism on the Physique and Ability of Offspring.*

THE discussion on this subject, which was held at the winter meeting of this society on Jan. 10th in the rooms of the Medical Society of London, was opened by Dr. T. B. HYSLOP, the President, in an address which we published last week. Dr. Hyslop, it will be seen, emphasised the fact that recent study of the question had greatly increased the sense of its complexity, allowing that he personally under advancing experience was more hesitant than formerly in connecting the mental defects and disorders noted in the offspring with the alcoholism of the parents. The real question to be answered, he said, was, Does parental alcoholism (of a pernicious kind)—apart from parental degeneracy, which, together with a tendency to alcoholism, is hereditable—influence the physique and ability of offspring at any age? He finished his address by saying that the conclusions arrived at by the Galton Laboratory School of Eugenics and their critics dealt with part only of the general question at issue, adding, "When further investigations shall have demonstrated the influence of parental alcoholism on parental degeneracy, and the combined influence on the physique and ability of offspring, we shall be better able to speak with authority for the guidance of the community."

Mrs. SCHARLIEB expressed her general concurrence with Dr. Hyslop's views, and urged the necessity of keeping an open mind on this question pending the result of fuller inquiry.

Sir VICTOR HORSLEY regretted that no representative of the Eugenics Laboratory had thought fit to attend the meeting, in view of Professor Karl Pearson's recent incursion into this question. He referred to the damaging criticisms to which Professor Pearson's figures had been subjected by the Cambridge economists, and mentioned that as the result of a careful scrutiny of the Edinburgh Charity Organisation Society's report, utilised in the Eugenics Laboratory inquiry, he hoped in a few days to draw public attention to other grave inaccuracies in Professor Pearson's statements.[1] He emphasised the fact that in the biometric data no evidence at all was offered to prove the alcoholism of the so-called alcoholic parents.

Dr. C. W. SALEEBY pointed out that Professor Pearson himself stated at the outset of his paper that there was a difference in the quality of the stock in the sober and in the drinking parents investigated, and remarked that this fact must vitiate any conclusion as to differences in the quality of the offspring. To test the effect of alcoholism the comparison

[1] See Brit. Med. Jour., Jan. 14th, p. 112.

should be between like stocks. He referred to Forel's views on blastophthoria, and suggested that there was ground for distinguishing an acute variety of this condition, as in cases where defect was supposed to depend on conception during drunkenness, and a chronic variety as in ordinary cases of chronic alcoholism. He indicated the parallel instances of degeneracy induced by such poisons as lead and arsenic. The further evidence needed with reference to the whole problem would be best supplied by experiments on the lower animals.

Dr. W. C. SULLIVAN remarked that in the really scientific literature of the subject the alcoholism which was asserted to act injuriously on the offspring was chronic alcoholism, and the belief in its detrimental action rested on medical observations in which it was definitely ascertained that this chronic intoxication really existed in the parent, and, further, that it existed before the conception of the child. Neither of these conditions was satisfied in the biometric data, where parents were described as alcoholic on no better evidence than the fact that social workers thought that "they were drinking more than was good for them or their homes." If the biometricians really believed that these alcoholic parents were suffering from chronic alcoholism, then they were asserting that three-fifths of the adult male population of Edinburgh, as shown by their random sample, were chronic alcoholics—a figure absurd on the face of it. The latest study of the biometricians on this question showed their want of first-hand acquaintance with the facts of alcoholism. Otherwise they would never have imagined that the inmates of inebriate reformatories were cases of "extreme alcoholism" or that the "intensity of their alcoholism" could be measured by the number of their convictions. This was due to the common illusion that drunkenness was the sole cause and true measure of alcoholism, whereas in fact the most alcoholic individuals amongst police-court cases, from which the so-called inebriates were drawn, were precisely those who had fewest convictions.

Dr. E. CLAUDE TAYLOR entered a protest against the suggestion in the biometric memoirs that inability to read or write was necessarily an evidence of mental deficiency which should render the individual so affected liable to be segregated for life.

Canon HORSLEY and Mr. THEODORE NEILD also took part in the discussion, and Dr. HYSLOP briefly replied.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

*The Present Position of the Treatment of Plague.—Exhibition of Cases and Specimens.*

A MEETING of this society was held on Jan. 11th, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. J. C. THOMSON read a paper entitled "The Present Position of the Treatment of Plague." He began by emphasising certain points in reference to the general management of a case of plague. While pneumonic cases, fortunately few in most epidemics, were virulently infectious through the emanations from the lungs, and must be dealt with in hospitals where due precautions against spread of the disease could be adequately provided, the results obtained by the Second Indian Plague Commission (1905–1907) showed that bubonic and septicæmic cases might be safely treated in the wards of ordinary hospitals, or in their own homes, provided that measures against rats and their fleas be taken. Combined methods were recommended for the rapid local extermination of possibly infected rats: traps with baits varying from day to day; poisoning with phosphorus, 2·5 per cent., or with barium carbonate, 25 per cent.; birdlime spread on boards and baited like the traps; and Danysz's virus. For the destruction of fleas a most efficient pulicide in combination with a germicide was a mixture of equal proportions of petrol and cyllin, diluted with water 1 in 200. Contacts—i.e., persons who might presumably have been exposed to the bites of fleas in the circumstances where infection of the patient occurred—should be inoculated with Haffkine's prophylactic, which has maintained its reputation as the safest and most efficient plague prophylactic, though a number of others have in recent years been prepared. As to the question of arrangements for disinfection during the illness, these may be approximately the same as in the case of enteric fever, except in cases of the pneumonic type, which being virulently infective from person to person required the most complete measures possible in this respect. Careful nursing of a case of plague was of the first importance. On account of the marked tendency to heart failure in this disease the recumbent position was essential so long as acute symptoms lasted, and in delirious patients, who were often wildly resistive, had not infrequently to be maintained by mechanical means. Points in reference to the nursing of plague were described, attention being specially directed to close observation of the state of the bladder. Food should be of a bland character, liquid, and given in small quantity frequently, but after acute symptoms subsided the diet might be rapidly improved. Water should be freely at disposal between the feeds, and should be frequently forced on acutely ill or delirious patients. The use of cardiac stimulants should be a routine practice in all cases of plague from the very first. Great prostration occurred as a rule within a few hours from the commencement of the illness, and in the earliest stages the debilitated heart needed support. Some of the symptoms that were apt to prove urgent in plague were next referred to—constipation, diarrhœa, high temperature, headache, delirium, insomnia, hæmorrhage—and the remedies found most useful in Dr. Thomson's experience in Hong-Kong were described. The treatment of the plague bubo had been the subject of much discussion, but the consensus of opinion was against excision of it. A large proportion of the buboes of patients who recover resolved without suppuration. Injections of antiseptics into the bubo were of no value. The point of inoculation of plague should always be looked for, and, if discovered, should be attacked vigorously. Unfortunately, it was rarely to be found, in this according with experimental results in the monkey. But occasionally there might be seen on a limb, below the bubo, a papule with an inflamed base and a clear vesicle at the top, the contents of the vesicle swarming with plague bacilli in pure culture. Destruction of this papule by a thorough deep cauterisation with carbolic acid after crucial incision was usually followed by abortion of the illness and a rapid recovery. The indolent ulcers that sometimes resulted from the buboes and the gangrenous skin areas, so-called carbuncles, occasionally met with, were manifestations of the general depression, and their treatment was on general principles. Convalescence from plague was usually slow, and the profound enfeeblement frequently resulting from the illness, with the mental and other sequelæ that sometimes occur, had to be dealt with as individual cases demanded. Dr. Thomson then proceeded to discuss a number of efforts made to find a specific remedy for plague in the directions of antiseptic drugs, serum-therapy, and organo-therapy. He described his own attempts to introduce carbolic acid into the tissues in sufficient quantity to delay the proliferation of the plague bacillus and allow the natural reaction against the organism time to assert itself. The use of 80 grains a day in a series of 204 cases seemed of little value, the plague hospital mortality being 76·5 per cent., only slightly less than the Hong-Kong average. But in another epidemic 144 grains daily in a series of 143 cases gave a mortality rate of only 36·4 per cent., this result, however, being obtained in the second half of the epidemic when the disease was normally less virulent. In the earlier half of the same epidemic oil of cinnamon had been used, but proved valueless. Further experience in Hong-Kong confirmed Dr. Thomson's belief that carbolic acid, while in no sense a specific remedy, was of undoubted value in the treatment of plague when given in massive doses. Trials made with other antiseptics had been disappointing. The position as regards the serum treatment of plague was pretty much that described in reference to antiseptics. Most unequal results had been obtained by different observers, among different races, in different epidemics. In comparing results it was important to note that European races showed a much larger proportion of recoveries, irrespective of treatment. In a series of 94 cases treated by Dr. Thomson in Hong-Kong with serum supplied by the Pasteur Institute in Paris the mortality was 85 per cent., and further trials gave scarcely better results. In Bombay Choksy, using the same serum, had in a series of 200 cases a mortality of 63·5 per cent., while in 200 control cases the mortality was 74 per cent., showing a gain of 10·5 per cent. On the other hand, in Oporto 140 cases were treated, with a mortality of only 14·78 per cent.; and in Brisbane

56 persons were treated, with a mortality of 44·6 per cent.; 39, with a mortality of 17·2 per cent.; and 65, with a mortality of 13·8 per cent. Various other serums tested by Choksy gave less favourable results than the Yersin-Roux serum of the Pasteur Institute in Paris. Indian experience generally seemed to indicate that case-mortality was but little affected by the use of any serum yet prepared; but the course of the illness was favourably influenced, especially if serum be used on the first day of the illness. As to organo-therapy, the use of adrenalin chloride was advocated by E. N. Thornton from experience in South Africa. It had previously been recommended in India by Bose, and Choksy had used it as a remedy for heart failure in plague. Thornton in a series of 50 cases had a mortality of 26 per cent.; in 936 cases previously recorded the mortality had been 37·4 per cent. The apparent advantage was therefore much the same as that obtained with serum in Bombay. Dr. Thomson summed up the present position of the treatment of plague as an exceedingly unsatisfactory one. In spite of earnest work devoted to it in all parts of the world during the recent pandemic their ability to deal clinically with this very fatal and perplexing disease had advanced but little since the question first in modern times became urgent in the Hong-Kong epidemic of 1894. They had still to place chief reliance on careful nursing and general management as for an acute asthenic fever. For the rest, where fresh serum was available it should be used, together with adrenalin, for advantages it certainly seemed to possess; where serum absolutely fresh was not to be had Dr. Thomson was still prepared to use carbolic acid, giving adrenalin along with it. And meanwhile the hope remained that sooner or later a serum might yet be evolved that would prove really efficient as a plague remedy.—Dr. WILLIAM RUSSELL said that it was most gratifying to the society to have had a communication of this nature from a gentleman who from his own practical experience had all the details both of the disease and of its remedies at his fingers' ends.—The PRESIDENT and Dr. FRANCIS D. BOYD also spoke.

Mr. CHARLES W. CATHCART showed: 1. A girl who showed the Advantage of Re-suture of the Facial Nerve when divided during removal of a parotid tumour. The tumour was deep-seated and the pes anserina was stretched over it. Division of the nerve was not recognised until the patient recovered from the anæsthetic condition. Next day Mr. Cathcart reopened the wound, and the surface was explored with electrodes in order to discover by twitchings of the muscles set up which were the distal extremities of the divided nerves. When found, these were united to the proximal ends, and almost complete recovery took place within three months. 2. A man with a Large Fistulous Opening just above the hyoid bone which was the result of an attempt at suicide by cutting the throat. It was the worst case of cut-throat which Mr. Cathcart had ever seen, the tongue having been almost completely separated from the hyoid bone. Sloughing of the wound took place and the large gap now present was the result. Mr. Cathcart demonstrated some interesting points as to the mode of formation of vowel-sounds, showing that these were really made above the larynx, probably in the situation of the back of the throat or tongue.

Mr. J. M. COTTERILL showed a unique specimen of a Diverticulum of the Cæcum which contained a very large concretion. The specimen was obtained from a man, aged 45 years, who suffered from pronounced toxæmia. The tumour lay rather behind the gall-bladder and was of the hardness of stone, giving on tapping a sound metallic almost in nature.

Dr. A. D. WEBSTER gave a demonstration as to the Value of Exercises on Health.

## EDINBURGH OBSTETRICAL SOCIETY.

*Landry's Paralysis during Pregnancy and the Puerperium.—Achondroplasia and Allied Variations.*

A MEETING of this society was held on Jan. 11th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. SAMUEL DAVIDSON (Kelso) sent a paper on a case of Landry's Paralysis occurring during Pregnancy and the Puerperium. The patient, who was now 41 years old, had had eight children, seven of whom were now living; she had not had any miscarriages. All her pregnancies and confinements had been normal till the seventh. Towards the end of her seventh pregnancy, about Dec. 15th, 1906, she began to complain of pains in her legs and feet and had considerable difficulty in walking; at the same time there was troublesome vomiting. She was delivered on Jan. 6th, 1907, of a stillborn child. The labour was easy and natural. Three days afterwards she could not move her legs at all and suffered with pains in them. During the next few days the muscles of the trunk and arms became progressively paralysed. She was quite helpless, unable to feed herself or turn in bed, could not move either hand or foot, and had wrist-drop and pointing of the toes. There was no paralysis of the muscles of deglutition or respiration. Retention of the urine occurred during the first week of illness and required the use of the catheter for four months. With the exception of the pain in the feet there was no disorder of the sensation; there were no bed-sores and no electrical changes in the muscles, and not much wasting. In May, 1907, improvement set in, first showing itself in the arms, but the finer movements in the fingers were a very long time in being established. The patient suffered from internal strabismus before her illness, but it became worse during her illness and improved as the paralysis passed off. The patient again became pregnant in September, 1907, and was delivered of a living healthy child in June, 1908. This pregnancy did not make the paralysis any worse, though it may have slightly retarded the progress of her recovery. About September, 1908, she began to walk with the aid of two sticks, and continued to require the help of one stick in walking till a few months ago. Now she had no pain but occasionally felt cramp in her arms and legs. There was apparently only one muscle now remaining paralysed, that being the extensor proprius hallucis on the right side. She was well nursed during her illness. The only medicinal treatment was the administration of arsenic and strychnine after the acute symptoms had passed off. Dr. Davidson was inclined to believe that the cause was probably one of the toxæmias of pregnancy. Only one reference was found, by F. Lenitton, "Landry's Paralysis Complicating Pregnancy," in the *North-Western Lancet*, Minneapolis, vol. xxii., p. 318 (1902).—Remarks were made on the paper by the PRESIDENT and Dr. J. W. BALLANTYNE.

Dr. D. BERRY HART read a paper on Achondroplasia and Allied Variations, illustrated by a series of lantern slides. It expressed the views contained in Dr. Hart's communication to THE LANCET of Jan. 14th, p. 124.—The paper was discussed by Dr. BALLANTYNE, Dr. A. H. F. BARBOUR, Dr. W. FORDYCE, Dr. J. W. SIMPSON, Dr. JAMES RITCHIE, and Dr. A. COWAN GUTHRIE.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF PATHOLOGY.

*Tumours of the Brain.*

A MEETING of this section was held on Dec. 2nd, 1910, Mr. A. H. BENSON, the President, being in the chair.

Dr. T. G. MOORHEAD exhibited two specimens of Cerebral Tumour. The first was from a man, aged 42 years, who came to hospital some months ago complaining of pain in the head, of vomiting, and of difficulty in walking and standing. Five weeks previously he had fallen in the street and hurt his left knee. Previously he had not felt sick in any way. His special difficulty was in steering himself. There was no history of previous disease. He admitted having been a fairly heavy drinker, but nothing more. There was a slight increase of knee-jerks, no ankle clonus, and normal plantar reflexes. When standing he tended to fall backwards and to the right side. Nothing abnormal in the arms except a little incoördination on the right side. No disturbance of sensation. Mr. Benson found that the right optic nerve was in a state of extreme neuritis; no neuritis on the left side. The pupils reacted normally. No nystagmus. Owing to his mental state it was impossible to determine whether there was any hemiopia or not. No other cranial nerve involvement; no trophic or visceral symptoms. He was mentally dull and apathetic. The symptoms pointed to intracranial growth, and they trephined on the right side in the occipital region. Mr. Henry Moore

cut into the dura mater and displayed a cyst which contained about half an ounce of clear, yellowish fluid, epithelial in structure, and probably not malignant. Subsequently the patient improved very much. Symptoms of intracranial pressure again developed. Thinking the cyst might have filled up, they turned down the flap and put a drainage-tube into it. Fluid escaped, but not much. The patient was relieved, but again the symptoms of pressure returned, he became hyperæsthetic, and developed trophic lesions on his heels. They operated in the cerebellar region and found that the cyst did not originate there as they had suspected. The operation relieved the pressure, but the patient died in three or four weeks mainly from cardiac failure. They found in the frontal region of the brain a tumour of about the size of a walnut extending to the base of the frontal lobe; also a very small tumour in the temporal region. In the region of the operation was a definite hernial protrusion, an epithelial tumour apparently taking origin from the ependyma. It was apparently a compound malignant papilloma, corresponding to similar tumours found in the ovary. Ferrier had had a similar case, in which, with a frontal tumour, the symptoms were cerebellar. Dr. Moorhead had exhibited the specimen to emphasise the fact that cerebellar symptoms might be present in frontal tumours. Whether the frontal tumour was a development subsequent to the first operation was undetermined. The second specimen was from a man, aged 30 years, who noticed three weeks before admission that he was suffering from giddiness and failure of sight. Mr. Benson reported intense double optic neuritis, if anything more marked on the left side. There were increased knee-jerks on both sides, slight ankle clonus on the left side, normal plantar reflexes on both sides, marked nystagmus, slight diffused headache, and occasional vomiting. They determined to operate on the left side. Mr. Moore trephined and found evidence of great intracranial tension. The patient did not improve. They had no definite indication pointing to involvement of any other part of the brain. At the post-mortem examination a large tumour was found lying on top and slightly in front of the vermis of the cerebellum, compressing the region of the corpora quadrigemina. They had suspected that it was probably in the neighbourhood of the cerebellum. They had felt that the best thing was to relieve tension as rapidly as possible, and leave exploration for subsequent operation. In future cases of nystagmus, without other localising symptoms, he would be inclined to advise immediate exposure of the cerebellar region.

Dr. GEORGE PEACOCKE read notes on a case of Cerebellar Tumour. The patient, a female, aged 18 years, in December, 1909, had an attack of erythema nodosum; since then she had suffered on and off from headaches. In March, 1910, she had double pleurisy and was admitted to Adelaide Hospital on May 14th. Three weeks before admission she had been complaining of severe headaches, accompanied occasionally by vomiting; was constipated. After admission no headache for five days, then she awoke with severe headache. Pulse 40; pupils widely dilated, and respirations 46 and shallow. She was sweating profusely and was very restless. On May 21st Sir Henry Swanzy reported well-marked optic neuritis in each eye, especially the right. On May 31st her condition was: Knee-jerks well marked on both sides; no ankle clonus; plantar reflex normal; no difference in muscular power of legs; sensation normal; no incoördination; superficial reflexes normal; no loss of power in arms. Respirations between 30 and 40, irregular in time and depth. Eyes: Pupils equal, moderately dilated, respond to light and accommodation; slight nystagmus on extreme turning of eyes to the left, which also caused giddiness and nausea. Headache was paroxysmal, occipital and down the back of neck; most severe on left side. Unsteadiness of gait, tendency to fall backwards, but not to either side. Romberg's sign not present. Vomiting had no relation to food, and occurred frequently some days, others not at all. On June 2nd Mr. Gordon trephined over the left cerebellar lobe. The piece of bone removed was not replaced, and a hernia cerebri subsequently developed. The patient's condition did not materially improve and she gradually became less conscious—paralysis and epileptiform seizures appearing towards the end. She died about six months after the onset of definite brain symptoms. Professor Scott described the tumours found, one in each lateral lobe of the cerebellum. They seemed to have started in the neuroglia, and probably existed for some time as a glioma; later, from some reason, growth became more rapid and cellular, and they became indistinguishable from a sarcoma, which was almost typical at the margins of all three growths. This was associated with a formation of connective tissue, death of the neuroglia cells and some degeneration of the neuroglia fibrils, which with some altered blood from small hæmorrhages formed the sclerosed centre. The margins he looked on as a sarcoma, the particularly cellular type of the left tumour being caused by a very rapid growth, consequent on the altered physical conditions due to the trephining operation.

Dr. HAYES showed a specimen of Tumour of the Pituitary Body through the courtesy of Dr. L. Werner. The patient was an unmarried woman, aged 50 years, with some ocular disturbance. Her symptoms when she was X-rayed were: bitemporal hemianopia, both external and internal ophthalmoplegia, double optic atrophy, but no optic neuritis, no headache or vomiting. Towards the end of her illness she was slightly unsteady on getting out of bed. There were no symptoms suggestive of acromegaly or the typical changes in hands or feet. She was radiographed, and the negative showed considerable absorption of the pituitary fossa, absorption of the anterior clinoid process, as well as the posterior process, also absorption of the floor of the pituitary fossa. A negative showing a normal pituitary body was also exhibited and showed the body to be much smaller. Anterior to the tumour the base of the skull looked normal. He diagnosed tumour of the pituitary body. The patient became gradually worse and was totally blind before she died. She developed, finally, bulbar paralysis. Dr. O'Kelly removed the brain and a large tumour of the pituitary was found. As far as he knew it was the first case in the British Isles of which a diagnosis had been made from an X ray photograph, although it had been done on the continent. The exact histological nature of the case it was difficult to determine, but Professor E. J. McWeeney thought it was of an endothelial nature.—Dr. STOKES drew attention to a paper in the *Johns Hopkins Bulletin* by Harvey Cushing in which was a statement which the specimens put before them that evening had impressed upon him—namely, that brain tumours were extremely common. At the Johns Hopkins Hospital five years ago they had operated on six cases and in the last two years on 150. Five years ago they had not a single success. In the last two years they had actually cured 15 or 16 per cent., and had relieved and sent back to work about 60 per cent. of the remainder. They had about 10 per cent. of deaths soon after operation; not a single hernia cerebri or stitch abscess. Stress was laid on early diagnosis and on the point that the fields of vision for different colours were very early altered. From the number of cases which he had seen recently brain tumour was evidently increasing in Dublin.—Dr. K. E. L. G. GUNN said the fact that in two of the cases exhibited a tumour growth was found present at the necropsy at or close to the seat of the opening, which apparently was not there at the time of the operation, was suggestive that the injury might have something to do with the formation of such a growth.—Dr. A. R. PARSONS said that the specimens shown confirmed Horsley's views as to the value of the information to be obtained from destruction of the optic nerves, and he himself recently had a case of double optic neuritis which confirmed the view.—Dr. W. R. DAWSON said it had been held, though not absolutely proved, that the frontal lobes were the site of the moral faculties, and in many cases destruction or injury of the frontal lobe did interfere with the moral character. It was in the frontal region that chronic alcoholism was found to exert most of its deleterious influence. It was held some years ago that foreign bodies in the interior of the brain produced their effects by the extreme local anæmia caused. Where pressure was sudden or rapid the direct pressure itself might result in a seizure; but it was possible to explain epileptoid seizures by means of the extraordinary localised anæmia which they produced.—Dr. J. A. MATSON, Dr. R. J. ROWLETTE, Mr. F. K. CAHILL, Dr. O'FARRELL, and Dr. EUSTACE discussed the cases.—The PRESIDENT said that most of the cases showed very little alteration in the optic neuritis, but the operations were not performed until the cases were almost *in extremis*. Others with larger experience said that the optic neuritis did subside considerably after a decompression operation.

DR. MOORHEAD, in reply, agreed with Dr. Stokes as to the frequency of intracranial tumours. He was, however, confident that even a larger percentage of cures than the *John Hopkins Bulletin* reported would be effected later on. He did not think the actual irritation likely to produce growth. Nothing very positive could be said on the mechanism by which tumours produced their effects, but it was natural to attribute some of the results to increased tension. He used to assume that it was anæmia that led to epileptiform seizures, but the direct effects of pressure lately had rather impressed him. Hemiplegia in relation to tumours of the Rolandic region was, he thought, common. As to the origin of the tumour in the first case it was impossible to get any information. The original cyst completely disappeared at the necropsy. There was no communication with any of the ventricles of the brain. With regard to urinary symptoms, he had found them put down in the literature as fairly constant, but without any explanation. The second tumour was a psammoma.—DR. HAYES also replied.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society, held on Jan. 5th, Dr. F. Hinds, the President, being in the chair, Dr. D. G. Hall showed a man with a Malignant Growth at the back of the tongue. The patient, aged 46 years, had come as an outpatient to the hospital complaining of sore throat of two weeks' duration. There was a large excavated ulcer at the back of the mouth, which involved the base of the tongue, the soft palate, and the tonsil. It had a hard edge, and there was in the neck a mass of hard glands, which latter the patient had noticed for three months. It was too late to think of any surgical procedure. Dr. Hall remarked that this was a case, only too common, in which the patient discovered that he had cancer only when it was too late to operate.—Dr. L. A. Parry read, for Mr. J. Lawrence Hamilton, a short note on Dogs and Tuberculosis. He contended that where dogs had eaten or drunk tuberculous matter and subsequently scattered their dejecta wholesale on public footpaths this might possibly be one of the means by which tuberculous disease among men and other domesticated animals was propagated and diffused.—Mr. A. J. Martineau read notes of a case of Hæmorrhage from the Tonsil in a young married woman. She had an attack of acute follicular tonsillitis, which quite cleared up, but was followed by severe bleeding from the left tonsil, recurring the next day, though not so badly. On the following day another attack was so severe that she fainted. She was supposed to have lost at least two pints of blood. When the throat was examined the left tonsil was seen to project across the pharynx to meet the opposite tonsil, which was only moderately swollen. Slight bleeding was going on, the blood being rather bright and appearing to come from the upper and back part of the tonsil. The next day the tonsil was removed with the guillotine, and in doing this a cavity filled with blood-clot which had displaced the tonsil from its bed was exposed. The hæmorrhage did not recur. Mr. Martineau also read notes of a fatal case of Otitis, in which the question of delayed chloroform poisoning arose. The patient was a young woman, aged 18 years, who had a mild attack of measles, followed a few weeks later by an attack of otitis. Earache became severe, and Mr. Martineau decided to incise the membrane, and to follow this the next day by a radical mastoid operation, if the symptoms were not relieved. An anæsthetic was given and the membrane incised, but the next day she was still very ill, with a temperature of 103° F., restlessness, and delirium. A convulsion followed. Delayed chloroform poisoning was suspected. In favour of this view were great restlessness, sighing respiration, and a sweet odour of the breath. The urine, however, did not give any reaction for acetone. There was no localising symptom of meningitis. She was given bicarbonate of soda by the mouth and rectum, but in the night she had another convulsion, and her temperature was 106·4°. She was better next day and partly conscious. She gradually got worse mentally and talked incessantly, the back of the neck became stiff, and she had occasional squint. She passed into a state of coma and died a few days later. Mr. Martineau pointed out that if delayed chloroform poisoning was liable to be confused with meningitis another terror had been added to the diagnosis of this disease. He personally regarded the case as one of meningitis.—Dr. Hall and Dr. H. Galt read clinical and bacteriological notes on a recent series of cases of Enteric Fever admitted to the Sussex County Hospital. An attempt was made to show that the Widal reaction might have a prognostic as well as a diagnostic value. Of three cases that ended fatally, in two the reaction was negative throughout, although typical typhoid ulcers were found post mortem; in the third case the reaction was positive only the day before death. In one patient the presence of enteric fever was unsuspected until the admission of her brother to hospital. The symptoms had been masked by a coexistent chorea and acute endocarditis. The brother was sent into hospital as a case of perforation, but a white cell count showed only 2700, and he recovered without operation. On his discharge from hospital he was notified to the medical officer of health as a carrier, but no further examination or treatment was permitted by the parents. In one case the onset was sudden, with a temperature of 104°, sore-throat, and inflammation of the glands of the neck. There was a dull red rash over the neck and buttocks for the first two days, and later an eruption of rose spots. One of the fatal cases was the subject of mitral stenosis of old standing. Acute endocarditis supervened on the diseased valve. In this patient and one other the immediate cause of death was intestinal hæmorrhage.

# Reviews and Notices of Books.

*The Diseases of China, including Formosa and Korea.* By W. HAMILTON JEFFERYS, A.M., M.D., Professor of Surgery, St. John's University, Shanghai; and JAMES L. MAXWELL, M.D. Lond., Medical Missionary in Formosa. With 5 coloured plates, 11 nosographical maps, and 352 illustrations. London: John Bale, Sons, and Danielsson, Limited. Pp. xvi.-720. Price 25*s.* net.

AMONGST the numerous treatises on tropical diseases that have enriched our language of late years no work on those of China has appeared. This omission the authors, who have worked in that country now for a long period of time, have rectified, and a perusal of their book will show how well they have done it. Their aim has been to present to medical men working in China a concise account of the special diseases that they will meet with in their own practice in that empire. The work is illustrated largely by photographs of disease conditions amongst the Chinese, the majority of which have never before been published. Again, special references to the modification of the tropical diseases met with, as brought about by the environment in China, are detailed, so that the student has under his hand a thoroughly trustworthy account of the morbific conditions met with in this interesting portion of the globe.

The work opens with the conditions of practice in China in which we read of its various modes, the Pharmacopœia of China, and its native surgery, amongst other points. Then follows an account of the nosography of the country, after which we come to the consideration of the various diseases. An excellent account is given of plague in all its respects. This article should be of special interest to us in England at the present moment, because the disease has now shown itself to us here, while there is an epidemic just declaring itself in China. In their remarks on enteric fever the authors show, as is the case in the Punjab, that the typical chart is the exception rather than the rule. They wisely lay down the necessity of examining the blood in all cases of fever in the tropics lasting for more than a day or two. Rose spots are usually absent in China, and here again there is a similarity to many cases occurring in India. In the medical treatment salol is stated to be the least harmful depressant amongst the antipyretics. The authors apparently have had no experience of that excellent drug—oil of turpentine—advocated by Sir Robert Simon of Birmingham. In the treatment of cholera, as regards prophylaxis, stress is laid upon the exclusion of flies from the house; we do not

find any mention of inoculation, which has proved so successful according to the results obtained by Haffkine in India. Nor does the method of treating the wells by permanganate of potassium, also of extreme advantage in India, appear to have come under the experience of the authors. Opium is not recommended, we are glad to see, to be given by the mouth; when given, it should be administered hypodermically, as morphia with atropine. With respect to the injection of saline solution, the researches of Rogers, with the good results obtained, are worthy of mention in a second edition. A very good recommendation is that of an ordinary quart size of Thermos flask for keeping the infusion at a constant temperature.

In their remarks on leprosy the authors do not seem, as has been the case with many others, to have found much benefit from nastin in the treatment of this affection. A very exhaustive chapter is accorded to the subject of malaria, this being, indeed, one of the best sections of the work. Then follow the subjects of blackwater fever, kala-azar, and yaws, concluding the section on the protozoal diseases. With regard to yaws we should like to have known the opinion of the authors concerning its supposed relationship to syphilis.

Next are considered the diseases caused by metazoal parasites. Here the student of tropical affections will find a very valuable exposition, as China is pre-eminently the country wherein these diseases are rife. Those due to the parasites of the circulatory system, of the lungs, and of the alimentary canal and liver all receive due attention. This section concludes with a list of the metazoal parasites found in China, illustrated by beautiful drawings, and from this list one can judge what an unfortunate wealth of material exists in this country. Accounts of the diseases of the alimentary canal, of the liver and spleen, and of the nervous system follow. In the treatment of sprue santonin is held to be the only drug worth serious consideration. This remedy has been tried at the Seamen's Hospital, Albert Docks, but without any good results. It would, however, appear that santonin is of use at the commencement of the affection, and this may account for its ill-success at our home institution, as the cases therein admitted have already had the disease for some period.

Amongst the remaining chapters of this valuable work is an excellent one on the undifferentiated fevers, in which are described glandular fever, seven-day fever, urticarial fever, double continued fever, and place fevers. The work concludes with the surgical affections of China and their operative treatment, and with some remarks on hospitals and hospital construction. To this is subjoined an excellent account of the laboratory methods employed for the examination of the blood and fæces.

In concluding this brief review we cordially congratulate the authors on their treatise, which must surely prove of exceptional value to the practitioner of medicine in China.

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*A Text-Book of General Bacteriology.* By WILLIAM DODGE FROST, Associate Professor of Bacteriology in the University of Wisconsin; and EUGENE FRANKLIN M. CAMPBELL, Professor of Bacteriology in the Ohio State University. Illustrated. New York: The Macmillan Company. 1910. Pp. 340. Price 7*s.* net.

THE early text-books on bacteriology were able, owing to the limited extent of our knowledge, to take a general survey of the whole subject. The modern text-book has been forced, on account of the immense growth of the science, to treat it from the point of view of the specialist, whether he be pathologist, agriculturist, or technician. As a result, the general principles which underlie and link together the several special aspects from which bacteriology may be viewed are prone to be ignored by the student, and there can be no doubt that a book dealing with these general principles and written from the point of view of the biologist rather than from that of the pathologist or other specialist is wanted. It is to fill this want that the present book has been written, and it will no doubt prove very useful, as it presents knowledge acquired during recent years which is often crowded out of the special treatises. Such a work is not necessarily of an elementary character and certainly calls for much wide and accurate knowledge on the part of its writers. The headings of the various parts into which the book is divided—morphology, methods of study, taxonomy (that department of natural history which treats of the laws and principles of classification), general physiology, biology of special groups, and distribution—suffice to show the scope of the work.

It is not necessary to review in detail the several sections. The portions which deal with general physiology and the biology of special groups are perhaps the most important and best treated. There is occasionally some uncertainty as to the exact intention of the book; such uncertainty is seen in the section on the relation to environment, where a general discussion on disinfectants passes into a detailed description of the practical use of formaldehyde, though in another part of the book, quite properly, the student is referred for details as to culture media to a laboratory manual. Any author who wishes to write clearly and decidedly about the chemical products of micro-organisms must be dogmatic, so contradictory and scanty is our knowledge, and on this ground we cannot complain that the term "zymogenic" is arbitrarily restricted to those bacteria which produce amylolytic enzymes and the term "fermentation" to the decomposition of carbohydrates, but if a similar courage had been employed in dealing with putrefaction it would have tended to clearness. There is some repetition in different sections of the book and not infrequently on the same page. Possibly the repetition and the uncertainty of object may be due to the rather hasty preparation in book form of what appears to have been the subject-matter of a course of lectures. There is evidence of haste in the rather numerous slips and misprints.

The book will certainly prove of service, and the slight blemishes can be easily removed when a second edition is called for. The type and general appearance of the book are good.

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*Pellagra.* By Dr. A. MARIE, Physician to the Asylums Department of the Seine; Director of the Laboratory of Pathological Psychology, École des Hautes Études, Paris; Editor-in-chief, *Archives de Neurologie.* Authorised translation from the French by C. H. LAVINDER, M.D., Passed Assistant Surgeon U.S. Public Health and Marine Hospital Service, and J. W. BABCOCK, M.D., Medical Superintendent, State Hospital for the Insane, Columbia, South Carolina. With 19 illustrations and 4 charts. Columbia: State Company Publishers. 1910. Pp. 434.

THE translators have added some useful chapters to the original work, have contributed some excellent illustrations of the skin lesions taken from photographs of patients in Cairo, Italy, Illinois, and South Carolina, and have provided two bibliographies, one of works written in English, and another, which does not profess to be complete, of contributions to the subject in foreign languages.

It is not too much to say that the work now before us is a very valuable aid to anyone wishing to obtain an elementary grasp of the subject. The list of American references shows very clearly the interest which has been awakened in pellagra in the United States since 1907, for four of the pages are sufficient to enumerate the publications in the English language dating from 1791 to 1906, while 13 are required for the remaining four years. One of the earliest references is to an article in THE LANCET which appeared 84 years ago.[1]

[1] THE LANCET, 1826-7, vol. xi., pp. 476-478.

Dr. Marie's book appeared in Paris in 1908, and is abridged from Professor C. Lombroso's classical treatise on pellagra. The present work is prefaced by two introductory preludes by Lombroso, the latter of which was only received by the translators shortly before the death of the professor. The first mention of pellagra in American literature seems to have been in 1864, when Dr. J. P. Gray published a case occurring in a lunatic. Other cases were reported occasionally, but were not officially recognised until 1907, when an outbreak in an asylum was reported upon. Two pellagra conferences have been held in Columbia, and the most recent statistics show that in the United States pellagra exists, or is suspected to exist, in 33 States, that the number of cases in that country is about 3000, and that a total of 5000 individuals have become pellagrous during the last five years. Dr. Marie, a true disciple of Lombroso, devotes several pages to the discussion of spoiled maize as the cause of pellagra, but the translators, one of whom had the opportunity of coöperating with Dr. L. Sambon last year in Italy, when he was working there as the representative of the Pellagra Investigation Committee formed in London last year (*vide* THE LANCET, Feb. 10th, 1910, p. 451), are anxious that American readers should preserve a judicial mental attitude with regard to the etiology of the disease. They by no means accept the dominant dogmatism that spoiled corn is responsible for the causation of pellagra. The details of the theory that some unknown protozoon, insect-borne, probably by Simulium reptans, will be discovered to be the cause have been furnished by Dr. Sambon, and the translators have these in their mind, though sum up by saying that the belief that the disease is in some way connected with the use of corn as an article of food is so universal as to render its rejection well-nigh impossible except in the face of demonstrative proof to the contrary. "Sambon's idea," they say, "rests only on an argument by analogy, and is at present little more than a suggestion, but a highly interesting one. It may possibly lead to important developments at the hands of investigators." They quote the opinions of two entomologists in Washington, who believe that at present there is no apparent connexion in the Southern States between pellagra and the simulium. Dr. Marie, who has studied the disease in Italy and Egypt, finds that the psychic phenomena may include irritability, loss of memory, obstinate mutism, melancholia, systematised delusions, fleeting hallucinations, sitophobia, or hydromania. He believes in the existence of hereditary pellagra, of which he has seen instances in Italy. The chapters on pathological anatomy and treatment are mostly abridged from the writings of others.

This book ought to be in every medical library.

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*Studies in Immunity.* By Professor PAUL EHRLICH, Privy Councillor and Director of the Royal Institute for Experimental Therapy, Frankfort, Germany; and his Collaborators. Collected and translated by Dr. CHARLES BOLDUAN, Bacteriologist, Research Laboratory, Department of Health, City of New York. Second edition, revised and enlarged. New York: John Wiley and Sons; London: Chapman and Hall, Limited. 1910. Pp. 712. Price $6.

THE appearance of a second edition of the translation of Ehrlich's "Studies in Immunity" is a welcome sign of the interest taken in this field of research—the most fascinating perhaps of modern developments of pathology. The theory put forward by Ehrlich to explain the phenomena still holds the field as the most intelligible account of this difficult subject; and while some observations—notably those with regard to the quantitative relations holding between the two bodies, amboceptor and complement, which take part in such reactions as hæmolysis—are difficult to reconcile with the doctrine, yet it has shown itself extraordinarily flexible and adaptable to a multitude of phenomena. It has proved above all, as we previously noted, a fertile hypothesis, suggesting new trains of experimental research and leading to extension of knowledge.

Most of the present book is the same as the former edition which we reviewed in the year 1906, and does not therefore need further notice here. Eight new chapters have, however, been added in this edition. The first of these, by Dr. Max Neisser, deals with the multiplicity of antibodies occurring in normal serum, the experimental evidence adduced being the action of normal rabbit serum on different bacteria and the possibility of removing the bodies active against any particular species by addition of the appropriate bacterium, while the potency against other germs is left intact. A second, by Dr. J. Morgenroth, is devoted to the binding of hæmolytic amboceptors, and shows that if corpuscles are sensitised with an excess of amboceptors, some of the latter may, on addition of more corpuscles, leave their first attachment and adhere to the latter. A chapter by Dr. Hans Sachs deals with the joint action of normal and immune amboceptors in hæmolysis and combats the views put forward by Bordet and Gay, and a second by the same writer discusses the power of normal serum to deflect complement, being also directed against Gay, who is stated to have been guilty of a grave experimental error. Dr. Sachs and Dr. J. Bauer write at considerable length on the joint action of several amboceptors in hæmolysis and their relation to the complements, and Dr. C. H. Browning treats of anti-amboceptors. Dr. R. Otto and Dr. Sachs discuss the dissociation of toxin and antitoxin, especially the curious "paradoxical phenomenon" discovered by Behring, but while confirming the truth of the observation in the case of several different toxins they fail to give an explanation.

The most interesting chapter of all to the general reader is perhaps the last, in which is contained Ehrlich's Nobel lecture on the Partial Functions of Cells. In it the author applies his "side-chain" hypothesis to explain certain phenomena of increased resistance offered by particular races of trypanosomes to the action of poisons. He suggests that immunity may result in some cases from disappearance of all the receptors capable of anchoring a poison. He also believes that the death of a parasite is brought about by the occupation of all its nutrient receptors by some antibody, so that it can no longer obtain nourishment from its surrounding medium. He states, finally, that by means of the remedy, arsenophenylglycin, it is possible to kill off any trypanosome in any animal, presumably including man—a triumph of therapeutics, if it is confirmed.

This edition has the great advantage over the former that it is furnished with an index. There are a good many misprints in the new chapters, such as "diagonosis," "sreum," "ilght," "stongly," and so forth; the curious idiom "(Gay) believes to have furnished ....." for "believes that he has furnished," occurs more than once. We do not recollect meeting it elsewhere in American books; it certainly is not English.

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*Otitic Cerebellar Abscess.* By Dr. HEINRICH NEUMANN of Vienna. Translated by RICHARD LAKE, F.R.C.S. Eng. London: H. K. Lewis. 1909. Pp. 156. Price 4*s*.

THIS little monograph reaches that high standard which a work coming from the pen of so eminent a continental authority as Dr. Neumann would lead us to expect. After an opening section on statistics, which are very fully dealt with, comes one of the best in the book on etiology and pathological anatomy. The various paths of infection are discussed, and an excellent and up-to-date account is given of the bacteriology of cerebellar abscess, including the types

of abscesses resulting from different organisms. Symptomatology is admirably dealt with under the three headings of focal symptoms, general symptoms, and remote effects. In the first of these the question of nystagmus is extensively gone into, and a description is given of the results obtained on functional examination of the labyrinth on irrigation with hot and cold water in cases of labyrinthitis and cerebellar abscess. The next three sections describe the initial, manifest, and terminal stages of a case of cerebellar abscess.

Sections VII. and VIII. are devoted to diagnosis and differential diagnosis respectively. The great difficulty often experienced in diagnosing cerebellar abscess is pointed out, and stress is laid on the importance of performing lumbar puncture as a means of obtaining information as to the character of the cerebral changes. Dr. Neumann states that in his collection of 67 cases in which lumbar puncture was performed 42 gave positive and 25 negative results. Prognosis is shortly and efficiently dealt with. In the section on operation on cerebellar abscess Dr. Neumann commences by indicating the two methods of procedure—viz., operating from the skull and from the middle ear; the former he justly condemns, except in very urgent cases, on the grounds that the abscess is difficult to find and that the primary focus of suppuration is not extirpated. Various modifications for opening the posterior fossa are mentioned, and the method employed by the author is given at some length. We notice Dr. Neumann's advocacy of digital examination in cerebellar abscess, a method with which we do not think many English surgeons will agree. A short section on after-treatment follows, and the remaining 84 pages—more than half the book—are devoted to "Details of Cases," taken from various sources, continental, English, and American.

Mr. Lake is to be congratulated both on his choice of the work and the translation he has made. The book reads as if it were originally written in English.

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*Nutrition and Dietetics: a Manual for Students of Medicine, for Trained Nurses, and for Dietitians in Hospitals and other Institutions.* By WINFIELD S. HALL, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School, &c. London and New York: D. Appleton and Co. 1910. Pp. 315. Price 7*s.* 6*d.* net.

WE learn from the preface that this book embodies the author's teaching to nurses and students. The book is therefore elementary in character, but it is simply and clearly written and, as a rule, practical in the advice given. After a few pages on the needs of the body and on the natural foods prepared by nature for young animals, the writer proceeds to a definition of food and a classification of foods and food-stuffs. Next follows a section on digestion, assimilation, and excretion; then one on diet in health; and finally, a discussion of diet in disease in general and in special diseases in particular. In the appendices are given a few recipes for invalid preparations, and directions for some simple experiments to illustrate the principles involved in feeding. In the body of the book the influence of Chittenden's researches is manifest. We doubt whether students in this country would be content with the diet here prescribed for their needs: for breakfast a portion of oatmeal, with sugar and cream, two slices of toast, a cup of cereal coffee, and a bunch of grapes; for lunch soup, bread and butter, fruit, cake, and a glass of milk; for dinner meat and two vegetables, bread-and-butter, fruit, and rice pudding. Probably they would feel entitled to the "football player's" allowance, in which a couple of eggs are added to the above breakfast and two lamb chops to the lunch. It seems difficult for authors to maintain a scientific attitude in discussing the use of alcoholic beverages. Here we find beer and cider classed as "intoxicants" and put in a separate class from "beverages," such as tea and coffee, although the latter in excess may be toxic and the former in moderation do not intoxicate. Further, alcohol is termed a "pseudo-food," since, although it is capable of raising body-temperature by its combustion, its action as a vaso-dilatator causes loss of heat. Presumably alcohol *plus* a great coat would constitute a food.

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*Enzyklopädie der Mikroskopischen Technik. (Encyclopædia of Microscopical Manipulation.)* Edited by Professor PAUL EHRLICH, Dr. RUDOLF KRAUSE, Professor MAX MOSSE, Professor HEINRICH ROSIN, and the late Professor KARL WEIGERT. Second edition. Berlin and Vienna: Urban und Schwarzenberg. 1910. Vol. I.: A–K, pp. 800, with 56 illustrations. Vol. II.: L–Z, pp. 680, with 111 illustrations. Price of the two volumes, 50 marks.

THE microscopical investigation of the structure and functions of animals and plants is a subject sufficiently extensive to fill many volumes, but by judicious selection the editors of the present work have given an adequate account of the most useful methods and appliances in about 1500 pages. Professor Ehrlich, his co-editors, and the numerous contributors whose names appear on the title-page have evidently spared no pains as authors and compilers, and it may be safely predicted that this reissue of their encyclopædia, embodying as it does the principal advances that have been made during the last seven years, will immediately become a standard work of reference.

Of the longer articles in the first volume mention may be made of those on Blood and Blood Parasites (46 pages). Celloidin and its Use for Embedding and other Purposes (28 pages), Chromic Acid and many other Chromium Compounds (18 pages), Experimental Embryology and Embryological Technique (97 pages), Stains and Staining (32 pages), Fixation (12 pages), Formaldehyde (14 pages), Freezing Methods (12 pages), Gold in Microscopy (19 pages), Golgi's Methods (32 pages), Skin (12 pages), Injection of Blood Vessels and Lymph Vessels (70 pages), and Bones, Teeth, and Cartilage (70 pages). In the second volume there are similarly elaborate separate articles on the Examination of Living Objects and Fresh Tissues; on Maceration; on Methylene Blue; on Micrometers, Micrometry, and Micrometer Screws; on Microphotography; on Microscopes; on Lamps; on Microspectroscopy; on Microtomes; on the Nervous System; on Osmiumtetroxide; on Paraffin and its Use for Embedding and other Purposes; on Plague; on the Projection of Microscopic Images; on Protozoa; on the Reconstruction of Specimens from Sections; on the Spirochæta of Syphilis; on the Tubercle Bacillus; on Artificial Digestion; on Widal's Reaction; on Worms; and on Drawing Microscopic Objects. These few selections from hundreds of articles, many of them necessarily short, will suffice to show the practical nature of the information conveyed in these two volumes.

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*Diagnosis and Treatment of Diseases of Women.* By HARRY STURGEON CROSSEN, M.D., Professor of Clinical Gynæcology, Washington University, Gynæcologist to Washington University Hospital, and Director of the Gynæcological Clinic. Second edition, revised and enlarged. With 744 illustrations. London: George Keener and Co. 1910. Pp. 1025. Price 25*s.* net.

IN our notice of the first edition[1] we called attention to the many merits of this book. It deals almost entirely with diagnosis and treatment, and that it does this very fully is evident when we see that the total number of pages is 1025, an increase of over 200 on the first edition. The special feature of this work—namely, the illustrations—has been considerably added to in the present edition. They now number 744 and are excellently reproduced. The author has done his work well, if at somewhat too great

[1] THE LANCET May 2nd, 1908, p. 1281.

length, but there is a great deal of very useful information given, and several subjects are considered in a much fuller manner than is usual in the ordinary text-books of gynæcology.

Of special interest is the section on foreign bodies left in the abdomen, and the very useful method is adopted by Dr. Crossen of obviating such an accident by using long strips of gauze folded up and contained within a linen bag, from which they are withdrawn as required during the operation. The strips are of such a length that it is physically impossible for one to be left in the abdomen, and any such accident is further prevented by the extremity of each strip being fixed to the bottom of the linen bag containing it. For many years certain English gynæcologists have used with the same object gauze rolls too long to be lost in the abdomen if they are properly used, that is if they are gradually unrolled as each successive portion becomes soiled, being also never cut in any circumstances. But that it is possible to leave even a gauze roll 2 yards long and 6 inches wide in the abdomen if it is used improperly and introduced unrolled is unfortunately a fact. We think that Dr. Crossen's method of using a gauze bag to contain the rolls is a very good one and worthy of imitation. That the list he gives of foreign bodies left in the abdomen is far from complete we are sure, since without doubt the majority of these cases are never published.

The section dealing with medico-legal points in connexion with gynæcological cases has been amplified and a number of interesting cases are cited in which legal action has been taken. In selecting illustrations from other authors Dr. Crossen has not exercised the care he might in making sure that the legend is in all cases correct. For example, in Fig. 342, labelled mucous polypi of the cervix, four, and, we think, five, of the wax models do not represent mucous polypi at all. The common error of Gärtner for Gartner we notice in several places.

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*Physical Examination and Diagnostic Anatomy.* By CHARLES B. SLADE, M.D., Chief of Clinic in General Medicine and Instructor in Physical Diagnosis in the University and Bellevue Hospital Medical College, New York. With 36 figures in the text. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 146. Price 6*s.* net.

OF the 146 pages included in this work 10 at the end are devoted to the index and 10 at the beginning to the table of contents and the preface. Of the 36 illustrations in the text, some of which, by the way, are sadly out of drawing, several are so often repeated that in reality 25 different drawings alone exist, and one of these merely depicts a stethoscope. For the rest the text is well spaced and the type large and distinct, and therefore the subject matter of the book is not unduly full. Yet even considering the brevity of the book it conveys the impression, when its reading is completed, that there is a good deal less in it than, judging from the title, we might have expected to find.

The book is intended to be a text-book of physical examination, and a compendium of "diagnostic anatomy"—or the anatomy that should be at the command of the physician to aid him in carrying out the examination of his patients and determining the localisation of their diseases. In writing such a work it may be said with truth that the author designed to cater for a real need. A Medical Anatomy, as distinct from a Surgical Anatomy, is wanted; but the present volume does not appear to meet the want.

The author wastes space in introducing subjects of which he has nothing to tell the student save that they are not subjects to be learned from books, and even on points where book-teaching may be quite definite a certain obscurity of style makes his directions somewhat difficult to follow. For instance, the student is told concerning the use of the stethoscope that "there will be occasions when it is necessary to auscultate and a stethoscope is not at hand. The condition of the subject in some cases and in others the dictates of modesty will demand the use of the stethoscope through all of auscultation." Other passages could be quoted as, or even more, involved, and the description of the inspiratory sound is given in one complex sentence containing no less than 75 words. We do not want to be flippant, but the word-painting of the description is not half so effective in producing the impression of the inspiratory sound as is the result of the effort to read the sentence aloud. Such a phrase as "there is a crackling fremitus detected if we mash under our fingers soft tissues" seems to us to imply that the American use of words is not the same as ours; but the transatlantic origin of the book cannot excuse "calumnæ carnæ, and chordeæ tendinæ" (p. 100). Some other curious passages hardly come under the heading of being imperfect through mere complexity: for instance, of splashing sounds the author says: "They may therefore arise intrapleural or intrapulmonary, as well as in the hollow abdominal viscera."

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## LIBRARY TABLE.

*Hypnotism and Treatment by Suggestion.* By J. MILNE BRAMWELL, M.B., C.M.Edin. London: Cassell and Company, 1910. Pp. 216. Price 5*s.* net.—This is one of the volumes of Messrs. Cassell's "Modern Methods of Treatment" series, and it can confidently be recommended to all who in the course of their professional work are confronted with cases of functional nervous disease that seem to resist ordinary therapeutic measures. The whole book is pervaded by an atmosphere of common sense, preparing us for the good results claimed by the author and described by him in detail. He repeatedly and explicitly states that every stage of the so-called hypnotic condition is a conscious one, and that by hypnosis is not meant a condition resembling sleep, but one of increased suggestibility, and that the various phenomena have resulted from the suggestions made to the patient while in this state. Dr. Bramwell affirms that the whole object of suggestive treatment ought to be the development of the patient's own will power and of his control of his own organism. His long experience leads him to say that possibly the most important thing is not so much the method as the man behind the method, and it would be interesting if he, or someone of experience in these paths of therapeutics, would try to express scientifically just wherein the differences between the successful and the unsuccessful practitioner consist.

*A Manual of Medical Exercises.* By PERCY G. LEWIS, M.D. Brux., Honorary Medical Officer to the Victoria Hospital, and Surgeon to St. Andrew's Convalescent Home, Folkestone. Second edition. Illustrated. London: H. K. Lewis. 1910. Pp. 66. Price 1*s.* 6*d.*—The object of this little book is to form a kind of materia medica of exercises from which can be prescribed the special exercises each patient is required to perform by simply noting down the numbers instead of writing the exercise out in full. All the exercises detailed are meant to be performed with slowness, ease, and grace, without jerking or holding the breath. No exercise is to be continued after the first feeling of fatigue is induced. The book is divided into four parts: Part I. deals with home exercises; Part II. comprises exercises for home or gymnasium; Part III., gymnasium exercises alone; and Part IV., respiratory exercises. From increased experience, the author states he is sure that those exercises are the most useful which are performed without apparatus. This book should prove of service to practitioners who find it necessary to prescribe modified courses of physical exercises for patients the tone of whose muscles is at fault and requires

some stimulus to increase the circulation of both blood and lymph.

*The History of St. George's Hospital.* By GEORGE C. PEACHEY. Part II. London: John Bale, Sons, and Danielsson, Limited. 1910. Price 2*s.* 6*d.* net.—This is the second instalment of Mr. Peachey's interesting history of St. George's Hospital, and includes notes upon life in London during the eighteenth century, especially in its bearing on medicine. It commences with a description of London in 1731, a time when English physicians (of whom it was said that they seldom got their bread until they had no teeth with which to eat it) were to be found at Batson's or Child's Coffee House, usually in the morning. The chapter closes with an account of the conversion of Lanesborough House into St. George's Hospital. Lanesborough House, the home of the Lane family, was situated at the corner of the Green Park and Hyde Park, but the neighbourhood, of course, wore a very different aspect from that which it wears to-day, and the author's brief but vivid description of the London of Addison and Steele, Smollett, Fielding, and Hogarth, as well as his incidental references to London of the seventeenth century, form not the least interesting part of the chapter. Included in this part is a reproduction of an engraving of St. George's Hospital by Isaac Watt, about 1736, and a plan of Lanesborough House as it appeared when taken over by the trustees for the hospital in 1733. There is also a pedigree of the Lane family. Publications of this kind do not always receive the support which they deserve, and in the present case it is possible that the medical as well as the lay public may not fully appreciate the extreme interest of the book. It certainly should appeal to all past and present students of St. George's Hospital, but the medical profession generally might like to learn the history of an institution associated for years with men like John Hunter, Edward Jenner, Mathew Baillie, Benjamin Brodie, and Thomas Young.

*Medical Guide to German, Austrian, and Swiss Watering Places.* Edited by HAROLD MORRÉ, M.D. Second edition. Berlin: Eugen Schachtel. 1910. Pp. 153. Price 2*s* 6*d.*—This book contains a description of the principal continental watering-places, with copious illustrations; also an index of morbid conditions that form indications for certain resorts. It may aid the practitioner in selecting a proper destination for those of his patients who are convinced that a foreign excursion is necessary for the restoration of their health and are fortunately able to afford one.

*Vaccine Therapy: Its Administration, Value, and Limitations.* London: Longmans, Green, and Co. 1910. Pp. 216. Price 4*s.* 6*d.*—This is a reprint in book form from the Proceedings of the Royal Society of Medicine of the discussion on Vaccine Therapy which began with an address by Sir Almroth Wright on May 23rd, 1910, and occupied six successive meetings. Sir Almroth Wright's address was published in full in THE LANCET of Sept. 23rd, together with an abstract of the discussion. The republication of the papers in book form will be very useful to those practitioners who desire to render themselves conversant with the present status of vaccine therapy from many view points.

"*Medicus,*" *Guide Annuaire des Étudiants et des Praticiens* (*Médecine, Chirurgie, Odontologie, et Pharmacie*). Par A. ROUZAUD. Préface de M. le Dr. YVON. Paris: 41, Rue des Écoles. Pp. cxliv.-1440. Price 5 fr. (4*s.* 2*d.*)—This book is a continuation of a series of annual guide-books which have appeared for many years. The subject-matter is carefully classified into five parts: (1) Matters relating to the teaching of medicine, pharmacy, and odontology, with programmes of the various competitions for the posts of externe, interne, &c.; the entrance requirements for the military, naval, and colonial medical services; a list of the hospitals, and a plan of the "Assistance Publique" of Paris, insane asylums, learned societies, students' societies, &c.; (2) lists of the faculties of the provincial and colonial medical schools; (3) a directory, both alphabetical and local, of physicians, surgeon-dentists, dentists, and pharmacists; (4) a list of the faculties of the more important foreign medical schools, which is followed by a dictionary of legal medicine by M. Marcel Petit, of the Paris Court of Appeals; and (5) a collection of laws, decrees, and ordinances relating to the practice of medicine and pharmacy, the protection of the public health, sanitary police, public assistance, occupation accidents, health resorts, mineral springs, &c. The book undoubtedly contains much valuable reference matter, though in the section on foreign medical schools we note a number of important omissions as regards Great Britain and the United States. Accompanying the volume is a paper-bound engagement book, "Agenda de Medicus," for the period between Oct. 1st, 1910, and Oct. 1st, 1911, each day having lines for half-hour periods from 8 A.M. to 6.30 P.M.

*Medical Etiquette.* By Dr. GEORGE SURBLED, Professor of Deontology at the Paris Post-Graduate Medical School. Translated from the second French edition by W. P. GRANT, M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond. With a preface by Sir DYCE DUCKWORTH, Bart., M.D., LL.D. London: Sherratt and Hughes. 1910. Price 5*s.* net.—We agree with Sir Dyce Duckworth's words in his preface that "this work is certainly remarkable as an exposition of the views of an experienced, right-minded physician and Christian," and we join in his recommendation of its study to the medical profession. What is right conduct in one country is right conduct in another, and the fact that the rules of deontology which are sound for France should be sound also for Great Britain is sufficient proof that medical etiquette is not represented by abstruse rules, but is in truth the plan for a broad kind of professional conduct founded on the great maxim of Christianity, "Ye shall do unto others as ye would they should do unto you."

*Human Anatomical Model (Female). A Life-size Reproduction of the Dissections of the Various Parts of the Human Body.* With Descriptive Index by FREDERICK NORMAN, F.R.C.S. Eng., and W. G. STONE, M.D. Oxon., F.R.C.S. Eng. London: Gresham Publishing Co. Price £2 5*s.*—On two stout folding cardboards opening lengthwise is displayed the full-sized figure of a woman. Layer by layer the coverings are turned aside, showing first the superficial, then the deep muscular layers. The internal organs of the abdominal and thoracic cavities in like manner can be turned back, displaying their relations one to another, until finally the skeleton is reached. There is also a detachable portion of the lower abdomen and pelvis in which are displayed the interior of the uterus and its contents at varying stages of pregnancy. The descriptive index is very clear as regards identifying the various organs as they come into view, and the model will prove of assistance to senior students and practitioners who may have occasion to review their anatomy, especially in regard to anatomical relations. It would have been more valuable for beginners if the converse process had been added, by making an alphabetical index of all the parts shown with a reference to the different plates in which they could be found, and perhaps in any further issue of a useful publication the possibility of this addition will be considered.

*Stocks and Shares.* By HARTLEY WITHERS. London: Smith, Elder, and Co. 1910. Pp. 371. Price 7*s.* 6*d.*—Mr. Hartley Withers, an authority on this subject, places on his title page a quotation from "An Essay on Public Credit," written 200 years ago—"I am to speak of what all People are busie about, but not one in Forty understands." It is widely said, and we have reason to believe that there is a good deal of truth in the remark, that there is no class of the community less able to deal advantageously with their savings and

incomes than medical men. As a class medical men are not rich, those with the largest incomes having often unduly heavy expenses as well as very little leisure to think of their own concerns, so that it may be replied to those who criticise our unbusinesslike methods with regard to our savings, that the savings themselves do not in the aggregate amount to much. But to read such a book as this is to learn that the art of sound investing is not beyond either those whose time is very much occupied or those who have little to invest.

*The Chained Titan.* By W. G. HOLE. London: G. Bell and Sons. 1910. Pp. 104. Price 4*s.* 6*d.* net.—Mr. W. G. Hole has produced in the "Chained Titan" what to our mind is a rather remarkable poem. A modern pilgrim, a social worker at home, who is familiar with all the terrible defaults of our present economic conditions, finds himself at a little seaport on the Greek coast and rows out alone to watch the sunset. He is conducted by Hermes to a valley where Chaos is discoursing on the signs of the times to the other gods, finding the resistance of man to the forces of pestilence, plague, and famine growing stronger and the influence of the gods waning. The pilgrim then comes across Prometheus undergoing his perpetual torture and the chained Titan protests against the way in which mundane affairs, as he has learned of them, are conducted He himself had suffered in order to place in the hands of men the opportunities of advancing in the arts of civilisation, but it seemed that as men grew powerful against the paralysing influences of the old gods they became tyrants themselves, the strong grinding down the weak. The representatives of those on whose behalf he speaks debate the subject before him, when Chaos returns; but at this moment the "Eternal Sacrifice" is revealed, and as the pilgrim descends the mountains he passes through forests which thrill with the mysteries of birth and growth. This is a mere outline, mainly in the author's own words, of the tremendous subject-matter of this short poem. In the main it is written in dignified blank verse, but the strand is broken with many graceful stanzas. The book has a peculiar interest to us because it is dedicated to the memory of our late assistant editor, Dr. J. Bart Rous, of whose "rare insight as a critic and perfect loyalty as a friend" the author speaks in acknowledgment of a personal debt.

## JOURNALS AND MAGAZINES.

*The British Journal of Tuberculosis.* Edited by T. N. KELYNACK, M.D. Vict. Vol. V., No. 1, January. London: Baillière, Tindall, and Cox. Single copies, 1*s.* 6*d.*; annual subscription, 5*s.* post free.—This number contains the following articles: 1. A Popular Crusade against Consumption, by Mr. C. H. Garland, giving a brief account of the special appeal of the National Association for the Prevention of Consumption. 2. The Conquest of Tuberculosis, by Dr. David B. Lees, in which reference is made to the method of treatment by inhalation recommended by him. 3. Directions for Living and Sleeping in the Open Air, by Dr. Thomas Spees Carrington, a paper which is full of useful practical hints. 4. Local Effort in the Anti-tuberculosis Campaign, by Mr. Reginald E. Stidolph, giving a short account of the methods employed in the town of Brooklyn to arouse interest in this question by advertising and other means. 5. Some Effects of the Constant Current upon Tubercle Bacilli in Fluids, by Dr. Charles Russ. 6. Impressions of the International Tuberculosis Conference, Brussels, 1910, by Dr. Nathan Raw. Two "critical reviews" are also included, one by Dr. F. Rufenacht Walters on Sanatorium Treatment in Pulmonary Tuberculosis, and another by Dr. Hugh A. Macewen on Milk and Tuberculosis, as well as some general information in regard to institutions for the tuberculous, books, preparations, and appliances.

# New Inventions.

## A PELVIC LEVEL FOR COMPARING THE STANDING HEIGHT OF THE LEGS IN LATERAL CURVATURE OF THE SPINE, ETC.

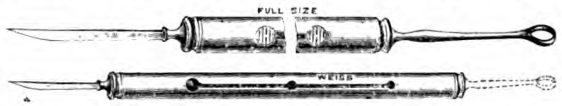
IN examining a case of lateral curvature of the spine it is important that the standing height of the legs shall be compared. For this purpose the instrument figured here, which has been made to my design by Messrs. Hawksley and Son, 357, Oxford-street, London, W., is simple in use and accurate in its results. It consists of a thin plate of hard wood, 15 inches long, 2 inches deep in the middle, and tapering to 1 inch at either end, curved to suit the prominence of the abdomen, and having a straight upper edge. It is fitted at the centre of its convex face with a small platform terminating in a convenient handle and bearing a spirit-level. To use the apparatus the patient, with boots off and with the hips exposed, is required to stand erect. A dot is placed over each anterior superior iliac spine with a dermatographic pencil. The instrument is then applied so that the upper edge passes though both dots. If the spirit-level then indicates horizontal the two legs are equal as regards their standing height. If it does not indicate horizontal then slabs of wood of known thickness are placed beneath the foot of the shorter side until the horizontal is gained. The sum of the slabs used gives the difference between the two legs. This method of measurement assumes only one thing—viz., that the pelvis is symmetrical as regards the height of the anterior superior iliac spine above the acetabulum. Any vertical measurement taken from the anterior superior spines themselves with the patient standing on unequal legs requires correction by a very complex and constantly varying formula before it can be accepted as exact, because in the first place, the distance between the anterior superior spines is greater than the distance between the mid points of the heads of the femora (9½ inches to 6½ inches, average measurements), and therefore any difference in the levels of the latter will be exaggerated in the levels of the former; and, in the second place, when the pelvis is tilted sideways the anterior superior spines move up or down, as the case may be, not in straight lines but in curves, owing to the ball-and-socket action of the hip-joint. The usual method of building up the short leg by placing slabs beneath the foot overcomes these objections, and the use of the pelvic level here described does away with the uncertainty of trusting to the eye in judging the restoration of the pelvis to the horizontal.

J. S. KELLETT SMITH, F.R.C.S. Eng.

Eastbourne.

## COMBINED TARSAL CYST KNIFE AND CURETTE.

THE removal of tarsal cysts (chalazia) from the eyelids is an operation of some difficulty on account of the smallness of the hold on the eyelids and the slipperiness which ensues when bleeding commences. The difficulty is not lessened by having to change instruments, one to incise and another to scrape out the cyst. To obviate the disadvantages of two independent instruments, I have devised a combination in which both are contained in a metal tube. The knife blade is wedge-shaped, thus enabling the cyst to be opened by one cut, and instead of the usual sharp spoon, which becomes blocked, a sharp ring curette is used. As one instrument is protruded from the tube the other is withdrawn into it, thus tending to prevent injury either to the operator or the patient. The action can be controlled by the fingers of one hand.




Messrs. Weiss of Oxford-street, London, W., have embodied my ideas in a perfectly satisfactory manner, and the instrument can be obtained from them at a moderate cost.

Manchester. A. A. BRADBURNE, F.R.C.S. Edin.

# THE LANCET.

*LONDON: SATURDAY, JANUARY 21, 1911.*


## The Evolution of the Medical Officer of Health.

THE public health service of Great Britain has afforded an example of sanitary administration which has been closely followed by foreign nations and by our own colonies and dependencies, and although there are not wanting critics who are opposed to local government in sanitary matters, and who would have us follow methods more suitable to the conditions of our Indian Empire, the Local Government Board is not likely to be deflected from its ideals of local administration. We may be well resolved to resist the needless encroachments of bureaucracy, and yet perceive that public health conditions cannot always await a settlement by a Parliament entangled in party warfare. The path towards the attainment of sanitary ideals is a long and difficult one, and it is mainly by periodic stimuli put forth by the central body that advances in detailed local administration are made, more particularly in the case of the smaller urban districts and in the rural districts where, as a rule, part-time medical officers are still in power. These part-time officers have in very many instances done excellent work, and a great deal of the sanitary progress which has been effected is in large part due to their efforts which, it may be added, have been altogether out of proportion to the paltry recompense which they have received. But these part-time officers would be, some of them, the first to admit that there are many drawbacks to their employment, and it is clear by an Order recently issued that the Local Government Board considers these drawbacks to outweigh the advantages obtained by leaving the preventive service in the hands of the general practitioner. The future of the general practitioner, which has been of late seriously threatened by so many new social factors, may not at first sight seem to be improved by the new Order, but having regard to the miserable stipends received by so many of the part-time medical officers the pecuniary damage will not perhaps be very great. Moreover, the process of conversion will take very many years to accomplish, so much so that many men of 40 who are now holding part-time appointments may die, still holding them, at a ripe old age. The Order must be taken as little other than an indication of the tendency of central administration. Nor, as we view it, will there be any loss of prestige to the medical profession, but rather the reverse, for at present many who hold these appointments, owing to the insecurity of their tenure and the conditions of their service, do not regard them with much complacency. The loss of emolument to those in general practice will be to a great extent made up in two ways: firstly, those who would be their rivals in general practice by taking the official appointments will leave the field for such practice more open; and secondly, those holding the official appointments, not being their rivals in practice, can be consulted in diagnosis and kept informed on sanitary matters without risk of professional friction.

It must be remembered that the appointment of a whole-time medical officer of health for a very large combined district is not always a success. This fact is evidently appreciated in a Memorandum which has been issued by the Local Government Board in connexion with the new Order. This Order and Memorandum combined contain some very important and far-reaching modifications, the full force of which is only apparent to those who are sufficiently familiar with the subject to enable them to read between the lines. Although the Local Government Board is strongly opposed to the medical officer of health being at the same time a general practitioner, it is clearly in favour, at any rate at present, of the medical officer of health embracing as many appointments of a public nature as will enable him to devote his whole time to public work of one or another description. Indeed, it seems within the realms of possibility that the not far distant future may see a medical officer of health for a relatively small area possessed of a diploma of public health and holding, in addition, one or another, or conceivably all, of the following appointments: school medical officer, superintendent of the isolation hospital, certifying factory surgeon, police surgeon, public vaccinator, district medical officer, and medical officer of the workhouse. Moreover, he may, if qualified to do so, act as consultant in infectious diseases and as the bacteriologist to his own and perhaps other local authorities. It is evidently by some such means as these that relatively small areas will in the future provide themselves with a medical officer of health who shall not engage in private practice, and it will be found by an examination of local appointments how easily a sum of money sufficient to support a whole-time officer may be procured by the fusion of appointments in the sense here contemplated. The coming into operation of such a revolution must be spread over many years, and should not be regarded as spoliation of the general practitioner so much as a rearrangement of duties among medical men whereby there will be more who receive public salaries and less who practise under existing conditions. The particular risk which the medical profession runs at the present moment is that insufficient salaries should be offered and accepted for the discharge of amalgamated duties.

No statement or suggestion is ventured upon in the circular before us as to what the Local Government Board would be likely to regard as a minimum salary, but as the observation is made that the medical officer of health should not be placed in a position of inferiority in the matter of salary to other medical men in the district, it is difficult to see how anything under £500 per annum net as an initial salary could be entertained, the expenses of administration being defrayed. We are glad to see, too, that the Board definitely expresses the opinion that it is "not sufficient merely that a medical man is found who is prepared to accept the salary offered, it is more important that the

salary should be such that it will be worth the while of a capable man to accept it, and to give a sufficient amount of time to his duties." Some important modifications are made by the Order just issued, the provisions of which are already in force as regards the duties of medical officers of health. In the first place, it is definitely laid down that the medical officer of health cannot be expected, as part of his duties, to make a quantitative examination of water, although he may well employ certain qualitative tests for his own guidance. If he is competent to make the former examination the local authority may arrange with him for such purposes. In future, rural as well as urban district councils are to give notice of appointments by advertisement only, although, if the Board sees fit in any special case, it may dispense with this notice. Once appointed for a specified term, this officer, at the expiration of such term, will continue to hold office from year to year, and no further approval by the Board is required unless the terms of the appointment are altered. Moreover, a district council may at any time during the period of limited appointment change such appointment into one without limit of time, all of which provisions mean, of course, that an effort is being made, and that a very praiseworthy one, to bring about greater security of tenure than now obtains. The additions which are made to the duties of the medical officer of health by the new Order are not very onerous except in the event of his annual report not being printed. It is now laid down that this officer shall submit three copies of his annual report to the Local Government Board as well as a copy to his own local authority and to the county council or councils with whom he may be in official relation. Having regard to the very arduous duty of possibly writing out six copies of his annual report, we can well understand the anxiety of the Local Government Board that the local authority should cause the annual report to be printed in order, so that, amongst other things, the district councillors and other persons interested may have an opportunity of perusing it. Another additional duty is the weekly transmission to the Local Government Board, and to the medical officer of health of the county, of a list of cases of infectious diseases notified in his district. He is also required to notify at once to the Local Government Board any case of plague, cholera, or small-pox which may be brought to his notice. The relations of the sanitary inspector to the medical officer of health do not always appear to be quite properly recognised, and consequently the new Order has been modified in such a fashion as to emphasise the fact that the inspector should, as a rule, act under the general supervision of the medical officer of health, who "must be regarded as the head of the public health department of the council."

## The Accounts of Medical Men.

A MEETING of the Hunterian Society is announced to be held at the London Institution, in Finsbury Circus, on Jan. 25th, when a paper on Medical Fees will be read by Dr. F. J. SMITH. The subject, which has often been debated, has once more been brought to the public attention through the issue in the *Times* of Jan. 11th of a letter signed "Senior," in which complaint is made both of the exorbitance of medical charges and of the fact that medical men do not follow the customs of the commercial world by rendering their accounts in detail. "Senior," it will be seen, was making, therefore, a double-barrelled complaint, the first, that of exorbitance, being directed against operating surgeons mainly; and the second, that of deficient business habits, being directed against the general practitioner. "Senior's" letter has led to an interesting correspondence in the course of which there were advanced various reasons in support both of the present standard of fees and of the custom of rendering only a general statement in connexion with charges for professional services, and a leading article in the *Times* of Jan. 17th summed up the situation from the public point of view with great fairness as well as wit.

In all medical affairs there is a public side, and if medical men are prone sometimes to forget this fact, the public is at least equally oblivious of it. But the double interests involved in such a matter as medical charges are too obvious to escape the attention of anyone, and in our opinion it would be a good thing if some of those well-disposed, if critical, laymen who, like "Senior," are unable to understand why there should be any difference between the accounts of a medical man and those of an ordinary commercial firm or of their legal adviser, could attend the debate at the Hunterian Society and explain their difficulties. At such a general discussion the point of view of the public ought to, and would, we feel sure, receive sympathetic attention, and each party to an old quarrel would have details put before them in a new light and in such a way that differences of opinion could be much adjusted. There can be little doubt that if the custom of keeping strict accounts in a business-like manner, rendering them in detail, could be generally adopted by medical practitioners it would prove of great financial advantage to the medical profession, for it would enable the general practitioner to claim many a fee for individual items of special service such as laboratory investigations, letters written, telephone calls answered, and what not, which under the present "lump sum" method are certainly lost to him. Such things are never overlooked in the business-like accounts of the legal adviser, who is held up to us as a model, but we are not certain that the receipt of what an American would call an "itemised" lawyer's bill is greeted with enthusiasm by the public. It is more usual for the public, angrily and unfairly, to call the minor charges extortionate. Most commercial men fail to grasp the crux of the situation, which is that medical aid is in no sense a commodity that is sold but a service that is rendered; a service, the value of which is not fixed or even fixable, but is dependent on many factors—the financial status of the person to whom it is rendered, the professional status of the person by whom it is rendered, the nature of the service itself, and the circumstances and conditions surrounding its rendering. In the business world, and also even in the professional field occupied by the lawyer, the greater part of the work is done in a fixed locality—the shop or office—where a staff of minor assistants is kept, who take cognisance of everything sold or every item of service rendered, duly recording it for the future accounting, while performing all the clerical labour entailed in sending out accounts. These clerks and assistants form part of the business establishment, and the cost of

maintaining them forms part of the consideration on which the scale of charges is based. Without their aid no business man could carry on a business of any magnitude, even if all his work continued to be done in his office. How much more impossible, then, would it be if he personally had to attend to every detail of his work, to call in person upon customers or clients at any hour of the day or night, whenever they wished to make a purchase or to propound a question, and to keep a strict record in a clear businesslike fashion of every detail involved, while no limit was placed to his business hours whereby he could make sure of uninterrupted leisure in which to post up his books.

The question of the magnitude of medical fees is directly linked with the other. The business man, as his business expenses and the cost of apparatus and raw material increase, raises his prices in proportion. Yet the business expenses of the medical practitioner have risen of recent years more rapidly than those of other pursuits. House rent, service, means of locomotion—and, be it remembered, all these items represent more to the medical man than to others of like income, because they are imposed by the needs of his occupation, and not merely conditioned by what is warranted for living purposes from the net profits thereof—professional outfit, all are vastly more expensive than they were a few years ago. The increase of knowledge, moreover, as to the nature of the myriad dangers that surround most forms of medical service, and particularly of surgical intervention, imposes a much heavier burden in labour, time, and money on the conscientious medical man than was the case a very few years ago, in the rendering of the same kind of aid. Why is it that even the gravest operations in surgery are now done with a lesser mortality risk than that which a decade or two back beset even comparatively trivial surgical interference? It is because, as a consequence of the discovery of unsuspected sources of danger, methods of precautionary preparation have been evolved, that entail a greater expenditure of time, trouble, and money prior and subsequent to the actual operation, as well as a much weightier sense of responsibility. Is it nothing to the patient that, as a result of this expenditure, he comes to operation with 20 times less risk of disastrous issue than would have been the case some years ago? And yet, in the face of these facts, the medical man is asked to burden himself with all the clerical paraphernalia and *personnel* of a business office. When patients can consent to do in the case of medical practitioners as business men and lawyers make their clients do—viz., come to an office for everything they want; when they can arrange to be ill and to require assistance only during business hours, thus enabling the medical man to separate entirely his "business" expenses from the cost of his private living, then—and we fear not till then—all medical men may be able to maintain the necessary clerical staff to put their accounts on what "Senior" and those who think like him would consider a business-like footing. The vast majority of medical men will render an account with items when it is required, for they are not without careful methods of recording the details of their services; but to send out such accounts to every patient as a matter of course would entail upon them clerical labour for which the public would have to pay.

# The Influence of Parental Alcoholism on the Offspring.

To minds with a bent for fantastic speculation it might be suggested as a subject of curious consideration why controversy on the question of alcohol is so apt to produce in the controversialists many mental phenomena which have a singular resemblance to the effects which alcohol itself produces on the judgment and the temper of those who take too much of it. May we not, for instance, compare the expansive and genial phase of intoxication with that facile and uncritical mood which makes the participant in debates on this question ready to welcome in support of his side of the argument evidence of a kind that he would never think of offering or entertaining in reference to any other subject under the sun? And may we not again find the analogy of the quarrelsome stage of drunkenness in that pugnacious and aggressive temper, that readiness to discover unintended affronts and to impute discreditable motives, which appears unfortunately to be inseparable from any discussion of even the strictly scientific aspects of this question? These unpleasing characteristics have not been lacking in the acrimonious controversy regarding the influence of parental alcoholism on the offspring, a controversy of which we have heard so much in the last few months, and from which we might perhaps have learned a little more if it had been found possible to conduct the discussion in a less polemical temper.

It will be in the recollection of our readers that the recrudescence of interest in this particular aspect of alcoholism dates from the application to its study by Professor KARL PEARSON and his pupils of the Biometric School of those statistical methods to which they attribute so high a value in bio-social investigations. Their researches on this matter, the result of which was published last May in one of the series of memoirs issued by the Eugenics Laboratory,[1] led them to conclude that the traditional belief which ascribes to parental alcoholism an extremely injurious influence on the offspring is, like so many of the traditional beliefs that have come under the remorseless scrutiny of biometrics, entirely erroneous. So far, indeed, from any such injurious influence being traceable, Professor PEARSON and Miss ELDERTON find that as regards the intelligence, physique, and health of the children dealt with in their inquiry, "the balance turns as often in favour of the alcoholic as of the non-alcoholic parentage." Such a pronouncement not only fluttered the teetotal dovecotes, as it was well calculated to do, it also excited a good deal of surprise and scepticism in quarters quite free from the slightest suspicion of bias; and Professor PEARSON'S data and conclusions were subjected to much hostile criticism both on medical and economic grounds. The criticisms from the medical point of view were formulated more particularly by Sir VICTOR HORSLEY and Dr. C. W. SALEEBY, and they were also urged with much force by several speakers who took part in the debate on this question at the meeting of the Society for the Study of Inebriety on Jan. 10th.

[1] A First Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring, by Ethel M. Elderton and Karl Pearson.

Professor PEARSON was not present at this meeting, but had answered his critics with characteristic vigour and reaffirmed his position in a succession of pamphlets issued in the same series in which the original memoir appeared, so that there is no lack of material from which to form an idea of the points at issue between Professor PEARSON and his opponents, and of the grounds of their difference of opinion.

Essentially the discussion has turned on the validity of the data used in the biometric investigation. It appears from the first memoir that these data were derived from two sources —viz., from an account of the children in the special schools for the mentally defective in Manchester prepared by Miss MARY DENDY, and from a report of the Edinburgh Charity Organisation Society dealing with the children attending a large elementary school in that city. From the information furnished in these documents Professor PEARSON worked out the correlation coefficients between the alcoholism of the parents (as estimated by the social workers who surveyed the homes) and various conditions measuring the physical and mental fitness of the children, arriving at the conclusion indicated above. The critics of the memoir object that in these data there is no proof that the "alcoholic parents" suffered from alcoholism at all, at least in the medical sense of the term, which in this connexion means chronic alcoholism, and that there is no evidence *a fortiori* of their having so suffered prior to the birth of the children; and they might emphasise this objection by pointing out that Professor PEARSON'S figures show over 64 per cent. of the Edinburgh schoolboys as having "alcoholic" fathers, and over 34 per cent. as having "alcoholic" mothers, a prevalence of chronic alcoholism which, indeed, the wildest teetotal imagination would hardly have attributed even to Edinburgh! Nor has criticism been confined to the character of the data; the way in which they have been handled has also been called seriously in question by Sir VICTOR HORSLEY and Dr. MARY STURGE in the *British Medical Journal* last week. Professor PEARSON,[2] in a second communication, had taken a like attitude towards the temperance advocates, and it must be admitted that he has little difficulty in showing that a certain amount of what passes for evidence on this question rests on poor foundations. He appears, however, to have taken his "random samples" of evidence as a sufficient proof that all the medical observations indicating the injurious influence of parental intoxications are equally valueless; this is hardly a view that can be accepted without further demonstration, nor is it altogether clear that the method of "random samples" can be applied to the evidence in favour of a theory as a test of the truth of the theory; the value of a conclusive experiment is not affected because a thousand faulty experiments were tried before it and were adduced as evidence in support of the view which it alone, if sufficiently, proves. There are, indeed, very few truths recognised to-day which have not at one time or another been defended by silly arguments and bad evidence as well as by sound arguments and good evidence. However, even among the very few witnesses whom he selects for criticism in his rebutting memoir Professor PEARSON himself recognises that there are differences in scientific authority, and he very rightly treats Professor DEMME'S contribution to the question as deserving a degree of serious consideration that need hardly be given to certain of the more lurid American statistics. Professor DEMME[3] contrasted two groups, each composed of ten families, with whose history he was intimately acquainted. In one group the parents were sober, in the other group one or both parents drank to excess and suffered from chronic alcoholism. And he found that the children of the alcoholic families, as compared with the children of the sober families, showed a very high infant death-rate and a very high incidence of epilepsy, weak-mindedness, and other indications of innate defect. Professor PEARSON argues that the figures given by Professor DEMME are only consistent with the assumption that the cases were selected and were extreme instances, and that they cannot be taken as typical of the normal effects of alcoholic parentage. There remains, of course, the difficulty that even if these be extreme cases they do undoubtedly point to an association between alcoholism in the parent and defect in the offspring; and this difficulty Professor PEARSON endeavours to meet by the hypothesis that in such cases the alcoholism is the expression of a hereditary defect which also accounts for the degenerate conditions in the children. Professor PEARSON, however, implies that he has taken Professor DEMME'S figures from summaries of his work and has not consulted the original paper; had he done so he would have found that Professor DEMME had partially anticipated this objection and had classified his alcoholic families from the point of view of their hereditary antecedents; the families where hereditary taint could, in the opinion of Professor DEMME, be excluded still showed a very high ratio of defect in the children, though not so high as in the families where alcoholism was associated with another degenerative factor in the stock. Apart, however, from its bearing on Professor DEMME'S figures, Professor PEARSON has tried to establish his theory, that extreme alcoholism is an effect of degenerative tendency, by appealing to the experience of the inebriate reformatories; and in an elaborate memoir,[4] written in conjunction with Miss BARRINGTON and Mr. DAVID HERON, he has analysed by the biometric methods a series of 207 observations of female inebriates in the Lancashire Certified Reformatory at Langho. To some extent this seems to be rather a work of supererogation, for, without any statistical proofs, it is common ground that the so called inebriates who have been dealt with under the Inebriates Act of 1898 are practically all cases of congenital mental deficiency, their inebriety, so far as it exists, being merely a secondary and by no means very significant symptom of their innate debility. What Professor PEARSON'S critics would probably dispute is the assumption that such cases are instances of "extreme alcoholism" in the sense in which the term is used in this controversy—that is to say, instances of extreme chronic intoxication; and they would certainly be able to maintain that the natural intolerance of

[2] A Second Study of the Influence of Parental Alcoholism on the Physique and Ability of the Offspring.

[3] Ueber den Einfluss des Alkohols auf den Organismus des Kindes, Stuttgart, 1891.

[4] A Preliminary Study of Extreme Alcoholism in Adults, by Amy Barrington and Karl Pearson, with the assistance of David Heron, D.Sc.

alcohol which these "inebriates" display must of itself prevent any such intense intoxication as might be expected to act on the germinal cells. If we are to ascertain by statistics the relation of "extreme alcoholism" to the mental and physical condition of the drinkers and the drinkers' children, it is not to these cases we should go, but to the instances of well-marked chronic alcoholism which do not find their way to inebriate reformatories at all because they are not generally "inebriates" in the policeman's sense of the word; and the Act of 1898, of course, leaves the diagnosis of the inebriate altogether to the policeman.

It appears very evident, then, that all this outpouring of polemical literature still leaves the question very much where it was. It has not, however, been altogether useless, for it has probably made both parties to the controversy a little less sure of being the sole depositories of truth, and it should also render them a trifle more circumspect with regard to the character and source of the data on which they base their theories. If it has any such effect, it will have brought a very new and acceptable spirit into the discussion of this vitally important bio-social problem.

# Annotations.

"Ne quid nimis"

## ENGLISH URBAN VITAL STATISTICS IN 1910.

THE annual rate of mortality in the 77 largest English towns during the 52 weeks of last year, calculated on the population estimated by the Registrar-General to the middle of the year at 16,940,895, was unprecedentedly low, and did not exceed 13·4 per 1000. In the four preceding years 1906-09 the death-rate in the 76 towns, then dealt with in the Registrar-General's weekly returns, declined successively from 15·9 to 15 4, 14 9, and 14·7 respectively. The Registrar-General's estimate of the population of these large towns, including London, is based on the assumption that the rate of increase that prevailed therein between the last two censuses in 1891 and 1901 has since been maintained. It seems, however, more than probable that on this hypothesis the present population of many of these large towns is over-estimated, and that consequently the aggregate true death-rate is somewhat under-stated. That the death-rate in these 77 towns has shown a steady and persistent decline in recent years, and that it is now unprecedentedly low, seems, however, to be beyond question, and affords conclusive evidence of improved and successful urban sanitary administration. One of the most satisfactory and hopeful features of the recent steady decline in our urban death-rates is the continued decrease of infant mortality. In 1906 the deaths of infants under one year of age in these largest English towns was equal to 145 per 1000 registered births; in the three following years this proportion of infant mortality declined to 127, 129, and 118 respectively; and during the 52 weeks of last year further fell to 115 per 1000. This decline in the rate of mortality in our largest towns has, however, been accompanied by a steady decline in the birth-rate, which was equal to 27·8 per 1000 in 1906, but fell successively to 27·0, 26·9, and 25·7 in the three following years 1907–8–9. The births registered in the 77 towns during the 52 weeks of 1910 were only equal to 24·8 per 1000, showing a decline of 3 per 1000 from the rate that prevailed in 1906. If, however, the aggregate population of these towns is now over-estimated, the calculated birth-rate is somewhat understated, but its marked and steady decline is beyond doubt.

## IODINE AS AN ANTISEPTIC.

As our columns in the past year show, a much simplified method of preparing the skin for operation—painting it with tincture of iodine—has come into vogue and proved very reliable. This method has been in use on the continent for some years, where also the value of iodine as an antiseptic generally seems to be much more appreciated than here. Professor Reclus has called attention to the great value of iodine in the disinfection of the wounds of the hands of workmen, which are difficult to sterilise in consequence of the thick skin covered with grease and dirt. In the *New York Medical Journal* of Dec. 3rd last Major Frank T. Woodbury, of the Medical Corps of the United States Army, claims that iodine is an ideal disinfectant and antiseptic, as it is cheap, easily obtainable, can be carried in small bulk, is efficient in high dilution, and does not damage tissue even when its vitality has been much reduced by traumatism or infection. He has found it invariably successful as a germicide, and though it has great power of penetration he has never seen a case of poisoning, even when the peritoneum was mopped out with it. It can be used to disinfect the area of operation without previous preparation, to sterilise instruments, sutures, dressings, and the hands of the surgeon. However, the continued use of iodine tarnishes instruments and blunts the cutting edge. Major Woodbury uses tincture of iodine entirely to prepare his hands and it rarely causes irritation. It can be removed by means of boiled or raw starch, ammonia, hydrogen peroxide, Fowler's solution, or ether. But after long periods of operation removal of the colour may be very difficult, therefore it is better then to dip the hands in the iodine and immediately decolourise with ammonia. A solution of one teaspoonful of the tincture to a quart of normal saline solution is of a strength of 0·007 per cent. and is most efficacious for the irrigation of catarrhal mucous membranes, as in conjunctivitis and cystitis. According to Major Woodbury, tincture of iodine is the most valuable drug that the railroad and military surgeon can have, while it enables as good results to be obtained in the cottage as in the most modern operating theatre. He suggests that it should be applied throughout to all wounds and raw surfaces infected, or likely to be infected, and abscess cavities. The following are examples which he gives of its use. A soldier, aged 29 years, sustained lateral dislocation of the left knee with severe laceration of the internal lateral and capsular ligaments. The joint was opened and explored with the finger, and the torn ligaments were freshened and sutured with kangaroo tendon, and the skin incision closed with silkworm gut. Tincture of iodine was used for sterilising the surgeon's hands, the area of operation, the depth of the wound, and the sutures. A dry dressing was applied. Convalescence was rapid, and on the eleventh day the patient was going about on crutches. A soldier, aged 24 years, was run over by a heavy wagon and sustained a compound comminuted fracture of both bones of the left leg. He was taken to hospital ten miles across the prairie. Under chloroform Major Woodbury removed the clothing and shoe from the leg and found a nasty wound with 3 inches of tibia lying crossways in the leg, the soft parts much crushed, and numerous splinters of bone. He washed the dust from his hands, dipped them in tincture of iodine, and explored the wound. While the foot was held in extension he refitted the broken fragments of tibia in place, brought the ends of the fibula in apposition, and removed splinters and

shreds of flesh. With long sutures he approximated the severed muscles and thoroughly mopped out the wound with tincture of iodine. Nothing more was done as the tissues were too damaged to stand any manipulation, and wiring the bones would, he considered, have caused extensive necrosis. A posterior wire splint and plaster-of-Paris were applied and a dry dressing, while a large anterior fenestra was cut. The wound was irrigated daily with the iodine salt solution. Some sloughing took place, and when this had ceased repair was rapid. There was never suppuration, fever, or pain. Eight weeks after the accident the wound was healed; the lower end of the fragment had united by firm bony union and the upper by fibrous union.

## SUDDEN ONSET OF ENTERIC FEVER BY HÆMORRHAGIC NEPHRITIS.

ACUTE hæmorrhagic nephritis is a rare complication of enteric fever; still rarer are cases in which the onset of the disease is marked by this complication and the eruption occurs later. An example was reported at the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 2nd, 1910, by M. A. Pissavy and M. Gauchery. On Sept. 7th a youth, aged 18 years, was admitted into the Pitié Hospital with all the symptoms of acute hæmorrhagic nephritis. The urine was of normal quantity, but of a blackish red colour, and contained a large quantity of albumin. Microscopic examination showed granular and blood casts and deformed red blood corpuscles. There were also intense headache, a dicrotic pulse of 100, a temperature of 104° F., bronchitic râles, furred tongue, constipation, enlarged spleen, and œdema of the lower limbs. The history was that eight days previously the symptoms began suddenly after a chill. The dicrotic pulse, the want of correspondence between the pulse and temperature, and the splenic enlargement should have suggested the diagnosis of the renal form of enteric fever, but this possibility was not considered. On Sept. 14th rose spots appeared, diarrhœa replaced the constipation, and Widal's reaction was positive in a dilution of 1 in 50. From the 15th to the 20th the amount of blood in the urine in proportion to the albumin began to diminish. On Oct. 5th the temperature reached normal, the urine was clear, and the quantity of albumin had fallen to half a gramme per litre. On the 9th the patient was discharged, and his urine contained a quarter of a gramme of albumin per litre. M. Pissavy and M. Gauchery have found recorded in the *Thèses de Paris* five similar cases. In the first a man, aged 24 years, after a chill had to take to bed with headache and fever. When taken to hospital a week later he had a temperature of 102·2°, a pulse of 90, a puffy face, and bloody and highly albuminous urine. The appearance 48 hours later of rose spots allowed the diagnosis of acute nephritis to be revised. Recovery ensued. In the second case a man, aged 37 years, was taken to hospital in a state of profound stupor, with a temperature of 102·8°, a pulse of 98, and an enlarged spleen. The urine was scanty and highly albuminous. He had been ill for ten days. On the day after admission the urine was suppressed. Jaborandi was given and produced sufficient diuresis, but the urine was bloody. Five days later rose spots appeared. After three weeks the patient was discharged, the urine containing only a trace of albumin. In the third case a woman, aged 20 years, was suddenly attacked with headache, nausea, giddiness, oliguria, and hæmaturia. The urine contained much albumin. After eight days rose spots appeared and her condition became worse. She died on the fortieth day. At the necropsy the kidneys were found very large and congested. In the fourth case a woman, aged 21 years, was seized with headache, backache, vomiting, and diarrhœa. Five days later she was admitted into hospital in a state of high fever. The urine was scanty and contained a large quantity of albumin. Three days later it became bloody and rose spots appeared. Death occurred on the eighth day of the fever. As in the previous cases, the kidneys were found large and congested. In the fifth case a man, aged 21 years, was admitted into hospital on the fifth day of a severe fever. Forty-eight hours after the onset he noticed that the urine was blackish. On admission the urine contained blood, a large quantity of albumin, and numerous casts. The temperature was 103·5° and the pulse was 101. The liver and spleen were enlarged, and there was gurgling in the right iliac fossa. Death occurred on the thirteenth day of the typhoid fever. These cases show several noteworthy points. The first is the suddenness of onset of the renal symptoms. The second is the prognostic importance of the amount of urine secreted. In two of the three fatal cases there was persistent oliguria; in the other case the quantity of urine secreted is not stated. On the other hand, in the present case the amount of urine secreted was always satisfactory, and in the second case quoted there was only temporary oliguria. But the prognosis of this form of typhoid fever is grave; the six cases show a mortality of 50 per cent. In all the cases the cause of the nephritis seems to have been overlooked until the appearance of the rose spots, although it should have been suspected in consequence of two symptoms—enlargement of the spleen and want of correspondence between the temperature and pulse. The former was about 104° while the latter was only about 90 to 100.

## THE BOROUGH OF PORTSMOUTH AND THE TREATMENT OF PULMONARY TUBERCULOSIS.

WE have received a copy of a special report presented to the council of the borough of Portsmouth on the subject of "The Provision of Sanatorium Treatment and Tuberculin Dispensaries for the Treatment of Inhabitants of the Borough suffering from Consumption," by Dr. A. Mearns Fraser, medical officer of health. The report was prepared in response to a request from the health committee as to the need for the council using its powers under the Public Health Act of 1875 permitting local sanitary authorities to provide sanatorium treatment for patients, whether in receipt of relief or not. The authorities of the borough of Portsmouth are already endeavouring to assist in the combat against tuberculosis by active administration of the Housing of the Working Classes Acts, by giving advice to persons affected with pulmonary tuberculosis, by providing sputum bottles, by disinfecting infected houses, and by affording means for free bacteriological diagnosis. Dr. Fraser in his report gives some details of the approximate cost of building and maintaining a sanatorium, and discusses briefly and in simple language the value of sanatoriums as curative and as educational institutions. He refers to some German statistics and to the published reports of certain English sanatoriums, laying special stress upon the importance of early diagnosis and of effective after-care. He concludes that it is inadvisable at present to provide a sanatorium for the treatment of the patients in the borough of Portsmouth. He is careful to add that he is not in any way opposed to this method of dealing with the disease, but he maintains that any scheme to deal with it comprehensively would be much too costly, and that the expenditure necessary to treat even a small percentage of the cases in the borough by this means would be more successfully applied in another direction. The alternative suggested consists in the establishment of a tuberculin dispensary and giving it one year's trial. It is estimated that the cost will be £600, a sum which is to pay for the dispensary and all expenses connected with it, including medical

attendance, a nurse, a caretaker, drugs, and apparatus. Dr. Fraser makes a few general statements in regard to the nature of tuberculin and its use for diagnosis and treatment. He quotes the published statistics of Dr. W. Camac Wilkinson, and refers to certain other groups of cases treated by tuberculin. He also mentions that he has attended at the Kennington Tuberculin Dispensary, observed the methods there employed, and seen some of the cases. He concludes by recommending the establishment of a tuberculin dispensary, at the same time admitting that this method of treatment must be regarded as on trial, and deprecating any unduly sanguine hopes from it. If the borough authorities decide to carry out these recommendations the results obtained should be of great interest and value, but only if the strictest precautions are taken in regard to the diagnosis of the cases treated by the tuberculin method. We have no wish to criticise the views set forth by Dr. Fraser, which are carefully expressed and are obviously the outcome of an earnest study of the question, but in the light of recent work on the diagnosis of tuberculosis, to which reference was made in the interesting paper by Dr. A. C. Inman published in THE LANCET of Dec. 17th last, the statement made by Dr. Fraser that a rise of temperature after a small dose of tuberculin shows that a patient is tuberculous requires qualification. At any rate, if every case giving such a rise after one small injection is submitted to treatment by tuberculin the results will be of less value than if the cases treated are demonstrated to have active tuberculous lesions.

## PHYSIOLOGICAL VARIATIONS IN THE LEUCOCYTE COUNT.

IT is well known that variations in the normal leucocyte count occur as the result of certain physiological conditions, and the normal limits are usually given as from 6000 to 8000 per cubic millimetre. An interesting paper is published in the *Archiv für Experimentelle Pathologie und Pharmakologie* of Dec. 13th, 1910, by Dr. V. Ellermann and Dr. A. Erlandsen of Copenhagen. They point out that some of these physiological variations are very rapid and evanescent, while others are slower in development and more lasting. They suggest that alterations in the number of leucocytes must in all probability be due to one of three causes—viz., new formation or destruction of leucocytes, alterations in the concentration of the blood, or changing distribution of the corpuscles in the vascular system. Some of the physiological variations can scarcely be due to new formation or destruction, since they occur with too great rapidity. The part played by alterations in the concentration of the blood is difficult to establish. Some observations are on record which tend to show a relation between the blood pressure on the one hand and the number of red corpuscles, the proportion of hæmoglobin, and the specific gravity of the blood on the other. Grawitz showed that paralysis of the vaso-motor nerves could produce a rapid diminution of the concentration of the blood, but it has been pointed out that this is not necessarily due to the alteration in blood pressure. Hot and cold baths cause variations in the number of red and white corpuscles, the white count being much more affected than the red. Some other experiments by Becker and Hess tend to show that variations occur only in the blood in the capillaries, or in that of the veins and capillaries as a result of changes in blood pressure. Tornow, who examined the blood from capillaries after prolonged marches, found on an average an increase amounting to 43 per cent. in the leucocytes, while the increase in the red was only 9 per cent. In the light of these results and of their own experiments, Dr. Ellermann and Dr. Erlandsen conclude that alterations in concentration play at most a subordinate part in the production of physiological variations in the leucocyte count, and they attribute the chief importance to the varying distribution of the leucocytes in the different vascular areas. They then discuss some of the conditions causing more or less rapid variations in the number of leucocytes. The leucocytosis of digestion has been regarded as a true leucocytosis—i.e., as due to the development of fresh corpuscles—but Dr. Ellermann and Dr. Erlandsen see no convincing arguments in favour of this view, and suggest that it may own a similar explanation to the other variations. The leucocytosis of childbirth, which increases markedly after the onset of the pains, diminishes after the birth of the fœtus and increases again during the after-pains, is regarded as due to the associated muscular contraction and as belonging to the group called by Schultz leucocytosis of effort (*arbeitsleucocytose*). Schultz showed that during muscular work the leucocytes might increase from 25 to 50 per cent., a fact confirmed by the observations of Tornow, to which reference has already been made. Hasselbach and Heyerdahl have shown that variations in the leucocyte count occur on sudden change from the erect to the recumbent position and *vice versâ*, a change which they distinguish as a static leucocyte reaction. The explanation offered of these changes is that owing to the increased force of the heart's action and the greater velocity of the blood-stream produced, the leucocytes are forced from their peripheral position in the deeper vessels and hence reach the superficial capillaries in greater numbers. Dr. Ellermann and Dr. Erlandsen have repeated and extended these observations, using special precautions against error, and employing a special method of mixing so as to obviate the defective admixture obtained with the ordinary form of pipette. As a result of 23 observations upon healthy persons and upon convalescents from mild illnesses they obtained in every case a definite alteration in the number of leucocytes on changing from the erect to the recumbent position and *vice versâ*, amounting to 26 per cent., an increase in the first case, a decrease in the second. This reaction is a very rapid one; it attains its maximum in from 15 to 45 seconds after the change of position, and disappears in from 45 to 90 seconds. Some observations upon the leucocytosis of effort showed that this also was of brief duration, lasting only two or three minutes. Psychical influences also appear to modify the leucocyte count, probably through their action upon the heart. Some experiments made upon rabbits showed that the injection of strophanthin led to an increase in the leucocyte count. All these observations are regarded as confirming the explanation already mentioned of these rapid variations in the number of leucocytes.

## THE POLYTECHNIC.

THE Polytechnic, founded by the late Quintin Hogg in 1882, is being rebuilt at a cost of £90,000. This rebuilding fund was inaugurated by a grant of £20,000 from the London County Council and a loan of £20,000 from the City Parochial Foundation. The sum of £50,000 which is needed to complete the fund has been subscribed by Lord Leith of Fyvie, the governors, members, and students of the Polytechnic, and other friends intimately associated with the institution as a memorial to his late Majesty King Edward VII. The money required for the rebuilding of the Polytechnic having been subscribed privately a large number of old members, scholars, students, and travellers are ignorant of the matter. It is believed that the scheme will appeal to all who have ever been identified with the Polytechnic, and that many who are now holding positions of value and responsibility will be glad to have a share in perpetuating the work of the founder and of associating

the new building with the memory of King Edward VII. In consequence of this belief it has been decided to reserve to them the opportunity of contributing the sum of £2500. For this purpose the fund will be kept open until Easter, and subscriptions in amounts varying from £100 to £1 will be received. We are requested to assure all those who have ever been associated with the Polytechnic, wherever they may be, that their help will be cordially appreciated. Subscriptions may be paid in instalments terminating in June, 1912, and should be sent to the Secretary, 309, Regent-street, London, W., or to Mr. J. E. K. Studd, the President and chairman.

## THE LECTURES AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following lectures at the Royal College of Surgeons of England are announced to take place. Mr. Edmund Owen will deliver the Hunterian oration at 4 P.M. on Tuesday, Feb. 14th. Two lectures on "Colour Vision and Colour Blindness" will be given by Dr. F. W. Edridge-Green on Feb. 1st and 3rd; two lectures on "The Immunity Reaction in Relation to Surgical Diagnosis," by Dr. W. d'Este Emery on Feb. 6th and 8th; a lecture on "New Views on the Chemical Composition and Mode of Formation of Renal Calculi and the Metabolism of Calcium in Gout and Allied Conditions," by Professor B. Moore, on Feb. 10th; three lectures on "The History of Mummification," by Professor G. Elliot Smith, on Feb. 13th, 15th, and 17th; six lectures by Professor Arthur Keith, on "The Anthropology of Ancient British Races," illustrated by the Museum Collection, on Feb. 20th, 22nd, 24th, 27th, and March 1st and 3rd; and a lecture by Mr. K. W. Goadby, on "The Association of Diseases of the Mouth with Rheumatoid Arthritis and Certain other Forms of Rheumatism," on March 6th. The lecture hour is 5 P.M. precisely.

## RECENT REPORTS UPON THE INVESTIGATION OF TRYPANOSOMIASIS.

THE difficult problems associated with trypanosomiasis in man and animals continue to receive the careful attention of British investigators. As evidence of this we may mention that at the recent December meeting of the Royal Society no fewer than six papers on this subject were entered on the Proceedings. Two of these papers were contributed by Colonel Sir David Bruce, F.R.S., in association with his colleagues of the Sleeping Sickness Commission of the Royal Society, which has been at work quite lately in Uganda. Both of these contributions deal with "Trypanosome Diseases of Domestic Animals in Uganda," the first relating to Trypanosoma uniforme and the second to Trypanosoma nanum. These two papers are in continuation of a series of former contributions made to the Proceedings of the Royal Society during 1910, and are numbered respectively IV. and V. Trypanosoma uniforme, it appears, resembles T. vivax in shape and general appearance, but differs markedly in size; it also resembles T. vivax in not being pathogenic to the smaller laboratory animals. T. nanum is indistinguishable from T. pecorum either in the living condition or when fixed and stained, but it differs from T. pecorum in not being pathogenic to the smaller laboratory animals. There is no evidence as yet available to show what is the carrier of these two trypanosomes, T. uniforme and T. nanum, but it is probable that the carrier of T. pecorum acts also for T. nanum, since both diseases occur under the same conditions. Four of the papers read in December before the Royal Society were contributed by investigators connected with the Liverpool School of Tropical Medicine, the first of them being entitled "The Life-History of Trypanosoma Gambiense and Trypanosoma Rhodesiense as seen in Rats and Guinea-pigs," by H. B. Fantham, D.Sc. Lond. This interesting paper describes the formation of "latent bodies" from flagellate trypanosomes and the metamorphosis of latent bodies into trypanosomes. The second paper by the same writer, in conjunction with Dr. J. G. Thomson, is a preliminary note on "Enumerative Studies on Trypanosoma Gambiense and Trypanosoma Rhodesiense in Rats, Guinea-pigs, and Rabbits; Periodic Variations Disclosed." These investigations were undertaken at the suggestion of Major Ronald Ross under funds allotted by the Tropical Diseases Research Committee, and under the "Sir Edwin Durning-Lawrence Fund." The third of the papers contributed by the Liverpool investigators is by Major Ronald Ross, F.R.S., and Dr. David Thomson, and comprises further observations on a "Case of Sleeping Sickness Studied by Precise Enumerative Methods." These authorities are of opinion that the periodic increase of trypanosomes observed is due to their active multiplication, and that their decrease is owing to their rapid death and a cessation of multiplication probably depending on certain conditions, including the presence of antibodies in the serum and the large increase of leucocytes, especially mononuclears. The last of the contributions is furnished by Major Ross and Dr. J. G. Thomson, and is a preliminary note on "Experiments on the Treatment of Animals Infected with Trypanosomes, by means of Atoxyl, Vaccines, Cold, X Rays, and Leucocytic Extract; Enumerative Methods Employed." These investigations were conducted by funds given by Sir Edwin Durning-Lawrence for the purpose of testing the effect of cold on disease, and were suggested by Major Ross as a part of the studies made in connexion with a case of sleeping sickness reported upon by him and by Dr. David Thomson. The six papers which we have mentioned above form a valuable contribution to the literature of trypanosomiasis, and demonstrate that British investigators are not being left behind by their continental brethren.

## THE INTERNATIONAL HYGIENE EXHIBITION AT DRESDEN.

IN THE LANCET of Jan. 14th we referred to the forthcoming International Exhibitions and Congresses during 1911, and congratulated the country on the fact that, recognising the importance and value to the nation of representation at such international undertakings, the Government had appointed a permanent department of the Board of Trade to assist intending exhibitors with its experience. We commented especially on the importance of proper British representation at the International Hygiene Exhibition, to be held this summer at Dresden, in view of the mutual advantage that would accrue from a comparative study of German and British attainments in the hygiene of the factory and the workshop and in domestic hygiene. It would seem, however, that there is now some doubt of our representation at this exhibition in consequence of a lack of funds, for an appeal at this late date is being made by an important committee, headed by the Presidents and Ex-Presidents of many of the Royal Colleges, for the sum of £10,000 to meet the necessary expenses. Complaints have reached us that the Government has proved unsympathetic in this particular case. We are aware that the permanent department of the Board of Trade was instituted, not to cut the Gordian knot of difficulties with a cheque in payment of the cost, but to minimise the waste in labour and expense and to obviate the pitfalls due to lack of knowledge in such matters as modes of conveyance, tariffs, custom-house procedure, and local arrangements, the adjustment of all of which it is prepared to undertake. But it will be a serious misfortune if British hygiene fails to be adequately represented at the Dresden Exhibition, because

the Government does not see its way to make the same contribution towards expenses that is being made by all other important Governments. We hope sincerely that the £10,000 for which the scientific committee is appealing in our columns this week will be forthcoming before it is too late.

## THE CHILD-STUDY SOCIETY OF LONDON.

THERE are now 400 members and associate members of this society, and it is desired to increase this number and to make the society more widely known. The honorary secretary, Mr. W. J. Durrie Mulford, 91, Buckingham Palace-road, London, S.W., will be glad to send information as to its objects and activities to all who are interested in child-study. The study of the healthy child in its hygienic, educational, and social aspects is more and more forcing itself upon the attention of the medical man, and prudent parents are now aware of the value of expert guidance, preferably medical, in the upbringing of their children, and of the possibilities of developing the educational and social as well as the moral and physical characters of children along definite and desirable lines. The proper study of preventive medicine in its sociological department includes the study of such problems as form the subjects of the series of lectures and discussions to be held under the ægis of the Child-Study Society during the ensuing months. On Jan. 26th a lecture will be given by Mrs. M Scharlieb, M.D., on the "Recreational Activities of Girls during Adolescence." The lecture on "English Folk Dances," with demonstrations, to be given on Feb. 9th by Mr. C. J. Sharp, promises to prove interesting and attractive; and that on March 9th by Mr. Stewart Macpherson, on "Appreciative Music Study: its Application in the Training of the Child,' will open up a subject to which little attention is usually given in educational schemes. The course of fortnightly lectures will end on April 6th, when Mr. A. R. Ableson will speak on "The Measurement of the Intelligence: with Special Reference to Mentally Defective Children." A conference of combined societies at Halifax in July, under the presidency of Sir James Crichton-Browne, F.R.S., is also announced.

## THE SYNDROME OF SPHENO-PALATINE (MECKEL'S GANGLION NEUROSIS.

Dr. Greenfield Sluder, clinical professor of diseases of the nose and throat in the Washington University, St. Louis, U.S.A., describes in the *American Journal of the Medical Sciences* for December last an interesting symptom-complex, whereby involvement of Meckel's ganglion may be diagnosed with certainty. Meckel's ganglion, as it lies in the pterygo-maxillary fossa, is close to the nasal mucous membrane, and in intimate anatomical relation with the sphenoidal and post-ethmoidal sinuses above, the maxillary sinus in front, and often with the sphenoidal sinus posteriorly. Hence it is not surprising that the ganglion should be affected by inflammation in these cavities. It is in direct association with the superior maxillary division of the fifth cranial nerve, motor fibres leave it on their way to the soft palate and uvula, while some at least of the taste fibres from the tongue course through it. When its function is impaired, then a triad of symptoms may be looked for. First of all, there is wide and characteristic distribution of pain along definite lines, sometimes of great severity. It is usually described as a pain at the root of the nose, in or about the eye, in the upper jaw and teeth, and extending to the ear to take on the form of earache. It is often particularly severe at the mastoid, or at a point about two inches posterior to this, and it may "overflow" to the occiput, neck, shoulder, sometimes even to the arm and hand. There is commonly also pain or itching inside the nose. An objective accompaniment of anæsthesia on the soft palate on the affected side, and over the pharynx as far down as the lower part of the tonsil, is not infrequent. From the motor point of view the configuration of the soft palate is very frequently altered. The palatal arch is usually higher on the affected side, and in movement the uvula and the raphé deviate to the opposite side. During this act the dimple which normally forms in the median line is displaced to the opposite (sound) side. Gustatory changes are interesting and important. It will be remembered that the great superficial petrosal (Vidian) nerve runs backwards from the ganglion to join the facial nerve at the geniculate ganglion, and that along it pass taste fibres coming from the tongue *viâ* the chorda tympani. In almost every case (Professor Sluder has had experience of 60) there has been a diminished and delayed perception of taste in the middle third of the tongue on the same side as the lesion. The neuralgic pains can generally be relieved by the application of cocaine to the nasal mucous membrane covering the spheno-palatine foramen. A single drop of a 20 per cent. solution may be all that is required; or three applications of a saturated solution (67 per cent.) allowed to soak in over the foramen for 10 minutes at a time may effect a lasting cure. Professor Sluder has had excellent results by injecting alcohol into the ganglion. Sometimes the relief experienced when the ganglion is efficiently cocainised is almost startling. A brief statement is made at the close of the article as to the ocular pain in ten cases of glaucoma having been controlled by the application of cocaine to the spheno-palatine foramen.

## HOSPITAL ISOLATION AND TREATMENT OF MEASLES AND WHOOPING-COUGH.

THE result of the important experiment in the isolation and treatment of cases of measles and of whooping-cough in the Metropolitan Asylums Hospitals will be watched with much interest by all who are engaged or interested in public health administration. During the 52 weeks of last year no fewer than 1931 deaths from measles and 1363 from whooping-cough were registered in London, these numbers not differing materially from the average numbers in the ten preceding years. The average proportion of the deaths from these two diseases occurring among children under five years of age is fully 95 per cent.; the fatality of these diseases has therefore an obviously important bearing on the rate of child mortality. On Jan. 7th the Metropolitan Asylums Hospitals and the London Fever Hospital contained 153 cases of measles and 82 of whooping-cough. In connexion with this experiment the experience of the London Fever Hospital, which has for some time been receiving cases of measles, is distinctly interesting. The London Fever Hospital contained two cases of measles at the beginning of last year; during the 52 weeks of the year 207 additional cases of this disease were admitted, 191 were discharged recovered, and 18 cases remained under treatment in the hospital at the end of the year. The fact that not a single death occurred among the 209 cases of measles under treatment during the year affords the strongest evidence of the beneficial effect of the hospital treatment of this disease. No cases of whooping-cough appear to have been treated in the London Fever Hospital during last year, but 210 cases of scarlet fever, 73 of diphtheria, 8 of enteric fever, and 42 of "other diseases" were admitted, making in all 540 cases. It is interesting to note that only three deaths from diphtheria, two from scarlet fever, and one from "other diseases" occurred during the year in this hospital among the total number of cases under treatment. Among the completed cases of scarlet fever the two deaths were only equal to 0·9 per cent., and of the 74 completed cases of diphtheria the three

deaths were equal to 4·1 per cent. These figures testify to the successful treatment of infectious diseases in the London Fever Hospital.

## VULVO-VAGINITIS IN CHILDREN.

THE condition of vulvo-vaginitis in young girls is often a troublesome and somewhat intractable affection, especially in those cases of gonococcal origin. Even after vigorous local treatment the condition is very liable to recur, especially if rigorous precautions in regard to cleanliness are not carried out. Dr. Th. Perrin, of Lausanne, in a paper published in the *Allgemeine Medicinische Central-Zeitung* of Dec. 29th last, describes a method of treatment which he claims gives a lasting cure within a fortnight or three weeks in ordinary cases and within a month even in inveterate cases. He maintains that the condition is not merely a vulvo-vaginitis, but that it is in all respects comparable to gonorrhœa in the adult female, save that in children an extension to the uterine appendages is rare, while vaginitis, which is less common in adults, is almost invariable. He also states that as in adults the cervical canal and the urethra are usually involved and that the relapses and recrudescences are due to re-infection from these parts. Both for diagnosis and treatment Dr. Perrin uses Nitze's urethroscope with a small tube—viz., 25 or 30 Charrière. He takes specimens of pus from the vulva, the os uteri, the vagina, and the urethra for purposes of microscopical examination. The treatment recommended is the application of a 10 per cent. solution of protargol in glycerine. If the urethra is affected the same solution is applied by means of a tube in which is a probe with a small plug of wool soaked in the solution. The cervical canal and the vagina are treated in similar fashion. A compress of 1 per cent. protargol solution is applied to the vulva for a few minutes three or four times daily. Dr. Perrin has treated more than 100 cases by this method with very satisfactory results.

THE King has approved of the appointment of Dr. Theodore Dyke Acland and Dr. StClair Thomson to the consulting staff of the King Edward VII. Sanatorium at Midhurst.

WE deeply regret to announce the death of Mr. Henry Power, late consulting ophthalmic surgeon to St. Bartholomew's Hospital, who was for over 40 years an active member of the staff of THE LANCET.

WE much regret to announce the death within a few weeks of his eighty-ninth birthday, of Sir Francis Galton, the famous anthropologist.

# THE LONDON COUNTY COUNCIL AND THE MEDICAL TREATMENT OF SCHOOL CHILDREN.

WITHIN the next few weeks the position of the present scheme of providing medical treatment for school children in London through the agency of the hospitals may be expected to become critical, the London County Council having asked the Board of Education to agree to the extension for a whole year of the first agreements made with six of the hospitals. It seems doubtful whether the Board of Education will consent to a course which will have the effect of binding the Council to the present system for another 12 months. As an indication of the line the Board will probably take the following sentences from a letter recently addressed to the Council by the central authority[1] may be quoted:—

> The Board now felt it imperative to adopt a more critical attitude in regard to the Council's proposals. ..... The time was approaching when to would be unable to sanction the adoption of further schemes, even in an experimental basis, unless each particular scheme had been carefully thought out as regards all important details, and ..... *had been devised so as not to hamper or embarrass the local authority in adopting any comprehensive system of treatment which might commend itself to them in the future.*

The words italicised would seem to preclude approval of the Council's proposal to continue the agreements for another year. The matter is of such importance that we append some particulars of the report on the subject presented to the London County Council at the end of the year by the Education Committee and the discussion thereon. The Education Committee stated that when the scheme of medical treatment in London was embarked upon it was said to be of an experimental nature, the arrangements with each hospital were limited to twelve months, and a report was promised at the expiration of that time in which the whole question would be reviewed in the light of the experience gained. The period during which most of the agreements with the hospital authorities had been in operation was much less than a year, and sufficient time had not elapsed for a considered judgment on the merits of the scheme to be formed. A report would be presented later. In the meantime it was necessary to deal at once with the question of the renewals of the agreements with six hospitals which would expire during the Christmas recess. These were: the Belgrave Hospital for Children, Clapham-road, S.W.; the Charing Cross Hospital; Hospital for Diseases of the Throat, Golden-square, W.; the London Hospital; the Metropolitan Ear, Nose, and Throat Hospital; and St. George's Hospital. The committee was not able to give full particulars as to the attendance of the children at these hospitals, but from a sample of cases taken at random it appeared that upwards of 85 per cent. of those who attended continued attendance until they were discharged.

### *Modified Arrangements with Six Hospitals.*

The committee went into detail in regard to the agreements with each of the six hospitals. The Belgrave Hospital promised to provide treatment of 880 eye and 880 ear, nose, and throat cases during the year. During the period the agreement had been in force just over 500 cases had been treated in each department; 670 cases should have attended in each department after making allowance for holidays. The committee thought the governing body should be asked to regard its present number of cases as the minimum and to be prepared to treat further cases up to a maximum of 2640, or twice as many as at present. Charing Cross Hospital undertook to treat 1000 eye, 1000 ear, nose, and throat, and 200 ringworm cases. So far 1104 children had attended, and the full number who should have attended was 1734. Although this hospital was central and easily accessible there were within a reasonable distance other hospitals not included in the Council's scheme, where free treatment was available, and to these many parents had had recourse. In this case the committee recommended a reduction in the number of cases to be referred to the hospital to 500 ear, nose, and throat, 440 eye cases, and 200 ringworm cases. At the Hospital for Diseases of the Throat the Council paid 4*s.* for each case. There was no provision in the agreement as to numbers nor as to the payment of the medical staff. It was provided, however, that the staff should be qualified. Between Jan. 24th and Oct. 31st, 1910, 131 children attended, and it was estimated that from 100 to 200 would attend annually. As parents in this district had a wide choice of hospitals, at some of which free treatment was given, no number should be guaranteed to be sent to this hospital. At the London Hospital (3000 eye cases, 1500 ear, nose, and throat cases, and 250 ringworm cases) from Jan. 17th to Oct. 31st 2150 children attended the ophthalmic department, 1331 children in the ear, nose, and throat department, and 198 children in the skin department—total, 3679. The agreement with the hospital provided for 3654 cases in this period. This hospital was available for an extensive and thickly populated area of very poor people, and there was no difficulty in securing the attendance of large numbers of children. In the aural department there was at present a large waiting list. The committee estimated that in this district 9600 children would require treatment for ear, nose, and throat ailments, 3800 for affections of the eye, and 950 for skin diseases. The governing body of the London Hospital should be asked to arrange for the treatment of a minimum of 3000 ear, nose, and throat cases, 3000 eye cases, and 250 ringworm cases annually, and for the treatment of further ear, nose, and throat cases up to a maximum of 6000. The

[1] THE LANCET, Dec. 17th, 1910, p. 1774.

present agreement should continue until the hospital was prepared to deal with the whole or part of the increase. At the Metropolitan Ear, Nose and Throat Hospital, which agreed to take cases up to a maximum of 500, 222 children had attended so far with the Council's voucher cards. The governing body of the St. George's Hospital (700 ear cases, 1100 eye cases, and 200 ringworm cases) had dealt with 1068 children between Jan. 17th and Oct. 31st, and did not desire to renew the agreement, although to avoid inconvenience to the Council it would continue a few months longer. The King's College Hospital had also intimated that it did not desire to renew its agreement when it expired next month. The committee recommended that the agreements with the six hospitals be renewed for 12 months, except in the case of the St. George's Hospital, in which six months was suggested.

The committee gave the following figures with regard to the results which had been obtained at the six hospitals :—

| Hospital. | No. of children asked to attend up to 31/10/10. | No. of children the hospitals could have treated up to 31/10/10. | No. of children who attended up to 31/10/10. | No. of cases which have been investigated as to result of treatment. | No. of children under col. 5 who attended the hospital until discharged. | Percentage of children who attended until discharged. | Cost per case. |
|---|---|---|---|---|---|---|---|
| [(1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | | | | | | | *s.d.* |
| (i.) Belgrave Hospital for Children | 1,809 | 1,340 | 1,024 | 326 | 298 | 91·4 | 5 8 |
| (ii.) Charing Cross ... | 1,941 | 1,575 | 942 | 433 | 400 | 92·4 | 6 0 |
| (iii.) Hospital for Diseases of the Throat, Golden-square ... ... ... | 316 | 750 | 131 | 40 | 33 | 82·5 | 4 0 |
| (iv.) London Hospital | 4,203 | 3,467 | 3,481 | 550 | 417 | 75·8 | 3 4 |
| (v.) Metropolitan Ear, Nose, and Throat ... ... ... | 383 | 375 | 222 | 110 | 87 | 79 1 | 4 0 |
| (vi.) St. George's ... | 1,523 | 1,416 | 960 | 237 | 221 | 93·2 | 7 6 |
| | 10,175 | 8,923 | 6,760 | 1,696 | 1,456 | 85·8 | 4 8 |

*Discussion by the Council.*

Mr. MATTHEW remarked that these figures showed a serious leakage between the number of children who needed treatment and those who actually received it. The hospital scheme had broken down because no means existed of compelling the attendance of the children at the hospitals. They would not have an efficient scheme until the Council had control of places to which children could be taken and where they would be treated under the discipline of the school. Mr. Matthew referred to infected ears as an ailment for which only compulsory treatment would be effective. The hospital scheme was not cheap, it was not effective, and it was preventing subscriptions from going to the hospitals. At the same time that it hurt the hospitals it hurt the parents, who, before the scheme was inaugurated, could get their children treated for nothing. Nobody was satisfied with the present scheme; one hospital did not want it, another accepted it under protest, and it was carried out generally as a favour to the Council.

Mr. H. E. A. COTTON expressed the hope that arrangements would be made with medical practitioners in North St. Pancras and Islington similar to those in Hampstead, Norwood, and Wandsworth, as these districts were so far from the general hospitals.

Mr. R. A. BRAY was afraid that the Board of Education would not consent to extend the agreements for 12 months, seeing that the report promised on the results of the first year's working had not been presented. He objected to the present scheme because it abolished free medical treatment in London—the hospitals were now rate-supported institutions and would be regarded as such—and because the Council had no means of knowing what went on in the hospitals, or whether it was getting value for money.

Mr. FRANK SMITH said the Council's medical officer had estimated the cost of treatment in clinics at 3*s.* 4*d.* per head, and if that figure was justified the present scheme was not only less efficient but more expensive.

Mr. BRAY moved an amendment to insert in the agreements with the hospitals the words: "Subject to the condition that nothing in the agreement shall prevent the Council's representative from visiting the premises at which treatment is provided when the treatment is being given." He mentioned that those very words were included in the agreements with associations of private medical practitioners.

Miss ADLER, who seconded, believed the hospitals would welcome such a provision, as it would lead to greater co-operation being established with the school medical service.

The amendment was lost, and the recommendations of the Education Committee were then agreed to.

## MEDICINE AND THE LAW.

*An Action against a Surgeon: Abbott v. Ryall.*

ONE of the most important actions recently brought against a member of the medical profession in respect of his treatment of a patient occupied Mr. Justice Phillimore and a special jury for four days last week in the King's Bench Division, and ended in a verdict for the defendant surgeon. The plaintiffs were Mr. G. N. Abbott and Mrs. E. A. Abbott, his wife, and the defendant Mr. Charles Ryall. In October, 1908, the plaintiff, Mrs. Abbott, consulted her medical attendant, Dr. D. Fairweather, who was of the opinion that she was suffering from an internal tumour. After consultation with the defendant an operation was decided upon and was performed by him on Nov. 5th. The action was brought for damages for alleged negligence on the part of the defendant in its performance, the case for the plaintiff being that the defendant had left in the bowel after the operation a swab which he should not have left there; and secondly, that if he were justified in so leaving it, he had not informed those in attendance on his patient, of its presence or taken steps to ensure its ejection. After the operation Mrs. Abbott was able to go to Monaco at Christmas, returning home in March, and subsequently to that time suffered constantly from distension of the bowel, accompanied by severe pain and occasional vomiting. She was medically treated, and in October, 1909, consulted Mr. J. J. O'Donnell, who, according to his evidence, did not connect her condition with the operation, but coming to the conclusion that there was an obstruction prescribed large doses of olive oil, with the result that the swab was passed. With regard to the defendant's attitude on the finding of the swab being brought to his notice, there were attributed to him words implying denial of the use of the swab, which were eventually explained by him. Mrs. Abbott stated that at an interview with the defendant immediately after the passing of the swab he denied having inserted it, saying, when she asked who was responsible for it, "Oh, that is what we want to find out." It was also part of her case, as has been said, that he omitted to inform those present at the operation that it had been left in the bowel. Evidence on behalf of the plaintiffs was given by Mr. Russell Howard, speaking as an expert as to the use of a swab in such an operation, and as to the possible provision for its removal subsequently by tape attached to it. Mr. R. S. Dickson, Dr. Fairweather's partner, who had been present at the operation as anæsthetist, and Dr. Fairweather, who had acted in the capacity of dresser, described what they saw and denied any knowledge of the swab or the receipt of information from Mr. Ryall as to the leaving of it behind. These three witnesses, among other matters, were cross-examined as to the extreme gravity of the operation and of the conditions discovered by it, which they freely admitted, the last-named stating that the conditions found on opening the abdomen were "awful," that it was the worst operation he ever saw, and that it was a wonder that the patient should have survived it. Mr. O'Donnell gave evidence as to his treatment in October, 1909, and as to the condition of the patient then observed by him, admitting in cross-examination that she suffered much pain for some time after the swab had been got rid of, and that during this subsequent period there had been a recurrence of a "lump," the presence of a similar lump before the removal of the swab having been ascribed in the course of the case to it. Mr. O'Donnell also said, in answer to the defendant's counsel, that having heard the operation described, he was of opinion that

the leaving of the swab in the bowel was proper. The defendant, giving evidence, informed the jury that he advised the operation, and that when he commenced it only anticipated the presence of a fibrous tumour. Describing the operation, he deposed that on opening the abdomen he found more serious conditions than he expected. There were adhesions which rendered it a severe and dangerous operation, and a large tear in the bowel occurred. He took immediate steps to stop possible leakage by putting a swab in the bowel, when he proceeded to operate on the diseased parts. He also deposed that after the operation he told the nurse of the presence of the swab and of the necessity that it should be passed, and, further, that he was informed by her six days later that it had been passed. He was under the impression that Dr. Fairweather was aware of its presence, but he had not spoken of it to him. When he had an interview with Mr. Abbott in which the swab was spoken of he was under the impression that there had been an operation on Mrs. Abbott subsequently to the one which he had performed, whereas, although there had been one, it had preceded his by some years. On learning this from Mrs. Abbott next day, he referred to his notes and found the record of the leaving of the swab in the bowel and of the statement by the nurse that it had been passed. Having thus come to the conclusion that the swab was his he communicated with Mr. O'Donnell at once. On behalf of the defendant, evidence was given by Sir Alfred Fripp, Mr. W. E. Miles, and Mr. J. E. Lane, the last-named expressing the opinion that Mrs. Abbott had made a marvellous recovery after a very serious operation, and that Mr. Ryall, the defendant, had displayed great resource. Nurse Elizabeth Powell corroborated the evidence of Mr. Ryall as to his having informed her of the presence of the swab and as to the statement made by her afterwards in error to him. In summing up, Mr. Justice Phillimore directed the jury as to the law that it was for the surgeon to exercise reasonable skill and care, and that the absence of reasonable skill or care constituted negligence in the eye of the law. The burden of proof was on the plaintiffs, and they were not entitled to a verdict unless they had satisfied the jury that there had been a want of reasonable care or skill. After reviewing the evidence he left to the jury the following questions: 1. Was the defendant guilty of negligence by reason of his leaving the swab in the bowel? 2. Was he guilty of negligence by reason of his not informing sufficiently the persons in charge of Mrs. Abbott of its presence? 3. What damages had the plaintiffs sustained? The jury answered the two first questions in the negative, so that no reply was necessary to the third, and judgment was entered for the defendant with costs, a result upon which he is to be warmly congratulated, as is also the Medical Defence Union, which was responsible for the conduct of his case.

*The Sale of Poisons under the Pharmacy Acts, 1868, 1908.*

At the Lichfield county court recently the Pharmaceutical Society sued Mr. R. F. Jacks, a seedsman, for a penalty under Section 15 of the Pharmacy Act, 1868, for having sold nicotine contained in a compound known as "the XL.-all Vaporising Fumigator," contrary to the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908. The purchase upon which the action was founded was made by a witness, James Richardson, employed by the Pharmaceutical Society, who gave evidence that having purchased a bottle of the compound mentioned he found on examining it that there was no label on it with the name and address of the seller. The defendant admittedly had a licence under which he might lawfully sell the compound, under Section 2 of the Act of 1908, which, it will be remembered, provides for licences being granted by local authorities for the sale by nurserymen and others of poisons to be used exclusively in agriculture and horticulture. The essential facts of the case were in dispute, the serious suggestions being made that the defendant had not sold the bottle produced in evidence, as it differed from those kept in stock by him, or that the label had been deliberately removed with a view to legal proceedings being taken. Evidence was given by persons who had bought the compound in question from the defendant and by him that in their case the proper label had been on the bottles, and the defendant also gave evidence that to the best of his belief the bottle produced was not his and that he thought that he had none like it in stock. In addition to this, the point of law was taken that the proceedings should not have been under Section 15 of the Pharmacy Act of 1868, but under the new Act of 1908, under which he defendant held his licence to sell. In the latter case the proceedings would have been before magistrates in a court of summary jurisdiction, and not in a county court for the recovery of a penalty. The county court judge gave judgment for the defendant with costs on the higher scale, granting leave to the Pharmaceutical Society to appeal.

## THE NEWEST GARDEN CITY.

IT does seem as if future generations may live to see the abandonment of what used to be called London. The City of London has been for some time no longer a place of residence. Fashionable squares of a century back have in many other districts been converted into tradesmen's premises, and old mansions have become tenement houses let to working men and poor people generally. The radius of four miles round Charing Cross is becoming too small; for some it is too dear; for others it no longer offers the desired amenities. Above all, new conceptions are gaining a firm hold on the more thoughtful householder. He begins to resent the endless payment of rent to enrich speculative builders. If his presence, the rent he is charged, the local trade he promotes by his purchases, enhance the value of land and houses in his district, he wants a share of the wealth he thus helps to create. Again, his better knowledge of the laws of health makes him long, especially if he has the care of children, to get away from noisy, dusty, crowded streets and close-packed houses. The garden city movement is born out of these awakening perceptions. The householder begins to see that he might get a very much better return for his rent. Of course, it has always been cheaper and more healthy to live away from town and out in the open, but this was until recently scarcely practical for those who were engaged in business. The garden city has only become a possibility since the recent and very vast improvements in local traffic. Taking London as an example, what with the "tubes" and the electrification of the District Railway people may live 12 and 15 miles away and yet reach their business office more quickly than when they were only at a distance of three or four miles, but had to travel by horse omnibus. Still, the full advantages of the new situation can only be obtained by coöperation. The solitary individual, with no other resources than his yearly earnings, remains helpless unless he acts in association with others. This bringing into association of intending householders for economic and sanitary purposes is the object of the garden cities.

The last, and also one of the best examples of this movement is the Ruislip Manor Garden City. This endeavour will, we hope, progress harmoniously, though for a beginning most persons concerned quarrel vigorously as to how the name should be pronounced. It appears that in spite of the reservoir and the small river Pinn on the estate the name has nothing to do with the French word for little stream of flowing water, *ruisseau qui ruisselle*, but is pronounced as if spelt Ryslip. This estate belongs to King's College, Cambridge. It is 15 miles from Charing Cross and can be reached in from 18 to 33 minutes from five London stations. It comprises 1300 acres, but the enterprise, known as Ruislip Manor, Limited, is not to be handicapped by having to purchase the whole of this land. The capital of the company now forming will be free for remunerative work, instead of being locked up, as is sometimes the case, by the purchase of land for which there is no immediate use. Therefore there will be money in hand to build drains, make roads, provide lighting, water, &c. It is only when one portion of the estate is thus satisfactorily occupied that another strip of land will be purchased. For 21 years the land will be reserved for the company to purchase. When the estate is fully developed it will hold a population of 30,000. There are to be 3556 houses not exceeding a rental of £30; 3541 under £60; 524 under £100; and 21 houses exceeding £100 annual rental. The area devoted to building plots will be 837 acres, to open spaces 255 acres, and to roads 184 acres. Every tenant will have a garden of his own. There will be public playgrounds and woods, while by careful planning every effort will be made to render the place picturesque. All this is rendered possible by the public-spirited action of the Provost and Fellows of King's College, Cambridge, for they

have consented to sell their estate on terms that involve the purchasers in the smallest possible financial responsibility. Then the Ruislip-Northwood urban and district council has promptly sought to apply the Housing and Town Planning Act of 1909 to this estate, so that it shall be in every respect a model garden city. On its side the company shows its public spirit by renouncing all claims to dividends above 5 per cent. Also the ultimate surplus assets, after repaying subscribed capital and a 10 per cent. bonus thereon, is to be devoted to the benefit of residents on the estate, by such action as the erection of public buildings. Finally, residents will have facilities afforded, if they desire, to purchase the freehold of the land on which their houses are built. Thus the tenants by contributing to create wealth will have the satisfaction of sharing in the benefits that thus accrue. After the capital which renders the venture possible has earned an interest of 5 per cent., all further benefits will be spent as committees representing the residents may deem most agreeable to the inhabitants. So the latter are likely to obtain a large share in the prosperity they create.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Jan. 12th, Mr. BUTLIN, the President, being in the chair.

The PRESIDENT reported the death, on Dec. 12th, 1910, of Professor Franz König of Berlin, an honorary Fellow of the College, and he stated that he had written to express the sympathy and condolence of the Council with the members of the family.

The Council congratulated Sir Frederick Eve on being knighted.

The Council elected Mr. H. J. Waring a member of the Court of Examiners.

It was resolved to purchase an epidiascope with a complete outfit from Carl Zeiss, Limited.

A report was received from the Museum Committee on proposals for re-arranging the pathological collection and for providing additional accommodation for the display of specimens, including the new medico-legal collection. The report was referred to a joint meeting of the Museum and the Finance Committees.

Mr. Edmund Owen was nominated as a representative of the College to serve on the Council of Queen Victoria's Jubilee Institute for Nurses for three years from March 1st, 1911.

A letter was read from the University of St. Andrews inviting the Council to send a delegate to take part in the celebration of the 500th anniversary of the foundation of the University, which is to take place from Dec. 12th to 15th next. The President was appointed the delegate.

A letter was read from the medical secretary of the British Medical Association forwarding a copy of the following resolution adopted by the Council of the Association with a request that it might receive the consideration of the Council of the College:—

> That it is desirable that diagnosis and treatment of diseases of the eye, including the estimation of refractive errors and retinoscopy, should be compulsory subjects in every medical curriculum, and that every student should undergo a practical examination therein.

The letter was referred to the Committee of Management.

RAG FLOCK.—At a deputation received by Mr. Burns, President of the Local Government Board, on Jan. 13th, the importance of sterilising the raw materials used in the making of rag flock was urged upon his notice by several manufacturers. Mr. Burns expressed the opinion that no amount of sterilisation could render innocuous certain materials which he had himself seen. His view was that washing would probably remove nine-tenths of the objectionable elements. He advised the sections of the trade who on the one hand favoured washing and on the other sterilisation to come to some agreement in the matter and work out for themselves a practical method and standard.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8394 births and 5101 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in these towns, which had been equal to 14·1 and 14·3 per 1000 in the two preceding weeks, further rose to 15·5 in the week under notice. During the 13 weeks of last quarter the death-rates in these towns averaged 14·7 per 1000, against 14·8 and 14·3 in the corresponding quarters of 1908 and 1909. In London the annual death-rate last quarter was equal to 15·3 per 1000, against 13·7 and 13·5 in the two preceding corresponding quarters. The annual death-rates in the 77 towns during last week ranged from 3·6 in Hornsey, 5·9 in King's Norton, 7·6 in Leicester, and 8·4 in Aston Manor, to 21·8 in Bootle, 23·3 in Merthyr Tydfil, 24·2 in Grimsby, and 26·2 in Rotherham. The 5101 deaths from all causes in the 77 towns last week showed a further increase of 389 on the numbers in the two preceding weeks, and included 448 which were referred to the principal epidemic diseases, against 442, 391, and 392 in the three preceding weeks; of these 448 deaths from epidemic diseases, 191 resulted from measles, 87 from whooping-cough, 56 (of infants under two years of age) from diarrhœa and enteritis, 63 from diphtheria, 31 from scarlet fever, and 20 from enteric fever, but not one from small-pox. The fatal cases of measles, which had been 208, 185, and 160 in the three preceding weeks, rose again last week to 191, and caused the highest annual rates, 1·7 in West Ham, 1·8 in Tynemouth, 3·1 in Rotherham, and 3·2 in Sheffield. The 87 deaths from whooping-cough showed an increase of 34 upon the number in the previous week, and were proportionally most numerous in York and Rotherham. The deaths referred to diphtheria, which had been 55 and 76 in the two preceding weeks, declined again to 63 last week; they included 23 in London and its suburban districts, and 3 both in Bristol and in Leeds. The 56 deaths of infants under two years from diarrhœa and enteritis were within one of the number in the previous week; 16 occurred in London, 10 in Manchester and Salford, 7 in Liverpool and Bootle, and 4 in Rhondda. The fatal cases of scarlet fever, which had been 21 and 22 in the two previous weeks, rose to 31 last week, of which 8 were returned in London and its suburban districts, 6 in Liverpool, 3 in Manchester and Salford, and 3 in Bolton. The 20 deaths referred to enteric fever showed a further decline from the numbers in the two previous weeks, and included 5 in London, and 2 each in Derby, Wigan, Sheffield, and Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the nine preceding weeks from 1882 to 1491, had further fallen to 1410 on Saturday last; 135 new cases of this disease were admitted to these hospitals during the week, against 140 and 154 in the two previous weeks. These hospitals also contained on Saturday last 838 cases of diphtheria, 205 of measles, 116 of whooping-cough, and 73 of enteric fever. The 1435 deaths from all causes in London last week (an increase of 107 on the number in the previous week) included 292 which were referred to diseases of the respiratory system, against 263 and 289 in the two preceding weeks. In the 77 towns 180 deaths resulted from different forms of violence, corresponding with the number in the previous week; and 433 inquest cases were registered. The causes of 56, or 1·1 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and in each of its eight suburban districts, in Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Salford, Cardiff, and in 38 other smaller towns; the 56 uncertified causes of death in the 77 towns last week included 7 in Liverpool, 6 in Birmingham, 6 in St. Helens, 5 in Preston, and 3 each in Sunderland, South Shields, and Gateshead.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 889 births and 611 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in these towns, which had been equal to 14·7 and 14·3 in the two previous weeks, rose to 16·6 in the week under notice. During

the 13 weeks of last quarter the death-rates in these towns averaged 14·8 per 1000, only slightly exceeding the mean rate during the same period in the 77 English towns which was 14·7 per 1000. The annual death-rates during last week in the eight Scotch towns ranged from 13·7 and 14·6 in Paisley and Edinburgh to 20·4 and 27·7 in Greenock and Perth. The 611 deaths from all causes in the eight towns last week showed an increase of 85 on the number in the previous week, and included 51 which were referred to the principal epidemic diseases, against 40, 43, and 56 in the three preceding weeks; these 51 deaths were equal to an annual rate of 1·4 per 1000, the highest epidemic rates being 2·7 in Dundee and 4·2 in Perth. Of these 51 deaths from epidemic diseases 18 resulted from whooping-cough, 13 from diarrhœa, 9 from diphtheria, 5 from scarlet fever, and 3 both from enteric fever and measles, but not one from small-pox. The fatal cases of whooping-cough, which had been 7 and 20 in the two previous weeks, declined to 18 last week, of which 9 occurred in Glasgow, 5 in Dundee, and 3 in Leith. The 13 deaths attributed to diarrhœa included 8 of infants under two years of age; 5 deaths from this cause occurred in Glasgow and 3 in Dundee. The 9 deaths referred to diphtheria showed a decline of 5 from the number in the previous week, and included 3 in Glasgow and 2 in Perth. The 5 fatal cases of scarlet fever were within one of the number in the previous week; 2 were returned both in Glasgow and in Edinburgh. Two deaths both from enteric fever and measles also occurred in Glasgow, and 1 each from those diseases in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory system, which had been 92 and 98 in the two preceding weeks, further increased to 130 last week, but were 2 below the number in the corresponding week of last year. The deaths resulting from different forms of violence in the eight towns were 26 last week, against 17 and 19 in the two preceding weeks; and 200, or 33 per cent., occurred in public institutions. The causes of 21, or 3·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death last week did not exceed 1·1 per cent.

### HEALTH OF IRISH TOWNS.

In Dublin 230 births and 167 deaths were registered during the week ending Jan. 14th. The annual rate of mortality in the city, which had been equal to 18·9 and 21·5 per 1000 in the two preceding weeks, declined again to 21·4 in the week under notice. During the 13 weeks of last quarter the annual death-rate in the city averaged 19·8 per 1000, whereas in London the death-rate during the same period did not exceed 15·3 per 1000. The 167 deaths from all causes in Dublin last week were within one of the number in the previous week, and included 15 which were referred to the principal epidemic diseases, of which 5 resulted from whooping-cough, 4 (of infants under two years of age) from diarrhœa and enteritis, 3 from measles, 2 from diphtheria, and 1 from enteric fever, but not one either from scarlet fever or small-pox. The fatal cases both of whooping-cough and measles showed a slight decline from those in the previous week. The deaths from all causes included 40 of infants under one year of age, and 38 of persons aged upwards of 65 years; 68, or 41 per cent., of the deaths were recorded in public institutions. The causes of 5, or 3·0 per cent., of the deaths in the city during the week were not certified either by a registered medical practitioner or by a coroner. In Belfast 231 births and 151 deaths were registered during last week. The 151 deaths in this city were equal to an annual rate of 19·8 per 1000, against 12·1 and 16·0 in the two preceding weeks. During the 13 weeks of last quarter the annual death-rate in Belfast was equal to 16·0 per 1000, against 19·8 in Dublin during the same period. The 151 deaths from all causes in this city during last week included but one resulting from any of the principal epidemic diseases—namely, a fatal case of scarlet fever; no fatal case of measles, diphtheria, whooping-cough, enteric fever, diarrhœa, or small-pox was registered. Six deaths resulted from different forms of violence; 12 were registered on the information of the coroner, and 50, or 33 per cent., occurred in public institutions. The causes of all the 151 deaths in the city last week were duly certified either by a registered medical practitioner or by a coroner.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

Fleet-Surgeon George Welch has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Dec. 7th, 1910).

The following appointments have been notified:—Fleet-Surgeons: E. F. Mortimer to the *Bellerophon*, on recommissioning; S. H. Birt to the *Carnarvon*; W. G. Axford to the *Good Hope*, on commissioning; and E. Cooper to Queensferry Sick Quarters. Staff-Surgeon: A. X. Lavertine to the *Defence*, on recommissioning. Surgeon: R. J. G. Parnell to the *Victory*, additional, for disposal.

### ROYAL ARMY MEDICAL CORPS.

Colonel M. J. Kerin, C.B., officiating principal medical officer of the Seventh (Meerut) Division, has taken over the duties of Principal Medical Officer of the Bareilly, Garhwal, and Dehra Dun Brigades on the return of Colonel F. B. Maclean from leave. Lieutenant-Colonel J. Maher, from Potchefstroom, has taken over Medical Charge of Queen Alexandra's Military Hospital, Grosvenor-road, London. Lieutenant-Colonel E. J. E. Risk has been transferred from Belfast to the London District. Lieutenant-Colonel W. J. Baker has joined for duty at Cairo. Lieutenant-Colonel M. T. Yarr, medical inspector of recruits in the Scottish Command, has been granted 61 days' leave with permission to travel in France, Switzerland, and Italy. Lieutenant-Colonel R. H. Hall has taken over the duties of Senior Medical Officer at Bermuda. Major S. Macdonald, on arrival from Hong-Kong, has been appointed Recruiting Medical Officer to the London District. Major C. H. Hale, D.S.O., has embarked in the transport s.s. *Rewa* for a tour of duty in India. Major C. R. Elliott, sanitary officer, Third (Lahore) Division, has been transferred from Dalhousie to Lahore. Major L. P. More, staff officer for medical mobilisation stores, Second (Rawalpindi) Division, has been granted two months' combined leave home from India. Major W. Hallaran from the London District, has taken up duty at Lahore. Major F. J. W. Porter, D.S.O., recruiting medical officer, London District, has been transferred to the Southern Command. Major A. E. Smithson from Harrismith has joined for duty at Wynberg. Major A. C. Fox has returned to Tientsin on completion of his leave. Major P. J. Probyn, D.S.O., has arrived home from Hong-Kong. Captain J. B. Clarke has arrived home on duty from West Africa. Captain W. F. Tyndale, C.M.G., has taken over duty at the Royal Infirmary, Dublin. Captain W. C. Croly, Captain F. W. Lambelle, and Captain J. E. Gatt have embarked for a tour of service in India on the transport s.s. *Rewa*. Captain R. G. H. Tate, in charge of the Brigade Laboratory at Ambala, has been appointed a Specialist in the Prevention of Disease. Captain A. D. Jameson, specialist in venereal diseases and dermatology to the Aldershot Command, has been granted one month's leave of absence. Captain C. H. Turner has arrived home, tour-expired, from India. Captain W. F. H. Vaughan, on return to duty from sick leave, has been posted to the Scottish Command. Captain H. J. Crossley has been transferred from York to Richmond (Yorkshire). Captain M. C. Wetherell, from Meerut, has joined the station hospital, Sialkot, for duty. Captain R. P. Lewis, from Bloemfontein, has taken up duty at Wynberg. Captain A. C. Osburn, from Sheerness, has been appointed to Colchester. Lieutenant C. M. Nichol, from Colchester, has taken over medical charge of the troops and their families at Ipswich, in succession to Captain W. Croly. Lieutenant G. O. Chambers has been posted to the Northern Command. Lieutenant J. S. McCombe has been transferred from Bangalore to Malapuram. Lieutenant T. B. Nicholls, from Tidworth, has taken up duty in Egypt. Lieutenant H. G. Robertson, from Richmond, has joined at Sheffield. Lieutenant J. K. Gaunt, Lieutenant E. L. Fyffe, and Lieutenant T. J. Hallinan have been posted to the Irish Command.

### INDIAN MEDICAL SERVICE.

Colonel C. H. Beatson, C.B., Principal Medical Officer, First (Peshawar) Division, has arrived home on leave from India. The services of Lieutenant-Colonel D. St. J. D. Grant, Bengal, have been placed by the Government of India at the disposal of the Commander-in-Chief. Major G. Melville has taken over the appointment of Professor

of Materia Medica at the Medical College, Lahore, relieving Captain A. C. MacGilchrist, whose services have been replaced at the disposal of the Home Department of the Government of India. Major A. Leventon, civil surgeon of Lakhimpur, has been appointed Civil Surgeon at Darrang, Eastern Bengal. Major J. Fisher has taken over duty as Residency Surgeon at Jaipur from Lieutenant-Colonel W. H. B. Robinson. The services of Major W. D. Hayward, civil surgeon of Jaipajuri, Bengal, have been placed permanently at the disposal of the Army Department. Major P. Dee, Madras, has received two months' extension of leave of absence from India on medical certificate. Captain J. C. S. Oxley and Captain R. S. Kennedy have arrived home from India on leave. The services of Captain T. T. Owen have been placed at the disposal of the Government of Burma. Captain C. Dykes, on return from leave, has been appointed Civil Surgeon at Jaunpur. Captain S. H. Lee-Abbott, from Dalhousie, has been posted as Civil Surgeon to Ferozopore. Captain A. K. Lauddie, civil surgeon of Dera Ghazi Khan, has been granted 16½ months' privilege leave combined with furlough. The Lieutenant-Governor of the Punjab has made the following appointments: Captain M. Dalziel, superintendent of the Central Jail, Multan, posted to Multan, on return from combined leave, relieving Captain W. T. Finlayson. Captain W. T. Finlayson, superintendent of the District and Female Jails, Lahore, posted to Lahore, relieving Captain R. A. Chambers. Captain E. D. W. Greig has been appointed to officiate as Director of the Central Research Institute at Kasauli during the absence of Sir David Semple.

### SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

Captain Jonathan Clerke to be Major (dated Jan. 11th, 1911). James Oliver Hamilton to be Lieutenant (on probation) (dated Nov. 9th, 1910).

### TERRITORIAL FORCE.

Colonel Philip E. Hill, administrative medical officer of the Welsh Territorial Division, resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Jan. 18th, 1911).

*Royal Army Medical Corps.*

3rd South Midland Field Ambulance, Royal Army Medical Corps: Charles Ferrier Walters (late Quartermaster and Honorary Lieutenant, 2nd Southern General Hospital) to be Lieutenant (dated Jan. 18th, 1911).

2nd Southern General Hospital, Royal Army Medical Corps: Quartermaster and Honorary Lieutenant Charles F. Walters resigns his commission (dated Jan. 18th, 1911).

*For attachment to Units other than Medical Units.*—James Andrew Simpson to be Lieutenant (dated Oct. 12th, 1910). Captain James King Patrick, from the 2nd Lowland Field Ambulance, Royal Army Medical Corps, to be Captain (dated Nov. 18th, 1910). Christopher Francis Murphy to be Lieutenant (dated Nov. 29th, 1910).

*Attached to Units other than Medical Units.*—Captain (Honorary Captain in the Army) James C. G. Macnab resigns his commission (dated Jan. 18th, 1911).

### THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on Jan. 10th, Sir J. N. Dick, K.C.B., being in the chair, the sum of £50 was distributed among the several applicants.

### QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE RESERVE.

The regulations for this service, which have just been issued, state that the Reserve has been formed for the purpose of supplementing the staff of Queen Alexandra's Royal Naval Nursing Service during naval warfare on a large scale. The Director-General of the Medical Department of the Navy will be responsible for the administration and 250 nurses will be employed. This number may, however, be augmented in case of necessity during hostilities.

### DEATHS IN THE SERVICES.

Fleet-Surgeon James Macdonald Rogers, R.N., of the *Orontes*, recently at Malta. He entered the service as a surgeon in 1884, and became fleet-surgeon in 1900. In that year he was awarded he Sir Gilbert Blane gold navy medal.

Deputy Inspector-General of Hospitals and Fleets Matthew Coates, R.N., at his residence at Dawlish on Jan. 13th. He entered the service as surgeon in 1859, became staff-surgeon in 1871 and fleet-surgeon in 1882, in which year he retired with the rank of deputy inspector-general.

# Correspondence.

"Audi alteram partem."

## INTERNATIONAL HYGIENE EXHIBITION AT DRESDEN: AN APPEAL.

*To the Editor of* THE LANCET.

SIR,—In the month of May of this year a great exhibition will be opened in Dresden, at which a complete record of the achievement of hygiene from the earliest times up to the present day will be laid before the eyes of the public. Advance will be stimulated by means of over 200 conferences and congresses, and every nation of importance will take part in the endeavour to improve the conditions of mankind.

Since the Government, acting on the advice of the Board of Trade, has decided not to take an official part in this undertaking, there is a grave danger that Great Britain, the admitted leader in hygiene, may be the only nation of importance which is not represented. To save this country from such a disastrous occurrence the vice-presidents of the British Executive Committee, together with a number of men eminent in the world of science, have issued an appeal letter asking for the sum of £10,000. Within a week of the issue of this appeal upwards of £2000 have been subscribed or guaranteed. Sums of 5*s.* (from a "Lover of Peace and Goodwill") up to £100 (from the Corporation of Glasgow) have been received, and guarantees of from £1 to £300 have been given. A very generous offer has been made by Mr. Joseph Rowntree. His family will give £500 if nine others will come forward with at least an equal amount.

With confidence we turn to your readers to save Great Britain from having to hang her head in shame. The world has a right to expect this country to take a prominent part in this friendly international endeavour. The exhibition in Dresden must not be compared with ordinary industrial and "side-show" exhibitions. It will be a vast museum and school, where every legitimate means will be employed in order that its scientific, humanitarian, and educational purposes may be fulfilled. Time is short. The Administration in Dresden asked for a definite reply by the 15th of this month, but has granted an extension.

Subscriptions, both large and small, will be gratefully acknowledged if addressed to the secretary. Cheques should be made payable to the Right Hon. Lord Ilkeston.

We are, Sir, your obedient servants,

THOMAS BARLOW,
Chairman.
ILKESTON,
Hon. Treasurer.
H. W. ARMIT,
Secretary.

47, Victoria-street, Westminster, S.W.

## A RETROGRADE STEP IN DEATH REGISTRATION.

*To the Editor of* THE LANCET.

SIR,—With something akin to a flourish of trumpets, the Registrars-General for the three divisions of the United Kingdom announce, in the first of their Weekly Returns for 1911, that, among other changes, the International List, or Classification, of Causes of Death has been adopted in their several reports.

At the first glance, and from the medical statistician's point of view, this change seems to be a proper and a useful one. But let us look into the matter a little more closely, and from a sanitary standpoint, and the glamour fades. In the modified list "cerebro-spinal fever" takes its place among "other diseases of the nervous system"; "pneumonia" (which, by the way, is advancing by leaps and bounds into the first rank of "the ministers of death") is grouped with "other diseases of the respiratory system"; "diarrhœa

and enteritis," which demand "more than a human hecatomb" from child life every week in the late summer and early autumn year by year, are bracketed with "other diseases of the digestive system"; while "puerperal fever (septicæmia), &c.," are followed by "other causes incident to childbirth."

Now, it will be observed that every one of these diseases undoubtedly belongs to the class of the acute infections, and the infecting agent in the first two of them, at all events, has long since been identified and isolated. And even in the case of summer diarrhœa the active part played by Shiga's bacillus as a causative agent can hardly be questioned at the present day. Further, is not "puerperal fever" universally acknowledged to be due to sepsis caused by sapræmia or septicæmia—forms of toxæmia which in the International List are grouped with tetanus and tuberculosis? Surely small-pox, measles, and scarlatina might just as well be included with "diseases of the skin and cellular tissue," or influenza, diphtheria, and "croup" (which last term should be expunged from any scientific list of diseases) with "diseases of the respiratory system," or enteric fever with "diseases of the digestive system." "Typhus," again, has disappeared from the International List as printed in the English Weekly Return, but it has very properly been retained among "other epidemic diseases" by the Registrar-General for Ireland.

The point, however, which I wish in particular to make is that the transference of such unquestioned acute infections as cerebro-spinal fever, pneumonia, diarrhœa, and puerperal fever from their rightful position under the heading "epidemic diseases," places a formidable stumbling-block in the path of sanitary reformers and medical officers of health. The hands of the State Medicine clock are being put back a quarter of a century at least—to pre-notification days. For when sanitary authorities are asked to add such and such a disease to the schedule of the Notification and Prevention of Infectious Diseases Acts, they will answer: "Oh! the Registrar-General holds that this disease is one of the respiratory system, that other is an affection of the digestive system."

In Ireland on March 31st, 1910, the provisions of the Infectious Disease Notification Act of 1889 had been adopted in 142 out of 158 rural districts, and in 83 out of 95 urban districts. Throughout Great Britain the Act has long since been in force. Writing as a resident in Ireland, I cannot but regard with concern a modification in the list of causes of death which will probably delay (for it cannot ultimately prevent) the including among notifiable diseases under an Act which is now almost universally adopted in the United Kingdom of such death-dealing, yet preventable, maladies as pneumonic fever and epidemic diarrhœa.

I am, Sir, yours faithfully,

JOHN W. MOORE, M.A., M.D., D.P.H.
(1871) Dub., F.R.C.P. Irel.

Dublin, Jan. 16th, 1911.

## ABBOTT AND WIFE *v.* RYALL.

*To the Editor of* THE LANCET.

SIR,—I have seen a cutting from one of the morning papers misrepresenting the answers given to certain questions put to me in a law court last week. My object in writing to you is to make it clear that in my answers the word "anxiety" was only employed in relation to the giving of "instructions" (for after-treatment and observations of results) to "subordinates."

The case was an important one for our profession, and one of the chief points upon which it turned (*vide* the summing-up) was the matter of the instructions given by the doctors to the nurses, and the deductions made by them from the report of the nurses as to the result of the carrying out of those instructions. I was in the witness box more than half an hour, being examined, cross-examined, re-examined, and then questioned by the judge. The two reports which I have seen were brief epitomes. That in the *Times* is a fair one, and demonstrates that that reporter clearly understood the matter in question to be one of "instructions" given by a surgeon to a nurse—his nurse—the nurse he had taken to the case. The word essential to the proper understanding of the questions and answers with which this note is concerned is "subordinate."

I was asked whether "the surgeon would before leaving the case give *instructions* to his *subordinate*," and I replied "Yes." Then to a further question, of detail as to examining and reporting the result of an enema given with the intention of bringing away the swab from the bowel, I said, "As this case shows that is one of our greatest anxieties." And with this statement surely everybody who is used to the after-care of abdominal operations will agree.

I ask you to publish this explanation in case any of your readers may have seen only the second, the unfair and misleading, epitome to which I refer at the beginning of this letter; for in attempting to boil down into one the many questions and answers upon a technical point it misses entirely the matter at issue; and, what is far worse, it at the same time insults my profession and myself by substituting for the word "subordinate" the words "patient's medical adviser."

That this substitution was effected by some reporter who is quite incapable of conveying, even if he can grasp, the technical points involved in the evidence is proved by his senseless jumbling of terms in the preceding paragraph.

I am, Sir, yours faithfully,

ALFRED D. FRIPP.

Jan. 17th, 1911.

## A METHOD OF SERUM DIAGNOSIS FOR TUBERCLE.

*To the Editor of* THE LANCET.

SIR,—The object of my letter with regard to Captain V. B. Nesfield's communication on the serum diagnosis of tubercle was to point out that practically all persons—adults especially—have in their blood antibodies to the tubercle bacillus, and that, therefore, any method of diagnosis must be an accurate quantitative one. It is not a question of presence or absence, but of more or less. I believe I have found such a method by the application of a new principle—i.e., the estimation of the time in which complement absorption takes place with an emulsion of bacteria of definite strength under standard conditions. The process is simple and easy in execution, gives exact results, and is available for all cultivable organisms (though I have only used it at present for tubercle and typhoid), and I think it will be found of great clinical value as affording the simplest method for the application of the Bordet-Gengou reaction in diagnosis.

Captain Nesfield's method of gauging the strength of the emulsion by the appearance (i.e., by guess) is entirely inadequate where quantitative work is to be undertaken. For opsonic work it is different, for here a normal control is used in every case; and even here the careful worker will endeavour, by means of an orientating test, to get his emulsion as uniform as possible on each occasion. In a preliminary communication such as I was making I did not think it necessary to go into details, nor do I now; I may remark, however, that my standard emulsion is carefully sterilised, so that no "short, broad bacillus" can make its appearance, and that controls have been made to show that the disappearance of the complement is really due to specific absorption and not to destruction at the incubator temperature, which does not take place for a much longer period.

I have determined the amount of complement in the serum in a considerable number of cases by an accurate method, and have as yet found no connexion between the figures thus obtained, the amount of antibodies (as determined by the absorption time), and the opsonic index. The question as to whether free complement exists in the circulating blood or not has formed, as any of your readers who are interested in the study of immunity will know, one of the important controversies arising out of the subject, and Captain Nesfield will find an outline of the more important facts bearing on the dispute in my book on Immunity and Specific Therapy, where three pages are devoted to this question. I have also mentioned the fact that opsonin is absorbed along with complement in the Bordet-Gengou reaction, which I thought was now well known.

Captain Nesfield makes numerous definite statements which are entirely unjustified in the present state of our knowledge of the subject—for instance, that a patient suffering from tubercle must constantly be losing complement from intravascular deviation. There is no evidence that this ever occurs, and we should not expect it to do so if there is no free complement in the plasma. Again, he says that an excessive dose of tuberculin would probably reduce the complement in the blood and be a source of danger. I am aware that some

observers have found a diminution of the complement in the serum during anaphylactic shock, but this is not generally accepted, and even during a severe tuberculin reaction I have not found the amount reduced. Even if it were, there is no proof that it would be harmful. In my own measurements of the amount of complement in the different conditions I have found no relation whatever between the amount and the severity of the disease or any clinical indication. Lastly, he says that a falling opsonic index would at once show this and indicate danger. I am not prepared to say that there is no connexion between the opsonic index and the amount of complement, but if there is it is quite certain that it may be masked by other factors, and that a high index does not necessarily mean a large amount of complement, or *vice versâ*.

In conclusion, may I point out that all hæmolytic observations on Hecht's method are liable to be vitiated by the fact that the amount of amboceptor is subject to variations, as yet unmeasured, and that this, as well as the variation in the amount of complement (which can be measured easily), renders accurate work impossible, or at least arduous in the extreme?

I am, Sir, yours faithfully.

Jan. 16th, 1911. W. D'ESTE EMERY.

## RECENT VIEWS AS TO THE MECHANISM OF ANTISTAPHYLOCOCCAL DEFENCE.

*To the Editor of* THE LANCET.

SIR,—Amid so much that was interesting in Dr. F. W. Andrewes's Croonian lectures[1] it was disappointing to find how little attention the lecturer gave to the medical aspect of his subject. He told us that the new facts prove the immense importance of phagocytosis in pyogenic, and its lesser importance in non-pyogenic, infections; but, apart from this, I hardly remember a single practical application he has made of his discoveries. He has certainly not applied them to the solution of any of the more thorny problems which vex the practitioner in his daily association with infectious ailments. Perhaps, considering the nature of Dr. Andrewes's work, it could not well have been otherwise. In artificial infections local inflammations are much less prominent than they are in natural illness. To the intravenous inoculator of rabbits an infection comes to be little more than a useful starting point for a circulatory leucocytosis, whose source and fluctuations are to be examined in detail, but whose destination in the actual conflict with the bacteria may be left in a convenient vagueness. To the clinician, however, the sole interest of such researches lies in the light which they shed upon disease; nor, allowing for the extreme looseness of the parallel, is there any reason why the phenomena of animal infection should not be utilised for the purpose of illustrating human pathology. Looking at the experiments in this rather utilitarian way, I wish to consider how views which I outlined in a letter to THE LANCET of June 25th last are affected by Dr. Andrewes's and other recent work.

Let me recall that to Dr. Andrewes, as to most present-day authors, the main defence in staphylococcal infections is phagocytosis, while my letter was designed to show that in the furuncular group the chief danger, that from the spread of the local inflammation, is probably combated by antitoxis. In the first place, were leucocytes the chief defence in carbuncle we should expect a gradual arrest of the complaint, as they gradually got the upper hand of the bacteria. The fact that expansion goes on with no apparent diminution of rapidity suggests rather a new force brought suddenly to bear than the final effort of an agent that had been slowly wearing down the bacterial attack. Moreover, the time at which arrest takes place, some days at least from the onset, agrees well with the time required for the preparation of an antitoxic, and not so well with that required for the institution of a phagocytic, defence. Not only as regards defensive preparation, but still more from the point of view of the relative strength of the opposed forces, the time of arrest is unfavourable to the phagocytic theory. As there must be during the expansion of a carbuncle the same constantly increasing proportion of bacteria and toxins to defending leucocytes as I have pointed out there is to defending tissues, arrest ought upon that theory to take place at the very beginning of the trouble, when defence is relatively strong in comparison with the attack, and not, as it actually does, at a stage when things are most favourable to the invading bacteria. Further, the likelihood of the leucocytes contributing materially to arrest will be the smaller the larger, we suppose, the number of them to be that are present in the first stage of carbuncle. A small leucocytosis might be thought insufficient to kill the bacteria. A large one would indicate the breakdown of the phagocytic defence in circumstances that were well suited to its effective exercise. On the evidence hitherto available one had imagined the number to be comparatively small. The relatively mild symptoms, the contrast, so much more marked than the common descriptions imply, between the characters of the swelling in the earlier and in the later stage, the kind of juice which can be squeezed from the section, all pointed to the probability of a rather small leucocytosis. Dr. Andrewes's experiments, however, suggesting a large early circulatory leucocytosis, make it almost certain that the part taken by leucocytes in the constitution of the early swelling of carbuncle is a large one, and so far are unfavourable to the phagocytic theory. Significant, too, in the present connexion is the recent surgical reaction against the theory, due partly to the disappointing results of the vaccination treatment, partly to a growing conviction as to the enormous anti-bacterial powers of the healthy tissues. The immunising functions of the leucocytes are now admitted to have been a good deal exaggerated, and to be still very imperfectly understood. Basing upon clinical experience, as the only safeguard against the like errors in future, we have to look for a theory which shall at once meet the difficulties I have enumerated, and escape a still more fatal objection to the current phagocytic doctrine to which I will come presently.

Obvious as are the above considerations, the force of some of them would clearly be lessened, were it permissible to regard the nascent leucocyte as having a higher defensive value than the ordinary circulatory one. The leucocytes formed in connexion with the bone-marrow changes, which occur some days after infection, might then be credited with an arrestive power which the first arrivals at the inflamed focus were without. While it is possible that in carbuncle such a higher arrestive power is actually exerted by the later-formed leucocytes, observation of the course of the complaint makes it extremely unlikely that the mode of arrest is phagocytic. Though no one has hitherto paid any attention to the facts tending to show the existence and successive neutralisation in carbuncle of at least two toxins, both the facts themselves and their bearing on the doctrine of immunity are sufficiently plain. The ultimate reason, which bars the phagocytic theory, is the circumstance that, under normal conditions—i.e., in carbuncle occurring in otherwise fairly healthy persons without complications—constitutional symptoms are met with chiefly in the period extending from arrest of the complaint onwards. The notion that we have to do with only one toxin will therefore imply that it can exert a disorganising effect on the tissues, when present in quantity, which produces little or no constitutional disturbance, and be without power to cause local damage, when in quantity capable of causing general symptoms of a quite noticeable order. Allowing then that an idea which involves an absurdity must itself be absurd, we seem driven to the alternative of admitting the toxic duality. But if in carbuncle two poisons are successively got rid of, clearly the neutralisation of the first cannot have been due to phagocytosis, for in that case the second must have ceased to be produced. In a word, the continued operation of the constitutional poison long after the tissue-destroyer has ceased to give trouble is a fairly obvious indication that the latter has been neutralised by an antitoxin.

Those who have had practical experience of infectious ailments will usually have no difficulty in admitting, as the preceding argument requires us to admit, that the constitutional symptoms of carbuncle are really toxic in character. In medicine, however, there are many different view points, and we read in the Croonian lectures without any surprise that the "chief clinical symptoms of infective disease depend on the work of defence." Dr. Andrewes nowhere says upon what particular defensive work they depend, but the plain inference is that it is the leucocytosis. There is nothing else in his analysis of the factors of immunity with

[1] Croonian Lectures on the Behaviour of the Leucocytes in Infection and Immunity delivered before the Royal College of Physicians of London by Dr. F. W. Andrewes, THE LANCET, June 25th (p. 1737), July 2nd (p. 8), 9th (p. 83), and 16th (p. 153), 1910.

which it is possible to connect them. First, then, as regards a possible relation of the symptoms to a circulatory leucocytosis, it is perhaps sufficient to say that there is a good deal of evidence against, and none at all in favour of, the idea. The facts bearing on the subject are detailed in the lectures, and it would be idle to repeat them here. They make it probable that in a good many infections the symptoms are due to a circulatory leucopenia and wholly impossible to treat seriously the suggestion that in carbuncle they may result from the opposite condition. There remains the question of their possible connexion with the local leucocytosis. No one, of course, doubts that the local symptoms of inflammatory complaints are due largely to local tension. The point is whether the general ones are similarly determined. Can we regard the fever, chills, sickness, faintness, malaise, and so forth, as resulting from the local accumulation of leucocytes? We have it on the best authority that tension alone will cause rise of temperature, but we are dealing in carbuncle with a very different condition from that of an aseptic wound with confined discharges. We have, on the one hand, the symptoms I have just mentioned, and, on the other, a sore teeming with bacteria and their toxins. Is it more reasonable to suppose that these are related as effects and cause, or that they have no relation to one another at all, and that the source of the symptoms is a tension caused by leucocytes which have been brought to the part for no other reason except as a defence against the bacteria? The inquiry seems to admit of only one answer, unless we are to form a very different idea of nature's therapeutic methods from any that has been hitherto entertained. It may be added that in carbuncle the greatest intensity of the symptoms does not correspond very accurately with the maximum tension. The symptoms are often most marked after the tension has been somewhat relieved—a fact which in another respect favours the intoxication notion. When the extreme pressure on the absorbents and capillaries is relieved the poisons will be more freely taken up.

Closely connected with Dr. Andrewes's symptomatology is his statement that the pyococci do not form soluble toxins. In my June letter I assume that the poison of carbuncle is not very readily absorbed, but have never thought of it as either a solid or as remaining inside the bacteria, in the manner apparently imagined by Dr. Andrewes. On the latter view we should have to assume the intra-bacterial neutralisation of a toxin, which had exerted extremely powerful extra-bacterial effects, an idea which, though savouring of the "transcendental pseudo-chemistry," which Dr. Andrewes denounces, might perhaps be admitted. But a more serious difficulty presents itself as to how the bacteria are to get through the immense accumulation of leucocytes in order to produce the late constitutional symptoms of carbuncle. It has been alleged that in the great destruction of tissue which often takes place the bacteria may enter the ends of severed blood-vessels; but this, while it certainly occurs at times, seems insufficient as a general explanation. What Dr. Andrewes says as to fluctuations in the later systemic leucocytosis is of interest in relation to the question of the solubility of the toxins. The fluctuations receive no explanation on his theory of chemiotaxic attraction, but if we suppose the stream of leucocytes to be a response to local absorption it may be expected to vary with the latter. The fact that constitutional symptoms may in certain cases be elicited by pinching a carbuncle shows that absorption varies with the local pressure. Therefore, it will vary with the variations of pressure which must occur naturally in the course of carbuncle. It will vary also with other natural variations—variations, e.g., in the activity of the capillaries and lymphatics. Such slight normal variations could scarcely, however, affect materially the absorption of bacteria, but might cause alterations in the rate of absorption of a more or less soluble toxin. Also the somewhat variable, fitful, or wavy character which patients at times ascribe to their sensations fits in very well with the notion of a varying absorption from the focus. Thus many indications concur with Dr. Andrewes's discovery of fluctuations in the late staphylococcal leucocytoses to lend countenance to the notion that the systemic poison of carbuncle may possibly be fluid.

Finally, I may refer to the work of those busy allies of Dr. Andrewes, who approach the subject on its more practical side. To expect a practitioner to prove that his treatment is an essential element in the cure is to impose a test which has never been considered entirely fair. It will always be open to critics, and I am afraid some of them have been unkind enough to avail themselves of the opportunity, to say that cure would have occurred just the same without the special measures employed. Still, the vaccinationist is not quite the kind of person to be browbeaten, and there is nothing very extravagant in the belief that had he succeeded in stopping a carbuncle he would certainly have claimed to be able to do so. Now, I have searched the published writings with some care, and have nowhere seen it asserted that vaccination will cause a carbuncle to stop short of the size it would in the natural unvaccinated course of things have attained. The statements are either quite general or indicate that the treatment is of use, not in the arrest, but in the cure of the complaint. Thus Western records nine cases in THE LANCET of Nov. 23rd, 1907, cured by aureus vaccine, which had all been previously treated in the ordinary way "without showing any adequate attempts at repair." Others speak of the "efficacy of the vaccine in breaking down chronic indurations." It is certain that the vaccinators have not yet been able to point to results comparable with those obtained from the serum treatment in diphtheria. They have not shown us the brawny induration of an enlarging carbuncle changed in the course of a few hours into a healthy granulating sore. Their failure is confessed in the fact that they one and all recommend the use of an auto-vaccine, during the preparation of which the carbuncle will in almost every case have already become arrested. That the injections should promote healing is what many facts of general experience would lead one to expect. Though we do not know in what precise way the staphylococci interfere with repair, the importance of phagocytosis in the late stage of carbuncle is established quite independently of the vaccine therapy. Speaking for myself, it has never occurred to me to think that the systemic poison in carbuncle is destroyed by antitoxis. In my letter I say that "it is scarcely at all neutralised by antitoxins." It is doubtless eliminated from the body by the ordinary channels and destroyed locally as the leucocytes gradually get the mastery of the bacteria. Thus, in carbuncle, while the main danger from tissue destruction is provided against by antitoxis, the lesser from non-healing and systemic intoxication is dealt with by phagocytosis, just as in the contrasted case of diphtheria the greater peril from systemic poisoning is met by antitoxis, while the lesser from the local inflammation is probably counteracted by phagocytosis. Both complaints show us antitoxins forming, as it were, the last line of defence against bacterial attack.

I am, Sir, yours faithfully,

I. B. MUIRHEAD.

Stoke Newington Common, N., Dec. 27th, 1910.

## A MEDICAL CLUB IN PARIS.

*To the Editor of* THE LANCET.

SIR,—Dr. Madeuf, whom I know personally, has asked me to draw attention to the Médical Club Étranger in the English medical papers. I have visited the place, which is thoroughly well built and organised. As it is likely to be of great use to English medical men visiting Paris, I think it worth while to draw their attention to it.

I am, Sir, yours faithfully,

H. J. JOHNSTON-LAVIS.

Beaulieu, Alpes-Maritimes, Jan. 9th, 1911.

## TUBERCULOSIS AND STATE INTERVENTION.

*To the Editor of* THE LANCET.

SIR,—Our attention has been drawn to certain ambiguous references to the Conference on Tuberculosis held recently at Edinburgh. These concern more particularly the resolution which was passed at the close of the discussion on "The Working Man in Relation to Tuberculosis." The suggestion has been made, and is prominently repeated by the authors of "The Conquest of Consumption" in the preface to the second edition, that the Conference "was practically unanimous in the opinion that some form of State intervention was necessary." As occurring in the introduction to

an elaborate plan of campaign, in which the authors relegate in wholesale fashion to the State responsibility for the handling of the tuberculosis problem, the sentence seems to us misleading.

We think it right to say that the resolution which was adopted by the Conference was limited to the question of working men's invalidity insurance. The actual terms of the resolution were as follows:—

That the special attention of the Chancellor of the Exchequer, Government, and Parliament be called to the great importance of giving the prevention and treatment of tuberculosis a prominent place in the proposed scheme of invalid insurance.

We are, Sir, yours faithfully,

W. LESLIE LYALL, M.B. } Joint Honorary
JAMES MILLER, M.D. } Secretaries.

Edinburgh, Jan. 17th, 1911.

## A POINT IN CHOLELITHIASIS.

*To the Editor of* THE LANCET.

SIR,—In your issue of Dec. 24th last Dr. Duncan Macartney asks for instances where large numbers of gall-stones have been removed by operation. In February, 1910, I operated upon a male patient of Dr. W. B. Chapman of Rochdale, and removed 3007 gall-stones, varying in size from a hazel nut to a split pea, and all facetted. The stones are now in my possession, though I have not myself verified their number, the patient having counted them during his convalescence. He had suffered for many years from severe attacks of colic, each of very short duration, and on no occasion followed by jaundice. The gall-bladder appeared, apart from the presence of these calculi, to be normal, and I performed merely a cholecystostomy. His convalescence was interrupted by an attack of pulmonary embolism in the third week, followed by embolic pneumonia, from which he ultimately made a good recovery, and he is now in excellent health.

I am, Sir, yours faithfully.

Manchester, Jan. 16th, 1911. ARTHUR H. BURGESS.

THE PRINCE FRANCIS OF TECK MEMORIAL FUND.—At the Memorial Concert for the late Prince Francis of Teck, to be held in aid of the funds of the Middlesex Hospital at Queen's Hall on Jan. 24th, the programme will consist of Beethoven's overture, "Leonora III.," Verdi's famous "Requiem," with 500 voices and instruments, by the Brighton Choir and Festival Orchestra, under Mr. Joseph Sainton, and Wagner's triumphant "Heldegungs-Marsch." The soprano parts will be sung by Miss Alys Bateman, who needs no introduction. Other artists on the programme are Hannah Jones, Ben Davies, and Edmund Burke, the last-named by permission of the Italian Opera Company, Covent Garden.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce for publication a new edition of Vol. IV. of "Allen's Commercial Organic Analysis," which has been rewritten under the editorship of Mr. W. A. Davis, B.Sc., and Mr. S. S. Sadtler, S.B. The subjects and authors are as follows: Resins, by M. B. Blackler; India-rubber, Rubber Substitutes, and Gutta-percha, by E. W. Lewis; Hydrocarbons and Ketones of Essential Oils, by T. M. Lowry; Volatile or Essential Oils, by E. J. Parry; Special Characters of Essential Oils and Tables of Essential Oils, by H. Leffmann and C. H. LaWall. It will be seen that each subject is handled by an expert in his department.—Messrs. George Newnes, Limited, announce the impending publication of "Careers for Men, Women, and Children," a book describing most occupations, giving information regarding education or training required, length of time taken in preparation, the cost of qualifying, incomes to be made, and prospects afforded by the employments.—Messrs. W. B. Saunders Company announce that they have in the press for immediate publication a work on "The Anatomic and Histological Processes of Bright's Disease," by Dr. Horst Oertel, director of the Russell Sage Institute of Pathology, New York. In the preparation of this work the author has had in mind a twofold aim—to present the visual picture of nephritis and to prepare the proper way for the understanding of the genesis of the disease.

## THE HOUSING PROBLEM IN SOUTH WALES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Merthyr Tydfil, Dec. 1st, 1910.

*The Valley of Martyrdom.*

THE problem of the housing of the poor, always difficult and nowhere satisfactorily solved, has been stated to be specially acute in both North and South Wales. Undoubtedly there are in South Wales very substantial reasons why this is likely to be the case. There is the rapid and uneven growth of population of South Wales, springing from 587,000 in 1801 to 2,013,000 in 1901. If, however, this more than three-fold increase had been evenly spread over Wales it would not have mattered, but half the population of South Wales is living in Glamorganshire, which is only one-ninth of the entire area. Here the augmentation of inhabitants during the last century has been fourteenfold, and no one will be surprised to find that the building of houses has not kept pace with the advent of the new inhabitants. Thus the housing trouble, urgent in all large agglomerations, is specially serious round and about the great iron-works and mining industries of South Wales. The Local Government Board, fully cognisant of the figures, caused a series of special investigations to be made, and some four years ago published many reports on the subject. The chief centre, of course, is Merthyr Tydfil, where a Christian princess named Tydfil was martyred in the sixth century. The church subsequently raised to commemorate this martyrdom has become the centre of a great manufacturing district where many thousands have been brought prematurely to the grave—martyrs to the Moloch of modern industrialism. Indeed, the Merthyr Valley, or the Valley of Martyrdom, is no misnomer, and its sinister appearance does not belie its reputation. It is black, its people are dirty, many have but miserable rags to wear, there is smoke and coal-dust and soot suspended as a pall over the whole scene, while from the centre terrible volcanic eruptions constantly occur that suggest an invasion from the lower regions. It is appalling, but it is also grand, suggesting mighty powers, mastery over the forces of nature, the conquest of the earth and its treasures; but the pity of it is the accompaniment of so much human misery. Why not master the secret of human happiness? Would not this be preferable even to a Bessemer blast furnace?

*A Modern Inferno.*

The story goes that a traveller approaching the Dowlais district of Merthyr asked to be driven back quickly, declaring that he had never before been so near to hell. The word remains. It is no unusual thing for a person to say he has come from hell when he has been to Dowlais. The ironworks for which Dowlais is renowned are situated in a valley, and the hill overlooking them is covered by some of the worst slum dwellings. It was while visiting after dark these hovels where the wealth producers of Dowlais dwell that I was able to contemplate what has so often been compared with the infernal regions. On one side of the works there is a large stretch of open flat ground covered over with rollers that are ever revolving, so that any heavy object placed on them is pushed forward by their rotary action. Formerly these objects required much labour to move; they now glide along as if of their own accord, and the worker who used to manipulate the iron rails is thrown out of employment, his poverty accentuating the housing difficulty. From a fiery region under the Bessemer blast furnace I saw red-hot iron railway lines glide along like great incandescent serpents. Occasionally they pass under an iron structure which squeezes them into a longer and more correct shape, till finally, and as a last ordeal, a steel rotary saw chips off the irregularly shaped tip and tail of the rail. Then the fiery serpent makes a horrible hissing noise and squirts out in all directions, as if it was its life blood, a shower of red-hot iron drops. After that one more glide and the rail has reached its resting-place, where it cools down and loses its bright redness. All this goes on automatically, not a man is to be seen, any amount of work is done, but independently of human labour, while the unemployed clamour at the gates or shiver and starve

in their hovels on the hill close by. Throwing a lurid light over this rapid all-devouring production of wealth and misery the Bessemer blast furnace gives off and illuminates rounded and rolling clouds of pearl-grey smoke and steam. In a little while the colour turns into different shades of yellow, so that the lofty smoke-stack hard by suggests a ghostly, upright, and dignified presiding genius draped in robes of varying tints. Then apparently some sort of cataclysm occurs. A strange darkness comes over the land. The smoke turns to a violet hue, a *lie de vin*, as if the pressed grapes of a vintage had evaporated into clouds that retained its colour. When various chemicals are thrown into the molten metal, so as to purify it, pyrotechnic effects are produced that put exhibitions of fireworks into the shade. And here at least, and close round these Bessemer blast furnaces, men are at work. They can be seen dodging the sparks of molten metal. They grope about, stoop, lift, and run like so many pigmies in the caves of Vulcan. Indeed, the worshippers of this antique divinity never imagined anything so powerful, so huge, grand, and awe-inspiring. But would Vulcan have allowed his assistants to live sordid lives in miserable slums which have acquired such a sensational reputation that the sociological student is told he must not fail to see them? Perhaps if the shareholders of the modern works of Vulcan would also approach the forge and see what the work is like we should not have to wait so long for the much-needed life-saving reforms.

*The "Box and Cox" Problem.*

What these reforms should be is at least in part indicated by Dr. J. Spencer Low's report to the Local Government Board, which was published in the spring of 1906. Some of the more salient points in this report I noted down, and on arriving at Merthyr Tydfil called on the sanitary authorities to inquire whether the criticisms then made still applied. It was gratifying to find that the importance of the housing question is fully recognised. Dr. Alexander Duncan, the medical officer of health, received me most courteously and was very ready to help me in every way. It at once seemed evident that improvements have been effected since the publication of the Government report; but it was likewise equally evident that a great deal still remains to be done. Also in some details there is contradiction in the evidence. For instance, the Blue Book report alludes to the letting of one bed to a couple of tenants, the one being a night worker and the other a day worker. Dr. Duncan doubts whether this was the case when the Government report was written, and does not believe the abuse still exists. On the other hand, when I went about and inquired from different persons who have good opportunities of knowing, they were very positive that the practice still prevailed, and that the farce of *Box and Cox* was being produced any day and in real life at Merthyr Tydfil. What also frequently happens is that when the breadwinner works at night his family occupy his bed during his absence and let their own bed to a lodger. If the bed thus utilised day and night by the family was situated in a large room with big windows, and could have a good airing during the brief intervals between occupancy, the evil might be less obvious. In many cases, on the contrary, it is not even put in what in fairness can be called a room. It is often crowded into a compartment next to the kitchen or living room which is so small that no other furniture but the bed can be introduced. This so-called room may be only 4 feet wide and 8 to 10 feet long. On the hillside, overlooking the ironworks just described, I saw such rooms. They were in little one-storeyed cottages. The door from the street gave on to the one common living room of the house. Here is the fireplace or kitchener where all the cooking is done; here is the square table on which all the meals are served; along one wall is a dresser for the plates, the pots and pans, and most of the possessions of the family When the breadwinner comes home, especially if he is a miner, a tub is rolled up before the fire and a screen placed around it. The man strips for a wash, and his clothes, damp with perspiration and sometimes drenched with rain, are hung up on the screen to dry. Soon the small dwelling is filled with the steam and the human exhalations evaporating from the clothes. By the side of this common room there is the very small compartment where the bed has been placed. If the door to it is closed it will be too cold for the man who has been washing with hot water before a good fire. If the door remains open then the sleeping compartment will be filled with the steam and smells from the kitchen fire and the dirty clothes hanging in front. There may not be a window, a little square opening, barely more than a foot or 18 inches in diameter, giving on to the street and only a few feet above the pavement, will serve instead. And this is not likely to be unobstructed, for mischief-making boys would throw things through and hit the sleeper as he lay stretched under this, the sole aperture giving on to the outer air. Above, under the roof, is one small room, sometimes two. Here the breadwinner and his family might sleep in peace and a better atmosphere, but this they cannot afford, for they must take in lodgers, otherwise it would not be possible to pay the rent.

*Compulsory Cleanliness.*

Another point raised by the Government report was that where back-to-back houses had been abolished by cutting a hole through the partition wall, the letting of the back room as a separate lodging caused the door of communication between the back and the front to be permanently closed, and thus the condition of a back-to-back house was again brought about. The object of such a door is to establish a through draught, but if there are different tenants on each side of the door they will not only keep the door shut, but push whatever heavy furniture they may have against it. The practice still continues, and the effort to do away with back-to-back houses has been frustrated in this manner. Consequently it is now sought to bring such houses under the by-laws as to houses let in lodgings or occupied by more than one family. This, however, is only applied where there are six or more lodgers, and there remain many very insanitary dwellings with a smaller number of inhabitants. Nevertheless, where they can be applied, these by-laws, which are newly enacted, are very stringent and should be effective. They leave little or nothing to the commonsense or to imagination, but minutely define what is meant. Thus overcrowding means less than 400 cubic feet for every person above 10 years of age and 200 cubic feet for every child under that age. Then there must be not more than 12 persons for every closet provided, and the by-law does not merely say that all parts of the premises are to be kept clean; it defines cleanliness as the removal of all slop-water and refuse from within the house at least once a day. The floors are to be swept every day before 11 in the morning and scrubbed every week. The bedroom windows are to be kept open one hour every morning and every afternoon. There is to be a tremendous scouring out of the entire premises with lime-washing of the walls every April and October. The chief point is that this is no mere advice given to housekeepers, but the right of entry and inspection both day and night is carefully secured; and if these rules of cleanliness are not carried out there is a solid penalty of a £5 fine that can be inflicted. It will be found cheaper to sweep and to scrub than to pay £5; and with a certain class of people this is the only way the desired result can be secured. This is excellent so far as it goes; unfortunately, it does not go very far. In the year 1909 there were 11 houses let in lodgings brought under this by-law, but this made a total of only 33 houses in all placed on the register. Some of these houses were put on the register because there were cellar dwellings which, though thrown into communication with the house above, continued to be let to separate tenants. In other cases there were more than six lodgers in the same house paying less than 5*s.* a week for unfurnished, and less than 7*s.* 6*d.* for furnished, lodgings. To see that these 33 houses let in lodgings observed the new by-law 122 inspection visits were paid during the course of the year, yet no contravention was reported. This is very satisfactory so far as it goes, but 33 houses, however clean, is a very small matter in the midst of a population of close upon 80,000 people, this being the estimated population of Merthyr Tydfil.

*(To be continued.)*

A SOMERSET CENTENARIAN.—Miss A. Hutchings, an inmate of Wellington (Somerset) workhouse, celebrated the 100th anniversary of her birthday on Jan. 6th. The father of Miss Hutchings died on the anniversary of his 100th birthday, and her brother died in Australia in his 104th year.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Progress of Sanitation in Liverpool.*

THE chairman of the health committee, reviewing the past year from the public health point of view, remarked that for a number of years the returns had shown that the great sanitary operations carried on were slowly but surely bearing fruit. The rate of mortality of Greater Liverpool in 1895 was 24·8 per 1000 of the population. The figure during the succeeding ten years had gradually declined. In 1905 the lowest rate recorded was reached—namely, 19·2 per 1000. In 1909 a further record of 18·3 per 1000 was reached, and for the year 1910 the lowest record of all had been attained—that of 17·4 per 1000—which was eminently satisfactory. It must not be forgotten that the position of Liverpool as a seaport rendered it particularly open to imported disease, whilst the precarious employment incidental to a seaport meant low average wages, much poverty, and its attendant evils. Whilst the infant mortality during the year had been the lowest on record, yet the most marked saving of life had been at the later age-periods. The mortality from phthisis and other forms of tuberculosis had shrunk to a lower figure than previously recorded, and the same observation applied to zymotic diseases generally, whilst for the first time a whole year was passed without one single death from typhus fever. The great saving of life implied by the figures did not by any means represent the full benefit of the improvement in the public health. It was generally calculated that each death represented at least 10 cases of serious and anxious illness. Therefore the diminution in the deaths implied a proportionate diminution in sickness and the suffering and loss inflicted by it. The number of deaths in 1910 was 3000 fewer than in the year of incorporation of the out-townships (1895), notwithstanding that the population had increased by 115,000, which was almost equal to the entire population of Birkenhead. The death-rate was still very high in the Exchange, Scotland, and Everton divisions, in which a good deal of the property was erected quite 100 years ago, when the policy was to get as many houses as possible on an acre of land. In these districts they had to strive to get as many open spaces as possible. If they could effect an improvement in the death-rate in those localities there was no reason why Liverpool should not become one of the healthiest towns in England, and have the lowest death-rate of any seaport in the country. He ventured to prophesy that the death-rate of the city would be gradually reduced to as low a figure as 12·4 per 1000. The returns for the past week showed a death-rate of 17·5, against 18·4 per 1000 last year.

*Liverpool Select Vestry: Epileptic Colony at Maghull; Enlargement of the Liverpool Workhouse; Death of Mr. Henry J. Hagger.*

At a meeting of the select vestry held on Jan. 10th the question of a contemplated expenditure of about £40,000 at Maghull and of over £10,000 on the Liverpool workhouse came up for discussion. The committee appointed to consider the erection of a colony for epileptics at Maghull reported: "Consequent upon the adoption of their first report the committee have considered the further steps to be taken, and now recommend that the proposed buildings be erected at an inclusive cost of the whole not to exceed £150 per bed, or £45,000. The committee considered this a maximum amount, and trust that the architects will find it possible to reduce the cost to about £130 per bed, or £39,000 for the whole. The committee recommended that the architects be engaged by the select vestry to prepare sketch plans of the suggested buildings, together with an estimate of the probable cost of the same. These would have to be submitted to the Local Government Board for their approval before proceeding further." Mr. T. D. Laurence, in moving the adoption of the report, said that the architects had entered into the spirit of the vestry's requirements—good buildings, but inexpensive. The motion was adopted with some slight opposition. It was also agreed to accept a tender for £10,133 for alterations to the Brownlow Hill workhouse, a loan to be applied for in order not to burden the rates too suddenly. In reference to some remarks from members of the vestry that epilepsy was on the decrease, Mr. T. Horrigan challenged the statements, and said that there was an alarming increase of lunatics, imbeciles, epileptics, and kindred sufferers.—The veteran Mr. Henry James Hagger, vestry clerk of the parish of Liverpool, died on Jan. 10th in his eighty-second year. He was the oldest Poor-law official in England, having given 64 years of faithful and capable service to the Liverpool Select Vestry. Prior to interment a memorial service was held in the workhouse chapel, when the bishop of the diocese delivered an impressive address extolling the deceased's many virtues.

*Hospital Sunday in Liverpool.*

On Sunday, Jan. 8th, collections on behalf of the medical charities were made in the various places of worship in the city and suburbs. The amounts were well up to the average, on the whole giving cause for the greatest satisfaction. Ullet-road Unitarian Church rose to the occasion and resumed its place at the head of the list with £575; Sefton Park Presbyterian Church was a good second with £528. The total amount collected since 1871 (the year of foundation) realised £463,769, which was distributed among the various hospitals, minus £19,000, expenses incurred. The expenses of the committee have not been guaranteed this year as on one or two former occasions.

Jan. 17th.

## BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

*Tuberculosis in Bristol.*

AT the request of the health committee of the Bristol city council, Dr. D. S. Davies, the medical officer of health, has prepared an interesting report on tuberculosis. Much of it consists of general information, and though this will be of great value to the laymen who read it, the principal interest as far as the medical profession is concerned lies in those parts of the report which relate to the incidence of tuberculosis in Bristol. In one table the decline of the phthisis mortality is strikingly illustrated; in 1856 the death-rate from phthisis was 269 per 100,000 living, while in 1909 it was only 103, and the years intervening show that the decline has been a steady one. Dr. Davies estimates that at the end of 1909 there were 2552 persons with phthisis living in Bristol, and that under the voluntary system of notification at present in force almost half the cases which occur escape notification. The risks of overcrowding are most quickly lessened by removal of the sick from among the healthy, though, of course, every means should be used to diminish overcrowding itself. The factors which have been responsible for the decline of tuberculosis in Bristol are general improvement in sanitation and housing, dissemination of knowledge as to the nature of the disease, institutional segregation (as in the workhouse infirmaries), sanatorium treatment at Winsley, notification and the control thus acquired by the health officer over the spread of the disease, increased care with regard to food supplies, and pamphlets of advice. The institutional treatment at present available for patients suffering from phthisis in Bristol is represented by 20 beds maintained by the corporation at the Winsley Sanatorium and the provision made by the Poor-law authorities. The work done by the 20 Winsley beds in the past five years is summed up in the statement that of 866 applications for admission it has been possible to receive 357, of whom about half retained working capacity at the end of the period under consideration. The number of rejections with that of the non-recoveries makes it clear that the provision made by the corporation needs to be supplemented by some such means as a farm colony. Further accommodation is also needed for advanced cases; the guardians have done a good deal in this direction and are considering further steps. In concluding, Dr. Davies recommends the following measures as an expansion of the good work already in progress: reissue of handbills concerning alcoholism, by-laws for the artificial elevation of low or damp sites, provision of public abattoirs, strengthening of supervision over meat and milk supplies, systematic examination annually of milk for tuberculosis, compulsory notification, health visitors and nurses,

reissue of pamphlet advice, more sanatorium beds for early cases, farm colonies for after-treatment, more institutional accommodation for advanced cases, and antituberculosis dispensaries.

*University of Bristol Colston Society: Annual Dinner.*

The twelfth annual dinner of members of the Colston Society was held on Jan. 16th in the large hall of the University, under the presidency of Mr. J. H. Howell. The guests of the evening were Sir Alfred Hopkinson, K.C., LL.D., and Sir Thomas H. Elliott, K.C.B. The treasurer of the society, Mr. J. W. Arrowsmith, was able to announce a collection of £628, which will be devoted, as in preceding years, to the support of the University. The present aim of the society is to raise £1000 a year for the endowment of a Colston chair. The health of the guests was proposed by the Bishop of Bristol. Sir Thomas Elliott, responding first, emphasised the pre-eminent importance of agricultural research such as is contemplated under the auspices of the society, and by means of its contributions to the University. Sir Alfred Hopkinson, who followed, spoke of the great value of the new universities to the nation, and of the close union which ought to exist between citizens and university in a city like Bristol. He urged the citizens to maintain the University in a condition of independence, and not to allow it to become attached to a department of State. Dr. R. Shingleton Smith proposed "The City of Bristol," to which the Lord Mayor and the Sheriff replied. In response to the toast of the University, proposed by Sir W. Howell Davies, Sir Isambard Owen, the Vice-Chancellor, said that he hoped the University would have money enough to build itself an adequate library, to provide itself with a sufficient stock of scientific apparatus, and to support the research carried on within its walls. In conclusion Mr. Howell introduced Sir Isambard Owen as the president-elect.

*Bristol University Settlement.*

The scheme which has for long been under discussion is gradually issuing from the realm of mere discussion and project into that of fact. The settlement which is to be established under the auspices of the University will be, in the first instance, a women's settlement—that is to say, the first set of residents will be women, though men will help in the work. The site chosen is in Barton Hill, a large overcrowded district of working-class streets, consisting of dwellings too recently built to be classed as "slums," but housing a class to whom such work must be beneficial in the highest degree. The settlement, which is to be started in the autumn, will be supported by private contributions and not out of University funds. Workers will be supplied by the University, and the task of organisation will fall upon the University.

*Improvement of Housing in Bristol.*

The Bristol city council has determined to sweep away an area of slum dwellings in St. Philip's which has long been an eyesore to persons arriving in the city by train from the eastern side. It is probable that this will displace a population of 600 or more. Provision of fresh accommodation for these persons is no part of the scheme passed by the council, but it is hoped that the share which Bristol is to receive of the Sutton bequest will facilitate the erection of model dwellings. Under the will of the late Mr. W. R. Sutton £500,000 have been allocated for the acquisition of sites and building of model dwellings in two poor districts of London and eight provincial cities, of which Bristol is to be one.

*Bristol Dispensary.*

At the annual meeting of the Bristol Dispensary it was stated that the number of new patients admitted to treatment in 1910 was 11,774, an increase of 681 over the previous year. The number of midwifery notes issued was 688 and medical assistance was called for in 31 confinements. The balance-sheet shows that the income exceeded the expenditure, though by a smaller margin than in the preceding year. An old house which used to be the dispensary has been disposed of for £750 and several legacies and donations were also received. There have been two changes in the staff—Dr. C. E. K. Herapath and Mr. T. B. Dixon succeeding Dr. W. J. H. Pinniger and Dr. J. F. Blackett, both of whom have resigned.

*Case under the Midwives Act.*

At the Gloucester police-court on Jan. 7th, Susannah Longney of Norton was fined £1 and 6*s.* costs for unlawfully using the title of midwife, she not being certified under the Midwives Act. The woman displayed a board stating that she was a midwife, after the Central Midwives Board had notified her that her name had been removed from the roll of midwives. This is one of the first cases instituted in Gloucestershire under the Act.

*Enlarged Public Health Laboratory for Somerset.*

At a meeting of the Somerset county council, recently held at Taunton, it was decided, on the advice of Dr. W. G. Savage, medical officer of health, to extend the public health laboratory by setting apart two rooms in the county council office at Weston-super-Mare for that purpose. The cost of furnishing the rooms will be £120, and the estimated expenditure will be about £250 per annum, which will include the salary of the analyst of £200. No fees will be charged for public health work to boards of guardians, district councils, borough sanitary authorities, &c., and the medical officer of health will arrange a scale of charges for other authorities and persons.

*Proposed Hospital for Burnham and Highbridge.*

The Burnham and Highbridge (Somerset) district councils are unofficially supporting the proposal for erecting a cottage hospital for the districts of Burnham and Highbridge, and a public meeting will shortly be called to consider the matter. A small hospital is much required, and the medical men of the neighbourhood are strongly in favour of the scheme.

*The Plymouth Memorial to King Edward VII.*

At a public meeting held in Plymouth on Jan. 5th it was decided to establish a "King Edward Fund" as a memorial to the late King. An influential committee was appointed to raise funds for the purpose. It was also determined that the sum of money thus raised "should be devoted to the prevention and cure of consumption in Plymouth in such manner as the committee may decide."

*Medical Relief and Old-age Pensions.*

At the meeting of the St. Thomas's (Exeter) board of guardians, held on Jan. 13th, the chairman suggested that the district medical officers should be informed that, except in cases of emergency, they were not to attend any old-age pensioners without a note from the relieving officers.

*The late Deputy Inspector-General Matthew Coates, M.D. Durh., F.R.C.S. Eng., L.S.A., R.N. (retired).*

Deputy Inspector-General M. Coates died at his residence, Bursledon House, Dawlish, Devon, on Jan. 13th, after a short illness. The deceased officer received his medical education at the Bristol Medical School, and he also studied at Paris. He took the M.R.C.S. qualification in 1859, and the year following the L.S.A. In 1869 he passed the examination for the F.R.C.S., and graduated M.D. of Durham in 1883. Shortly after qualifying he entered the Royal Navy as assistant surgeon. From 1863 to 1865 he was assistant surgeon at the Royal Naval Hospital, Haslar, and from 1867–71 he held a similar appointment at H.M. Dockyard, Devonport. From 1875 to 1878 he was staff-surgeon in charge of the Royal Naval Hospital, Esquimalt, Vancouver Island. In 1882 he retired from the service, with the rank of deputy inspector-general. He shortly afterwards came to Dawlish, where he soon became very popular. He was much interested in ambulance work, was a lecturer and examiner for the St. John Ambulance Association, and an Honorary Associate of the Order of St. John of Jerusalem.

*A Cottage Hospital for St. Austell (Cornwall).*

At a meeting held at St. Austell last week it was decided to erect a cottage hospital which will contain 10 beds. The hospital will be only used for accident cases. Up to the present nearly £2000 has been raised, and the committee requires £600 more. It is hoped that the foundation-stone of the building will be laid early in April and that the institution will be finished in six months.

*The late Dr. George Morton Wilson.*

A memorial has been erected at Pendyffryn, by several old friends and patients, to the memory of the late Dr. G. Morton Wilson. The memorial, which was unveiled last week, is a handsome sundial. It contains four medallions, one of which is a portrait of Dr. Wilson; the other three have symbolic figures of a lion, ox, and pelican. Dr. Wilson's motto "Hasten slowly" is also inscribed. Dr. Wilson was a Cornishman, his father, the late Dr. George Wilson, having

practised for many years at Launceston. Dr. Wilson, who established the Nordrach-in-Wales at Pendyffryn, was one of the first to recognise the importance of the sanatorium treatment for pulmonary tuberculosis. He died at Pendyffryn on Jan. 6th, 1910, in his forty-fourth year.

Jan. 17th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Irish Emigration Statistics.*

THE report of the Registrar-General of the number of emigrants, natives of Ireland, who left Ireland during the month of December, 1910, shows that the total number was 423, as compared with 633 in the same month in 1909, a decrease of 210. The total number of emigrants for the year was 32,457, as compared with 28,676, an increase of 3781. Of this total 4258 were from Leinster, 8330 from Munster, 12,271 from Ulster, and 7598 from Connaught. 24,905 of these went to the United States, 4416 to Canada, 165 to South Africa, 613 to Australia, 179 to New Zealand, and 83 to other countries; 1656 went to England and Wales, 440 to Scotland, and of the 22,639 steerage passengers to the United States 7263 had their passages paid for in America. Two years ago, in the period of financial depression in America, the number of emigrants from Ireland suddenly dropped by about 40 per cent. Each year since, however, shows a gradual return to the previous average.

*Dublin Joint Sanatorium.*

It is hoped that the Consumptive Sanatorium of the city and county of Dublin may be ready for occupation at an early date. Nearly all the sanitary authorities of the county and city have united for its establishment, and a convenient and suitable site, on the western slope of the Dublin mountains some nine miles from the city, has been chosen. Building operations have been going on for some time. In the selection of a medical superintendent the joint committee adopted a wise plan, which one would gladly see adopted by other local authorities in the choice of medical officers. A committee of experts, consisting of the Presidents of the two Royal Colleges and the professors of medicine in the two universities situated in Dublin, was invited to consider the applications of all the candidates and to advise as to the best appointment. The expert committee selected out of a large number of applicants the four most suitable candidates. The joint committee elected the gentleman, Dr. Blake, whose name appeared first on the list.

*Deadlock in Skibbereen Union.*

For the past 12 months there has been a deadlock regarding the appointment of a medical officer for the Skibbereen union hospital. When Dr. W. Jennings died the board of guardians advertised the vacancy, and when the day of election came, elected two medical officers. The Local Government Board, while admitting its willingness to sanction the appointment of two medical officers, actually gave approval only to the appointment of Dr. T. J. O'Meara, declaring that Dr. P. J. Burke had been elected without due notice. The guardians brought the matter before the King's Bench, where it was decided that the election was invalid. All this took place several months ago, but as yet no election has taken place. On one occasion when notice had been given of intention to elect, the chairman refused to receive nominations, and summarily adjourned the board. Last week, under threat of a mandamus from the Local Government Board, the guardians proceeded to election, but the board being equally divided the election again fell through.

*Tyrone and Fermanagh Asylum.*

At the monthly meeting of the committee of management of this asylum, held on Jan. 12th, a resolution was adopted in favour of urging the Government to make provision for an annual grant of a fixed sum per head of not less than 4*s.* per week, the total contribution to any one district to increase or decrease as the numbers of lunatics increase or decrease, and deprecating the present system of deducting repayment of loans from the annual expenditure in calculating the annual cost per head for the purpose of the 4*s.* grant as being most unfair to the local ratepayers and in contravention of the Act of 1898.

*Monaghan and Cavan Asylum.*

At a meeting of the joint board of management of this asylum, held on Jan. 12th, it was reported that at present there were in the institution 918 patients, of whom 416 were chargeable to Monaghan and 502 to County Cavan. As to their estimates for next year there was an increase of £2000 on that of the previous year, which meant an increase of 1*d.* in the £.

*Glenties Workhouse.*

Mr. J. Coffey, Local Government Board inspector, has reported that, while no part of Glenties Workhouse Co. Donegal) could perhaps be quite classed as dirty, yet, with the exception of perhaps two wards, no part of it could be classed as clean. The report is to be considered by a committee of the guardians.

Jan. 17th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Edinburgh Royal Infirmary.*

THE annual report of the managers of the Edinburgh Royal Infirmary has been submitted to the General Court of Contributors. The total number of patients treated as in-patients during the year was 12,342, as against 12,388 in the preceding year. The average daily number of patients was 842, as against 845; the average daily number of children was 85, as against 80; the largest number of patients on any one date was 881, as against 878; and the average period of residence was 25·1 days, this figure being the same as in 1909. Of the cases admitted, 5691 came from Edinburgh, 469 from Leith, and 5363 from the country. In the out-patient department 38,930 patients were treated, most of whom attended several times. The total ordinary income was £36,129 3*s.* 11*d.*, an increase of £301 8*s.* 11*d.* on the income of the previous year. The ordinary expenditure amounted to £54,217 17*s.* 2*d.*, an increase of £428 12*s.* 3*d.* The entire ordinary expenditure during the year (including the out-patient departments) per occupied bed was £64 7*s.* 10*d.*, an increase of 14*s.* 8½*d.* on 1909. There was a decrease in maintenance per occupied bed of 2*s.* 0½*d.*, but an increase in medical expenditure of 7*s.* 1*d.* The legacies and donations of £100 and upwards to the general funds amounted to £24,123 14*s.* 6*d.* There were 745 applications for admission as compared with 784 in 1909. The average number of nurses and probationers during the year was 260, The question of the remuneration of the sisters had been the subject of inquiry during the year. It was resolved that instead of increasing the pay, the retiring pension should be raised and that in future no payment on account of premiums should be required from the sisters. Hitherto the retiring allowance has been an annuity of £25, each sister having to pay a one-fourth share of the premium. The principal new works carried out during the year included the enlarging of the nurses' dining-room with the addition of a large pantry and scullery, and the providing of additional accommodation for nurses and female servants in Archibald-place. The Clinical Medicine Laboratory, the gift of an anonymous donor, was completed and formally opened by Sir Clifford Allbutt on Oct. 13th, 1910. The managers record their regret at the loss sustained by the infirmary by the death of Dr. Claud Muirhead, whose services to it had extended over 40 years, since he became an assistant physician in 1869. They also record with regret the death of Dr. John Smith, who had been consulting dental surgeon since 1888, having served for 25 years as dental surgeon to the infirmary.

*Montrose Asylum Management.*

A meeting of the managers of Montrose Asylum and Infirmary Board was held on Jan. 10th, when a communication was read from the Secretary of State for Scotland with reference to the proposed changes in the constitution and management of the asylum. Lord Pentland stated that he had had under further consideration representations made to him and to his predecessors by the Forfar District Lunacy Board and the parish councils of the counties of Forfar and Kincardine, in support of a proposal to effect

changes in the constitution and management of Montrose Royal Asylum, and also the proposals made for the new charter put forward by the managers of the Asylum Board. His lordship was aware that the new charter, as outlined in these proposals, was not viewed by the district lunacy board and parish councils as sufficiently meeting the necessities of the case, but he recognised the desire which these proposals evidenced on the part of the asylum managers to arrive at a settlement of the question at issue. It appeared to him that these could be discussed at a conference of the managers and representatives of the district lunacy board and representatives of the parish councils, and progress made towards this end. It was agreed to hold a meeting in about a fortnight to consider the matter. The question also came before a meeting of the Forfar District Lunacy Board at Forfar on Jan. 9th, to whom the Secretary for Scotland had also replied in similar terms. The board agreed to the proposal contained in the letter and resolved to appoint three of its number to attend any conference which might be held regarding the matter.

*Aberdeen Parish Council: Medical Officer Question.*

The Aberdeen parish council has at last settled the vexed question of the medical officership of Oldmill Poorhouse. In last week's issue I reported that the poorhouse committee recommended to the council the appointment of a visiting medical officer at a salary of £150 per annum. The council met on Jan. 10th, and after a long discussion rejected this recommendation, and decided by 17 votes to 10 to appoint a male resident medical officer at a salary of £200 per annum with board, at the same time retaining the services of the present lady resident medical officer at a salary of £90 per annum.

*Hospital Sunday in Aberdeen.*

Hospital Sunday fell on New Year's Day, and as the weather was bad the collections in a good many churches were poor. In other cases, however, it is gratifying to note an increased liberality, while in one or two cases the collection was postponed. The total for 44 churches and meeting places was £746 2*s.* 6*d.*, as against £924 12*s.* 8*d.* for 51 churches last year. The United Free Church comes first with £365 6*s.* 11*d.* for 16 congregations; the Church of Scotland next with £268 14*s.* 5*d.* for 12 congregations; five Congregational churches contribute £47 17*s.* 4*d*; three Baptist churches, £8 2*s.* 1*d.*; six Episcopal churches, £15 10*s.* 9*d.*; two Roman Catholic churches, £33 3*s.*; and six other churches and services, £7 8*s.*

Jan. 17th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Penetrating Wound of the Liver by a Bullet entering the Chest.*

AT a meeting of the Surgical Society held on Jan. 11th, M. Potherat showed a youth, aged 15 years, who had received a revolver bullet in his right thoracic region. He did not at first present any symptoms giving cause for alarm, but after some hours there were evident signs of internal hæmorrhage. Careful examination of the thorax proved that the heart and lungs were uninjured; there was, however, marked retraction of the abdominal wall which made it probable that the abdominal contents had suffered. Laparotomy disclosed an extensive effusion of blood under the liver proceeding from a perforating wound of that organ; the point of entrance, which was small and situated on the upper surface of the liver, was not bleeding, but the point of exit, which was very large and situated on the inferior surface of the right lobe, was bleeding profusely. M. Potherat, after removal of the effused blood, closed the aperture in the lower surface of the liver with five sutures of stout catgut, and when the hæmorrhage was arrested he proceeded to search for the bullet. Without causing any further important injury it had traversed the root of the mesentery, and, passing under the peritoneum, had buried itself in the posterior wall of the abdomen on a level with the insertion of the right psoas muscle. Radiography afterwards showed it in this position, but M. Potherat did not think that its extraction was necessary. The patient had recovered completely.

*The Question of Depopulation.*

At a meeting of the Société de l'Internat des Hôpitaux de Paris held on Dec. 22nd, 1910, M. Créquy said that one factor in the question of depopulation was the circumstance that midwives, induced by the commissions offered by the registry offices, advised mothers to put their children out to nurse on the pretext that the mothers' health did not permit them to suckle their children. The mortality of bottle-fed infants was, however, five or six times as great as that of breast-fed infants. Statistics also showed that cases of abortion induced by midwives were very numerous. The remedy for this state of things was to give midwives the status of public officials—a system which would have the effect of distributing them uniformly over the whole of France. M. Bouchacourt, continuing the discussion, said that midwives who suffered from the overcrowding of their occupation in large towns were tempted to make money by questionable practices.

*Fire at the Hôpital Bichat.*

About 2 A.M. on Jan. 14th a fire broke out in the salle Louis of the Hôpital Bichat, a room which is on the ground floor of the building and is used as a store for the clothing of deceased patients. There was immediately a serious panic among the patients in the wards. Those who were able to do so made their escape, hardly giving themselves time to put on their clothes, while those who could not leave their beds uttered piercing cries. The firemen at the Carpeaux barracks on receiving a call hastened to the scene and dealt energetically with the fire, which threatened to spread to a pavilion filled with patients. After half an hour's work all danger was at an end and calm was restored. The origin of the outbreak has not yet been traced.

*Ehrlich's New Remedy "No. 606" in Diseases of the Eye.*

At a meeting of the Academy of Medicine held on Jan. 10th M. de Lapersonne and M. André Léri discussed the effects observed when patients suffering from diseases of the eye were treated with Ehrlich's antisyphilitic remedy, "arsenobenzol." They commenced with the statement that this arsenical compound had a much less injurious action on the visual organs than those which had hitherto been employed in syphilis. Atoxyl, for instance, has caused serious injury to the eye, even to the extent of producing blindness, but arsenobenzol, being more rapidly eliminated and not being given at such short intervals as atoxyl, was much less harmful to the eye. In the hands of M. de Lapersonne and M. Léri arsenobenzol had given good results in cases of iritis and even of optic neuritis without occasioning any concomitant ill-effects. In common with other observers they had found that a single injection of arsenobenzol did not bring about radical and permanent recovery from syphilis; relapses were, in fact, not infrequent, and Ehrlich himself had at last become an advocate of repeated injections. The remedy was unquestionably very powerful, very rapid in its action, and produced effects which could be more easily observed from day to day in cutaneous lesions than in the case of the eye. The new treatment might be combined with the use of mercurial remedies, which had not lost any of their therapeutic importance.

*A Conviction for Illegal Practice of Medicine.*

An unqualified practitioner, well known as the "Zouave" Jacob, who is at present 85 years of age, was last year acquitted by the Tenth Chamber of the Correctional Tribunal on a charge of the illegal practice of medicine. At the instance of the prosecution the case came before the Appeal Court on Jan. 14th. In his defence Jacob said that he was an intermediary between healing spirits and patients, and that he received a healing fluid which he therefore imparted to sick persons for the purpose of curing them. Notwithstanding this plea the court convicted him of illegal practice of medicine, ordering him to pay a fine of 100 francs and 200 francs damages to the Syndicate of Medical Men of the Seine. In pronouncing judgment the court gave an interesting definition of the word *traitement*, declaring that this word, which must not be used by a person unprovided with a medical diploma, includes whatever is done or advised for the recovery of a sick person or the relief of his symptoms.

Jan. 17th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Intravenous Injection of Grape Sugar.*

Professor Kausch of Schöneberg, writing to the *Deutsche Medizinische Wochenschrift*, mentions that he has administered a solution of grape sugar by subcutaneous or intravenous injection to patients who could not be fed in the natural way. He has found that subcutaneous injections of strengths varying from 2 to 5 per cent. or intravenous injections of strengths varying from 5 to 7 per cent. of grape sugar were well tolerated by patients in a quantity of 1000 cubic centimetres per diem. Sugar was excreted by the urine after repeated injections, but only to the extent of 2 or 3 per cent. of the quantity administered. No undesirable complications ensued —neither pain, nor thrombosis, nor interference with the heart or other organs. Intravenous injection was preferable to the subcutaneous method, because by the former a larger quantity of fluid and that in a state of greater concentration could be administered. The sugar must be dissolved in a solution of sodium chloride of 0·9 per cent. strength, then filtered, and finally boiled; for intravenous injections from four to eight drops of a solution of adrenalin of 1 per 1000 strength must be added. With regard to the effect of the grape sugar on nutrition, Professor Kausch stated that the worse the state of nutrition of a patient was, the larger was the quantity of sugar that could be tolerated. He mentioned the case of a woman suffering from puerperal septicæmia in whom a temperature of over 40° C. was associated with vomiting and diarrhœa. She was given intravenous injection of grape sugar once or twice a day until 2000 cubic centimetres of a 9 per cent. solution were injected daily, only from 0·2 to 0·3 gramme of sugar was excreted by the urine, and in the result the patient recovered. It was very likely that the remainder of the sugar which did not make its appearance in the urine was assimilated by the organism; in this way food having a calorific value of 500 might be introduced into the organism each day. Cane sugar administered in the same way was also tolerated, but the proportion of it excreted in the urine was larger than in the case of grape sugar. Professor Kausch said that up to the present time it had not been known that the human organism was capable of assimilating such large quantities of sugar, and that this circumstance was not yet taken advantage of for the purpose of feeding patients. Although he had employed the method for surgical cases only, he was of opinion that it would be valuable also in the treatment of various ailments in which feeding in the natural way was difficult, especially in the hyperemesis of hysteria and pregnancy, in diseases of the gastro-intestinal canal, and in cholera. In the latter cases the injection of a solution of grape sugar was more efficacious than the injection of a solution of chloride of sodium.

*Statistics of the Medical Profession.*

According to the Medical Directory, edited by Professor Schwalbe, the number of medical men in Germany is 32,449, showing an increase of 480 over last year. There are now 5·01 medical men for each 10,000 of the population, which means a small decrease of the proportional number since the two previous years, in which it was 5·02 and 5·06 respectively. An increase of the medical profession may be expected in the near future, as the number of medical students has risen rapidly from 6032 in 1905 to 11,125 in 1910. It must, however, be remembered that this number includes the foreign medical students, of whom only a very small number pass the State examination and settle in Germany. The number of qualifications granted, which was 553 in the academical year 1906–07, rose to 829 in 1907–08, and to 942 in 1908–09. With respect to the distribution of the profession in the different parts of the Empire, it is remarkable that the recent statistics show a general increase throughout nearly the whole Empire (Mecklenburg, Saxony, and Alsace-Lorraine excepted); in the previous year the increase concerned only the western and southern parts, whilst in the eastern parts a small decrease was recorded. The large cities continue to be preferred by the profession. Of the 480 medical men who settled in practice last year, 329 reside in the large towns of over 100,0000 inhabitants; and of the 32,449 medical men practising in Germany, 13,261 reside in those large towns. For each 10,000 inhabitants of the large towns there were 9·85 medical men (in Berlin alone 12·32); for each 10,000 of the smaller towns and the country the corresponding proportion was 3·74. The number for the large towns has slightly decreased, while that for the smaller towns and the country has been the same as in the previous year. Of the large towns, Wiesbaden as a watering-place and health resort has far the greatest number of medical men—namely, 22·6 for each 10,000 inhabitants; next in order comes Munich with 16·6 per 10,000 inhabitants; whilst the town of Gelsenkirchen, in the Westphalian mining district, has the lowest number—namely, 4·0 for each 10,000 of its population of 180,000 inhabitants. The number of medical women, which was 55 in 1908 and 69 in 1909, has risen greatly, being now 102, of whom 32 are in Berlin. With regard to female medical students, 512 were registered, as compared with 379 in the previous year, foreigners being, of course, included. The number of specialists, which in 1906 was 6258—i.e., 20·2 per cent. of the profession—has risen in 1910 to 7272—i.e., to 22·4 per cent. of the profession. Of the specialists, those for diseases of women are the most numerous, then come the ophthalmologists, and in the third place specialists for diseases of the ear, the nose, and the larynx. Of the large towns, Dresden has relatively the greatest number of specialists, the proportion being not less than 44·2 per cent. of the profession. The figures have been analysed by the well-known statistician, Dr. Prinzing.

*Treatment of Malignant Growths.*

At a recent meeting of the Verein für Innere Medicin Dr. Reicher showed cases in which malignant growths had been treated by injections of adrenalin. He said that he had first administered this substance to rats and mice suffering from sarcoma and carcinoma, the result being that the animals recovered. In the human subject he had used adrenalin only in advanced cases, but a decrease of the growth and of the enlarged lymphatic glands was, however, obtained. In a boy, 12 years of age, suffering from a chondrosarcoma of the skull, the growth decreased to one-third of its original size after daily injections continued for 25 days; the boy also in that time gained 5 pounds in weight. The residual growth was then subjected to currents of high frequency, and finally to Roentgen rays, with the result that it disappeared two months ago. He had obtained a progressive metamorphosis in five cases of malignant growth, and he showed to the society a patient in whom a carcinoma of the skull, having, he said, the size of a gourd, had disappeared one and a half years ago.

Jan. 16th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

*Law and Medicine.*

THE "Third Italy" has just opened, in the presence of Royalty and with every accessory of solemn inauguration, her Palace of Justice on the right bank of the Tiber, and the event coincides with the resuscitation of controversy as to the delimitation of frontier between the sister professions, Law and Medicine. These are continually overlapping, with more or less friction, particularly in criminal trials, throughout Italy, and, truth to tell, when they come into actual conflict the palm is apt to rest with the medical combatant, who, if he does not gain absolute victory, invariably receives a cession of territory which puts him at fresh advantage in the next encounter. The medico-psychological witness is treated with a respect, not to say deference, rarely accorded him in transalpine tribunals, where the presiding judge has been known to warn the jury that if the combined colleges of physicians in Christendom told them that a man might, physically, be so impelled to crime that, with full knowledge of the penalty he was incurring, he could not control the impulse to commit it, they were to attach no weight whatever to the deposition. Such intervention, in such a sense, would now be impossible in Italy, where medico-psychology, progressing on inductive lines and appealing to an exhaustive *catena* of cases drawn from clinical experience, has relegated to the criminal asylum offenders who, in a

previous generation, or countries ruled by tradition rather than by science, would have been dealt with as "responsible" and punished accordingly.

*The Effects of Solitary Confinement.*

That life-long incarceration, as a substitute for the death penalty, is fraught with evils *per se*—evils which make hanging or beheading seem humane in comparison—is a conclusion to which Italians, with more or less reluctance, are coming round. The frequency with which the inmate of the solitary cell, to which he is condemned till the close of his days, relapses into decrepitude physically and into idiocy mentally, when he does not "solve the problem of existence" by suicide, is manifestly impressing the public, and, coincidently, the forensic or judicial mind—impressing it, moreover, with a force which may one day lead to a resumption of the methods which it has prided itself on abandoning. True, the brutal, degrading scenes accompanying the revival of public executions in France—the guillotining of Favier at Lille the other day being an instance in point—tend to give pause to the movement in favour of the death penalty. But, on the other hand, the system adopted in the British Isles, reported and commented on throughout Italy on the occasion of Crippen's execution, is cited in abatement of the arguments based on French example, insomuch that if Italy returns to her practice of 40 years ago it will be on the lines of British precedent. As I write a deplorable case of suicide in prison "*per mancanza di compagnia* (for want of company)" is reported from Nice, where the criminal, on being denied human intercourse with his fellow prisoners, hanged himself (like Luccheni and Bresci and so many other assassins) by suspension from the grating of his cell. Why, Italians are asking, refrain from anticipating by the short, sharp British practice the method clumsily adopted after days or weeks or even years of suffering by the criminal himself?

*The Countess Tarnowska.*

In this context, the prison life of the protagonist in the trial which at Venice in the spring of last year fascinated the attention of all Christendom has an interest of its own. The Countess Tarnowska is now causing the gravest solicitude to the prison authorities by a succession of convulsive fits, followed by insomnia of a persistent type and visitations of panic, culminating in persecution mania. In dread of being poisoned she refuses to eat, even to smoke, resists being put to bed, and bivouacs on the floor. Pending the appeal to the Court of Cassation she used to learn Italian, to practise on the piano and the harp, and to exercise her vocal gifts in singing. Since that appeal has been rejected she has developed the symptoms above referred to, and now, by the intervention of the Government, she will be removed to the "carcere giudiziaria" (judicial prison) at Genoa, there to undergo special treatment at the hands of Dr. Luigi Maria Bossi, professor of gynæcology, with special experience in cases of hysteria. From first to last the countess has been a more interesting subject to medicine than even to the law, and the official report of her response to the new treatment awaiting her will be read with peculiar interest, not in Italy only, but wherever neuroses, fostered by stimulants, narcotics, and the unbridled sway of the passions, have run a continuous course.

Jan. 14th.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*The Census of the United States.*

THE census of the United States, the results of which have been recently published, presents many points of interest. The total continental population of the country is now 91,402,151, an increase of 15,977,691 over the population of 1900. The increase for the past decade is greater than for that of the previous ten-year period, due, it is stated, to greater net additions to the population by immigration. The natural increase has been probably somewhat less from 1900 to 1910 than it was from 1890 to 1900. An instructive feature of the report is the far more rapid growth of the cities than of the rural districts. In the north the proportion of the total city-dwelling population was 40·6 per cent. in 1910, 34·2 per cent. in 1900, and 28·6 per cent. in 1890. In the south the corresponding percentages were 12·8 per cent. in 1910, 10·1 per cent. in 1900, and 9·5 per cent. in 1890. In the west the proportion living in cities of 25,000 inhabitants or more was 31·5 per cent. in 1910, as compared with 25·2 in 1900 and 22·6 per cent. in 1890. In short, 44·5 per cent. of the increase of the population of the United States from 1900 to 1910 has occurred in cities having 25,000 inhabitants or more. In the rural districts there has been, in many counties throughout the country, an absolute decrease of population. The director of the census returns is of opinion that this decrease is due not entirely to movement to the cities, but in some districts to movement to newer agricultural regions. The States that show the greatest increase of population, an increase of from 20 to 30 per cent., during the past ten years are for the most part the great manufacturing States of the north-eastern section of the country, including Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, and West Virginia. The only other States that have increased between 20 and 30 per cent. are Arkansas and Texas. As in Europe, so in America, the trend of population is to the towns.

*A National Organisation for the Prevention of Blindness.*

At a conference held in New York on Dec. 17th a national society for the prevention of blindness and conservation of vision was organised. Dr. Park Lewis, of the American Medical Association's committee on the prevention of blindness, Mr. Edward M. Van Cleve, President of the Ohio Commission for the Blind, and Mr. James P. Monroe, President of a similar commission in Massachusetts, were responsible for summoning the meeting. The committee on organisation recommended that the society include all persons and public bodies desirous of coöperating in "prevention of infantile blindness, prevention of blindness from industrial and other accidents and from disease, and conservation of vision through improved hygiene during school life and in industrial occupations," and that it invite the coöperation of prevention societies now in existence, of State and national medical societies, educational bodies, labour organisations, commercial bodies, women's clubs, and the like. On the motion of Dr. Studdiford of the New York Board of Health it was resolved that measures be taken to secure State legislation for the training, registration, licensing, supervision, and control of midwives, for the reason that half the births in cities are attended by such women, many of whom are ignorant, untrained, and incompetent, and that unnecessary blindness, mental and physical degeneracy, and suffering or death of mothers, are among the results of obstetrical malpractice. Mr. H. F. J. Porter, a consulting engineer who, according to accepted report, was one of the first to examine swimming-baths for their infectious possibilities, said that many infected eyes were due to the infrequency of the change of water in public swimming-baths and in pools, in gymnasiums, and factories. Another speaker called attention to the menace of the cheap spectacles which are now so largely sold. Increased scrutiny of trachoma among immigrants and examination of lighting facilities in public schools were also considered. The project to create a national organisation in the United States for the prevention of blindness is said to have received the approval of many of the leading ophthalmologists of the country.

*Prevention of Infant Mortality.*

A convention on infant mortality was held in Baltimore recently by the American Association for the Study and Prevention of Infant Mortality. The death-rate of infants under one year of age is very large in the United States. At the meeting in Baltimore the conditions tending to affect adversely the health and lives of very young children were exhaustively discussed. The question of milk in particular was debated in all its bearings, as well as the necessity for instructing mothers of the working class in the proper methods of rearing infants.

*Health of Panama and District.*

According to the recent report of the Panama Department of Sanitation, the total number of deaths among employees in the Canal Zone during October last was 42, 23 being from disease and 19 from injuries, making an annual death-rate per 1000 of 10·19. This rate is somewhat higher than that

for October, 1909. The annual average death-rate during October of this year in Panama, Colon, and the Canal Zone, and including the entire population, was 23·6. This, again, is an increase on the rate of the previous year. It is explained by the fact that there were a larger number of deaths from intestinal disorders among infants in the city of Panama.

*Investigation of Typhoid Fever at the Naval Academy at Annapolis.*

The Secretary of State has appointed a board of inspection to investigate the recent epidemic of typhoid fever at the Naval Academy at Annapolis.

*Gaynor Hospital Fund.*

A sum of $15,180 (£3036), collected as a thanksgiving offering for Mayor Gaynor's recovery from the injury inflicted by his would-be assassin, has been presented to the sisters in charge of St. Mary's Hospital, Hoboken, the institution in which the mayor was treated. £1000 will be devoted to the endowment of a bed to be known as the "Gaynor bed," and the remainder will be handed over to the hospital authorities.

Jan. 12th.

## NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

*Plague.*

THERE was a slight increase in plague mortality during the week ending Nov. 19th, the figures being 7932 seizures and 6106 deaths, against 7305 and 5359, the respective figures of the preceding week. The provincial figures were: United Provinces, 1298 deaths; Bombay, 857; the Punjab, 840; the Central Provinces, 780; Rajputana, 602; Madras, 387; Mysore, 435; Hyderabad, 361; Bengal, 358; Central India, 135; Burma, 51; and Kashmir, 2.

*The Punjab Jails.*

In reviewing the Jail Administration Report for last year the Lieutenant-Governor fully agrees with the Inspector-General that the question of combating tuberculous disease is one of pressing necessity. To some extent the ravages of tubercle in jails are merely a reflection of the hold that it is getting on the population outside the prison walls. Still, there is some ground for thinking that there is something in jail life that predisposes to the disease. Sir Louis Dane desires to be informed whether the Inspector-General would advise a detailed inquiry by a pathological expert as to the etiology of tuberculous disease in the Punjab jails. As regards the treatment of youthful offenders, his honour suggests that the more frequent use of the provisions of Section 562, Criminal Procedure Code, or the infliction of petty fines would do much to remedy the evil. As regards whipping as a punishment for jail offences, his honour does not consider it possible to lay down a hard and fast rule. Whipping, he thinks, may be more necessary in certain states of discipline and in cases of certain individuals than in others.

*Phthisis in India.*

The following letter from the Government of India has been circulated to all local governments and administrations: "The attention of the Government of India has been drawn to the prevalence of tuberculosis diseases in India and to the great increase of phthisis in recent years in larger towns and cities, and it has been represented to them as most desirable that well-equipped sanatoria should be established with as little delay as possible in different parts of India for the treatment of tuberculosis patients. The Government of India are advised that the treatment of phthisis in the early stages of the disease in sanatoria in which patients can receive the most minute daily attention of specially experienced physicians, affords the only hope of cure, and they believe that many valuable lives will be saved if suitable institutions for treatment of tuberculosis patients are established in this country. The Government of India desire to commend this question to your earnest consideration, and will be glad to be informed in due course what action you propose to take or consider practicable. They think that funds for the purpose of establishing sanatoria will probably be found by private beneficence, and it is suggested that the coöperation of the charitable public may be invited."

*Tuberculous Disease in Ceylon.*

The commission appointed to inquire into the conditions of tuberculous disease in Ceylon has recommended the introduction of the system of compulsory notification of cases, the segregation of sick from the healthy, the establishment of a dispensary for out-door treatment in large centres where the disease is prevalent, the establishment of sanatoriums and of hospitals for advanced cases, and the education of the people in the prevention of phthisis. The commission is also of opinion that an anti-tuberculosis society should be established in Ceylon with branches in every important centre, and facilities should be provided for the free examination of sputum and other material for the bacillus of tubercle.

*The Madras Memorial to King Edward VII.*

The Government of Madras has issued its orders on the scheme proposed by the committee appointed in connexion with the subscriptions raised under the King Edward VII. Memorial Fund. The scheme of the committee was for a special consumptive hospital about ten miles out of Madras, but this has been rejected on financial grounds. The committee also suggested the provision of three sanatoriums, but here, too, the Government has deemed it advisable to limit the scheme. One sanatorium is proposed to be established at Coimbatore. A contribution will be given to the Missionary Sanatorium at Madanapalla. The sanatorium to be established at Coimbatore will be of 50 beds, and not 200 as originally proposed. The Government considers the entire funds should be devoted to this. The committee also suggested the provision of one phthisis ward at each district headquarters hospital. The Government proposes that a phthisis ward should be provided at a few selected hospitals at the cost of local funds aided by a grant from the Government. The Bangalore Civil and Military Station Committee has introduced very stringent by-laws for the licensing of all dogs. These are the most stringent rules yet in force in India against rabies.

*The Asiatic Society.*

The medical section of the Asiatic Society had recently a discussion on Hepatitis and Hepatic Abscess. Lieutenant-Colonel H. W. Pilgrim, I.M.S., read a most interesting paper. General support was given to the ipecacuanha treatment reintroduced by Major L. Rogers, I.M.S. A long but interesting paper on Epidemic Dropsy was read by Dr. H. N. Ghose at the Calcutta Medical Club.

*The Bombay Medical and Physical Society.*

At the annual meeting of the Bombay Medical and Physical Society the new committee was elected, with Dr. N. F. Surveyor as secretary. Dr. S. A. Powell showed a heart, the left ventricle of which was ruptured by a blow of the fist. With the exception of a small patch of atheroma in the transverse portion of the aorta, the body was otherwise healthy. Dr. L. G. Gate showed a curious case of syphilitic affection of the humerus.

*New General Hospital, Lahore.*

The chief topic of medical interest is the new General Hospital to be built in connexion with the very liberal subscriptions gathered to commemorate the love for the late King Edward VII. There are two sites for the same at present being considered. One of them, which is the one most likely to benefit the locality of the present hospital, will open up an existing insanitary site. The Punjab will thus come to the fore in the matter of a first-class up-to-date hospital like other presidencies. The new health officer is busy with the local difficulties *re* sanitation. A proposal has been put forward for the creation of a Punjab medical society, and seeing that there are a large number of practitioners and plenty of material, the outlook for this is promising. Besides, it will bring together the various members of the fraternity.

*United Provinces Exhibition.*

The all-absorbing topic at Allahabad is the United Provinces Exhibition. Probably no exhibition in India has been worked out on so large a scale and in so business-like a manner. The hygiene section is full of interest.

*Sanitary Matters at Simla.*

Sanitary matters are the only medical features to note at present. The special journal named *Paludism*, edited by Major

S. P. James, I.M.S., has now been issued in connexion with the recommendations of the Simla Conference on Malaria. The special class at Amritsar for malaria investigations has just closed its second course. The Pasteur Institute at Kasauli continues to do good work, while too much praise cannot be given to the keen work carried out by Lieutenant-Colonel David Semple, R.A.M.C. Colonel R. H. Firth, R.A.M.C., Army Headquarters, has issued a special paper to all his officers on the examination of drinking water.

*General.*

The chief general medical subject of interest over the greater part of India is, at this season, the plague. Its seasonal rise has already been most pronounced in some presidencies. With an early winter, and possibly a severe one, it is more than possible the plague will be felt with some severity in certain localities. Anything about plague is of interest to India. We now have the views of two young plague advisers, and this has in one province been connected with a special committee chiefly of non-medical gentlemen. General rat trapping has been condemned. The details of the report have already been made public. No doubt each of us has his own ideas, but it seems strange that with a disease which is affecting all presidencies the general lines to fight it should not be the same throughout the country. If anything is done in any one province it should surely be subjected to a special committee of experts before it is permitted to be adopted. What is wanted is a *uniform* fight against the disease throughout the country rather than changes introduced by the varying views of men who, from the exigencies of the service, happen to be in charge temporarily. I may be wrong, but it seems to me that if rat destruction is to be condemned as a measure of importance in the Punjab it is also time it was abolished in other provinces. But, in the interest of the public, before such measures are abolished it would be as well to have the verdict of a body of men who should be permanently established until plague ceases, and whose verdict should be final.

Dec. 28th, 1910.

## NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

*The Soya Bean.*

WITHIN the past three years the outstanding merits of this pulse have come prominently to the front, and its export from Manchuria, where most of it is raised, has lately assumed very large dimensions. For the past 2000 years it has been used in North China for making bean curd, a thick nutritious jelly eaten daily by all classes of the people. A widely used vegetable oil is also expressed from it, the refuse left over serving for cattle food and manure for sugar plantations. Recent analyses have proved its nutrient superiority to all cereals. This bean, a product of the *Soja hispida*, a species belonging to the papilionaceæ, is indigenous to China, but it can be grown in Europe; there are reports of its successful culture in Russia, Germany, and France. It is easy to rear, does not demand special skill on the part of the farmer, and does not require specially favourable soil or climate. It is a cheap product, each bean when sown multiplying itself, on an average, 450 times. On account of its great nutrient value it is well worth medical attention, more particularly in diabetic cases, because of its comparatively small proportion of starch. *Composition.*—Dividing its constituents into four main groups: 1. The albumin forms about 40 per cent. of the bean. 2. Fats average 20 per cent. 3. Carbohydrates: The beans contain sugar to the amount of 8 to 11 per cent. It is a disaccharose, $C_2H_{22}O_{11}$, and closely resembles cane sugar. Starch (all soluble) never exceeds 10 per cent., which is much lower than wheat and other grains, where the proportion is about 70 per cent. 4. The mineral matter is high, varying from 4 to 6 per cent. Phosphorus, sulphur, sodium, potassium, calcium, and magnesium are present. The most abundant salt is sodium phosphate. Advocates of the fleshless diet have to contend with the large amount of indigestible cellulose which occurs in vegetarianism. This cellulose is present in 4 to 11 per cent. of the soya bean, but is very easily eliminated from the other products. Bean curd is entirely free from it. China is not a milk-drinking country, notwithstanding the high prevalence of tuberculosis which I have noted in previous letters. To replace the lack of milk the dried bean is ground up and mixed with water. The resultant emulsion makes a most excellent vegetable milk which resembles animal milk in that it coagulates. Wheat and other beans emulsified in the same way, if heated gently and acidified, will not coagulate as cow and bean milk do. Comparing this bean with wheat, it will be seen that it is richer than wheat in everything but starch. It contains nearly three times as much albumin, 15 times as much fat, and between two or three times as much mineral matter. For making biscuits, soup powder, infant and other foods, the soya bean will be widely used in future when its dietetic value becomes better known. It also forms a good basis for making candles and soap. Soya vinegar is the main constituent of several well-known piquant sauces. I append some comparative figures, the work of a French-trained Chinese chemist, Mr. Li Yu Ying, from which it can be noted how favourably this bean compares with other foods in common use. *Minerals.*—Soya bean, 4·4 per cent.; rice, 1·2 per cent.; eggs and meats, 1 to 1·5 per cent. *Starch.*—Rice, 74·4 per cent.; wheat, 66·70 per cent.; flat beans, 57·6 per cent.; soya bean, 11·06 per cent. *Amount of various foodstuffs equivalent to 100 grammes of gelatin.*—Soya bean, 264; bean curd, 475; flat bean, 812; unboiled rice, 1176; bread, 1205; boiled rice, 3616; vegetables, 7142; potatoes, 7790. I understand this bean was introduced into England over a hundred years ago, but no attempt was made to cultivate it. English firms are now entering the field and taking a large part in the exportation of the bean from Manchuria. This increasing demand is shown in the customs returns. Thus, whereas the export last year was 200,000 tons, it is almost 500,000 tons this year.

*Plague in Manchuria.*

A virulent epidemic has broken out at Tsitsihar and the neighbourhood of Harbin on the Russo-Manchurian frontier. The daily returns of deaths have been from 500 to 600, and the majority of cases are reported as being pneumonic plague. This outbreak is an instance of the persistence of B. pestis under extremes of temperature. It is probably no exaggeration to say that North-Western Manchuria is one of the coldest parts of the world. 49° below zero (81° of frost F.) have been recorded in winter, and, at the present time of the year, when a north wind blows, life is almost unbearable in the open for more than short periods of time. It is too cold for snow unless heavy falls occur at the very beginning of winter. There is perpetual sunshine and the cold is very dry. Under such climatic conditions the inhabitants and animals keep indoors as much as possible and infection is easily spread, especially when the plague is of the pneumonic variety. The Russian authorities, at the request of the Siberian Railway Administration, have been active in sending troops and doctors, and have established a picket line of Cossacks on the Manchurian frontier to guard against the further ingress of Chinese coolies, who, in order to evade the rigorous medical inspection at Pogranichnaya railway station, leave the train on the Chinese side of the frontier and cross the boundary on foot. A cordon has also been drawn round the plague-infected area and only Europeans and a few known Chinese are allowed to cross. These vigorous measures have aroused some resentment among the Chinese, who in some instances, no doubt due to difference of language, customs, and habits, were roughly handled. The Chinese prefect at Harbin received official orders from Peking to organise plague preventive measures and to establish isolation hospitals and medical inspection bureaux. To help him in this work the Government has sent Dr. Mesny, a French medical man with previous plague experience, and Mr. Gnoh Lean Tuck, M.D. Camb. Dr. Tuck had a fine medical career in England, where he held research scholarships in pathology and bacteriology, afterwards studying at the Hygienic Institute, Halle, and the Pasteur Institute, Paris. These two medical men have been given a free hand by the Imperial Government and are to coöperate with the Russian authorities to bring every preventive measure possible into effect. This is noteworthy as being the first occasion in which the Government has shown itself alive to the dangers of allowing the unchecked spread of an epidemic outbreak.

The Russian Government has put its plague measures in the hands of Dr. Zabolotnui, a noted bacteriologist who made a reputation for himself in plague investigation in Odessa some time ago. He has been given a staff of 15 doctors to assist him. The latest news to hand is that the epidemic is showing a diminution in Manchuria, where the mortality is less than during the previous week, but there are still a good many cases and deaths in Harbin, sufficient to cause anxiety. I am unable to give official rates, as no figures have as yet been published, though it is said the deaths have hitherto numbered some hundreds per week.

Peking, Dec. 24th, 1910.

# Medical News.

## EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.

At the Second Professional Examination in Anatomy and Physiology, held on Jan. 5th, 6th, 9th, and 10th, for which 81 candidates presented themselves, of whom 51 were approved and 30 were rejected, the following gentlemen were successful:—

Ahmed Abdelal and Francis Dighton Annesley, Guy's Hospital; Edgar Bernard Argles, St. Mary's Hospital; George Aspinall-Stivala, St. Bartholomew's Hospital; Henry Cecil Billings, London Hospital; Harold James Bower, B.A. Cantab., Cambridge University; Charles Frank Burton, London Hospital; John Stanley Cocks, Guy's Hospital; Louis David Cohen, London Hospital; George Malcolm Coope, Manchester University; Denis Clarence Cooray, L.M.S. Ceylon, Ceylon Medical College; Eric David Despard Davies, Cambridge University; Robert Ellis, Birmingham University; Edward Dance Fountain, St. Mary's Hospital; Vraspillai Gabriel, L.M.S. Ceylon, Ceylon Medical College; Alexander Percival Green, London Hospital; Harold Stanley Groves, Guy's Hospital; Howell Gwynne-Jones, London Hospital; Mohammad Zaky Hanafy and Arthur Martin Henry, L.D.S. Eng., Guy's Hospital; John Higgins, St. Mary's Hospital; Thomas Henry Jackson, Charing Cross Hospital; John Wallace Kemp, Guy's Hospital; Harold Dunmore Lane and David Lewis, London Hospital; Joseph Lloyd, Westminster Hospital and King's College; Donald Henry McDonald and Douglas Duncan Malpas, Middlesex Hospital; Percy Uvedale Mawer, St. Bartholomew's Hospital; James Denis Mercer, Manchester University; Harold Parker, Leeds University; Mahamarrakkelegey Gregory Perera, Ceylon Medical College and University College; Michael Gladstone Pettigrew, Sheffield University; Alfred Cleveland Pickett, B.A. Cantab., Cambridge University and St. Thomas's Hospital; William Reginald Pryn, Guy's Hospital; Herbert Jack Rawson, St. Thomas's Hospital; Philip Hugh Rawson, London Hospital; Edward Ebenezer Samaraweera, Ceylon Medical College and King's College; Charles Pearse Crodacott Sargent, St. Bartholomew's Hospital; Abdel Khalek Selim, Guy's Hospital; Jagannath Vishnu Shirgaokar, L.M.S. Bombay, Bombay University and Middlesex Hospital; Charles Rees Smith and Frederick Lionel Spalding, Guy's Hospital; William Allan Stewart, London Hospital; Evelyn Alexander Sutton, Charing Cross Hospital; Thomas Harold Thomas, Arthur Roland Turtle, and James Anderson Watson, London Hospital; John Delafosse Wilkinson and Sydney Arthur Wilkinson, St. Thomas's Hospital; and Leslie Douglas Wright, Guy's Hospital.

At the quarterly examination in Practical Pharmacy, held on Jan. 12th, the following candidates were approved:—

Ralph Cay Briscoe, Oxford University and St. George's Hospital; Ronald Edgar Russell Burn, St. Bartholomew's Hospital; Maurice Burnett, King's College and St. George's Hospital; Percy Herbert Burton, London Hospital; Allan Stanley Coalbank, St. Bartholomew's Hospital; Joseph Coplans, St. George's Hospital; John Hamilton Cumming, Cambridge University and St. Bartholomew's Hospital; William Dale, St. George's Hospital; George Arthur Ewart, B.A. Cantab., Cambridge University and St. George's Hospital; Samuel Amery Faulkner, Manchester University; Bernard Grellier, L.D.S. Eng., Charing Cross Hospital; Harold Kinder Griffith, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Cecil Hallinan and Walter Parker Harrison, L.D.S. Eng., Charing Cross Hospital; George Ashby Hooton, St. Bartholomew's Hospital; Edward Eastaugh Johnson, private study; Frank Winter Lawson, Guy's Hospital; Vernon Edmund Lloyd and Reginald Hutchinson Lucas, Guy's Hospital; George Oliver Maw, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harry Millett, Guy's Hospital; George Nelson, Charing Cross Hospital; Lily Fanny Pain (Miss), Royal Free Hospital; John Lansdowne Perceval, Harry Platts, and Courtenay Henry Gerard Pochin, Guy's Hospital; Frank Aubrey Powell, B.A. Cantab., Cambridge University and London Hospital; Peter Warwick Ransom, Cambridge University and St. Bartholomew's Hospital; Edward Gordon Reeve, Guy's Hospital; Thomas Conrad Reeves, London Hospital; George Andrew Russell, Birmingham University; David Scott, London Hospital; Alan Ker Soutar, B.A. Cantab., Cambridge University and St. Mary's Hospital; Robert Cyril Wilmer Staley, Guy's Hospital; Elliott John Storer, St. Bartholomew's Hospital; Oscar Ramsay Unger, University College Hospital; Bernard Thomas Verver and Walter Palmer Vicary, Guy's Hospital; Ernest White, L.D.S. Eng., Sheffield University and Guy's Hospital; and Arthur Tudor Williams, London Hospital.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

At the Preliminary Science Examination for the Licence in Dental Surgery of the Royal College of Surgeons of England the following gentlemen were approved in the subjects specified below:—

*Chemistry and Physics.*—Ronald William Anderson-Jardine, Middlesex Hospital; Reginald Willis Ballard, Guy's Hospital; Henry Claude Carter, Middlesex Hospital; James Douglas Crawford, Liverpool University; George Lambert Cutts, Herbert James Edwards, B.A. Wales, and Arthur Gerald Forrest, Guy's Hospital; Reginald John Inder, Northern Polytechnic Institute; Howell James, Plymouth Technical School; Sydney Emil Johnson, Tonbridge School; Oswald Nelson Mash, Guy's Hospital; Glenn Fowler Musson, Leeds Institute of Science and Art; Reginald Harry Rix, Norwich Technical Institute; Stanley Stevens, City of London College; and Eric Edgar Wookey, Bristol University.

*Chemistry.*—Kevern Batten, Bristol University; Walter Alexander Crane, Liverpool University; Arthur Thomas Dally, Charing Cross Hospital; Joseph James Luckett Hollington, Brighton Technical College; Eustace Fernando Llarena, Guy's Hospital; Wallis John Milton, Bristol University; Frank Edwin Rudd, Norwich Technical Institute; and Harold Vincent Wolfenden, Halifax Technical School.

*Physics.*—Leslie Alabone, Brighton Municipal Technical College; Ernest Archibald Dawson, West Ham Technical Institute; Reginald Fox, Liverpool Technical School; and Eric Carson Nicholls, Guy's Hospital.

At a quarterly meeting held on Jan. 12th the following diplomas were conferred upon the undermentioned gentlemen, who have now complied with the respective by-laws:—

*Diploma of Fellow.*—Walter Burford Johnson, M.B., B.S. Lond., M.R.C.S., L.R.C.P., St. Thomas's Hospital.

*M.R.C.S.*—David Scurlock, St. Mary's Hospital.

*L.D.S.*—Gerald John Harborow and Linthall Harry Leatherby, Charing Cross and Royal Dental Hospitals.

## FOREIGN UNIVERSITY INTELLIGENCE.

*Amsterdam:* Dr. C. T. Van Valkenburg has been recognised as *privat-docent* of the Anatomy of the Nervous System.—*Bologna:* Dr. Alessandro Codivilla has been appointed Extraordinary Professor of Orthopædic Surgery.—*Brussels:* A School of Tropical Medicine has been established. The Belgian Ophthalmological Society has elected the following as Honorary Foreign Members: Dr. Angelucci of Naples, Dr. Axenfeld of Freiburg, Dr. Hess of Würzburg, Mr. W. H. H. Jessop of London, Dr. Landolt of Paris, and Dr. Straub of Amsterdam.—*Erlangen:* Dr. L. Hauck, *privat-docent* of dermatology, Dr. E. Kreuter, *privat-docent* of surgery, and Dr. Weichardt, *privat-docent* of experimental therapeutics, have been granted the title of Extraordinary Professor.—*Freiburg:* Dr. Bacmeister has been recognised as *privat-docent* of Medicine.—*Gratz:* Dr. Erich Baumgarten and Dr. Eduard Urbantschitsch have been recognised as *privat-docenten* of Odontology.—*Halle:* Dr. Bencke of Marburg has been appointed Professor of Pathological Anatomy in succession to Dr. Eberth, who is retiring.—*Jena:* Dr. Kionka, director of the Pharmacological Institute, has been granted the title of Honorary Professor.—*Kieff:* Dr. W. Dobromysloff of Tomsk has been appointed Professor of Operative Medicine and Topographic Anatomy.—*Marburg:* Dr. P. Esch of Greifswald has been recognised as *privat-docent* of Gynæcology.—*Munich:* Dr. R. Hecker and Dr. J. Trumpp, *privat-docenten* of Pædiatry, Dr. Baisch, *privat-docent* of Gynæcology, Dr. Seeman, *privat-docent* of Physiology, and Dr. Notthaft, *privat-docent* of Urology, have been granted the title of Extraordinary Professor.—*New York (Polyclinic Medical School and Hospital):* Dr. David Edward Hoag has been appointed Lecturer on Neurology and Psychiatry.—*Palermo:* Dr. A. Dionisi of Modena has been appointed to the chair of Pathological Anatomy.—*Pavia:* Dr. Carlo Bezzola and Dr. Luigi Preti have been recognised as *privat-docenten* of Internal Pathology.—*Philadelphia (Medico-Chirurgical College):* Dr. Horatio C. Wood, jun., has been appointed to the chair of Materia Medica and Therapeutics in succession to the late Dr. Shoemaker.—*Philadelphia (University of Pennsylvania):* Dr. Allan Smith has been appointed to the chair of Tropical Diseases.—*Pisa:* Dr. Arbace Pieri has been recognised as *privat-docent* of Internal Pathology, and Dr. Filippo Neri as *privat docent* of Hygiene and State Medicine.—*Prague (German University):* Dr. J. Gad, Professor of Physiology, is retiring at the close of the present winter session.—*Rome:* Dr. Guido Senni has been recognised as *privat-docent* of Experimental Pathology, and Dr. Vincenzo Nicoletti as *privat-docent* of Orthopædic Surgery.—*Rostock:* Dr. Gerhard Hosemann has been

recognised as *privat-docent* of Surgery.—*San Francisco (University of California):* Dr. H. B. Graham has been appointed Adjunct Professor of Hygiene.—*Saratoff:* Dr. B. Slofftsoff of the Military Medical Academy, St. Petersburg, has been appointed to the chair of Pharmacology and Toxicology.—*Sienna:* Dr. Cesare Biondi of Cagliari has been appointed to the chair of Forensic Medicine in succession to Dr. Mirto.—*Strasburg:* Dr. Paul Uhlenhuth, Director of the Government Bacteriological Department, has been appointed to the Chair of Hygiene in succession to the late Professor J. Forster. Dr. Gildemeister, *privat-docent* of Physiology, Dr. Schlesinger, *privat-docent* of Children's Diseases, and Dr. Fuchs, *privat-docent* of Anatomy, have been granted the title of Professor. Dr. Vogt, Oberarzt of the Children's Clinic, has been recognised as *privat-docent* of Pædiatry.—*Tübingen:* Dr. Gottlieb Olpp has been recognised as *privat-docent* of Tropical Diseases.—*Vienna:* The Austrian Cancer Campaign Society has elected as Honorary Foreign Members Dr. Bashford of London, Dr. Borrel of Paris, Dr. Czerny of Heidelberg, Dr. Ehrlich of Frankfort, Dr. Jensen of Copenhagen, Dr. Orth of Berlin, and Dr. Winter of Königsberg.—*Würzburg:* Dr. H. Kelly has been recognised as *privat-docent* of Pathological Anatomy.—*Zürich:* Dr. Schuhmacher has been recognised as *privat-docent* of Surgery.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the above society was held on Jan. 11th, at 11, Chandos-street, Cavendish-square, Dr. G. F. Blandford, the President, being in the chair. Eight directors were present. Five medical men were elected members of the society. Since the last court one of the vice-presidents, Dr. James E. Pollock, had died. Dr. Pollock was one of the oldest members of the society, being elected a member in 1866. The sum of £1281 was voted for the payment of the half-yearly grants to the widows and orphans who are on the books of the society. A legacy of £200, free of duty, was received from the executors of the late Miss Emma H. Peregrine. The invested funds now amount to £100,900. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius from Charing Cross; the subscription is 2 guineas per annum. Special terms are made for life membership, the sum payable being dependent on the age of the applicant. The next election will be on April 12th, and application forms for membership must reach the secretary on or before March 22nd. Any further information may be obtained from the Secretary at the offices of the Society, 11, Chandos-street, Cavendish-square, London, W.

AN APPEAL FOR NEW LABORATORIES FOR UNIVERSITY COLLEGE.—In 1909 an appeal was made by a committee of University College, with the approval of the Senate of the University of London, for the sum of £70,000 for the erection of new chemical laboratories adjacent to the College. £25,000 of this amount were for the purchase of a selected site, the College having an option on it until Dec. 31st, 1910. Owing to the disturbing influences of the death of King Edward and a double General Election last year, the work of the appeal committee, of which Prince Arthur of Connaught is president, was seriously interfered with, and for this reason the option on the site has been extended to Jan. 31st. Of the £25,000 required only £14,000 have so far been secured, so that £11,000 remain to be collected. The present laboratories are entirely inadequate, and the importance of chemical research, both to the general advance of science and to commercial prosperity, is too obvious to need urging. Donations or promises may be sent to Prince Arthur of Connaught at University College, London, and must be prompt to be of any avail.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A new society has been formed for the study of diseases of the skin, the membership of which is open to any duly qualified medical practitioners. The inaugural meeting of the New London Dermatological Society was held on Jan. 16th at the offices of the British Medical Association, under the chairmanship of Dr. W. Knowsley Sibley. Dr. Phineas S. Abraham was unanimously elected the first president; Dr. William Griffith, honorary treasurer; and Dr. Norman Meachen (11, Devonshire-street, W.) and Dr. David Walsh (27, Welbeck-street, W.), honorary secretaries. In thanking those present for the honour conferred upon him, Dr. Abraham said that the new society would be supplemental or auxiliary to the Dermatological Section of the Royal Society of Medicine, its founders having no desire to be antagonistic to that body.

THE Queen has sent her annual subscription of £105 to King Edward's Hospital Fund for London.

NEWTON ABBOT (DEVON) WORKHOUSE INFIRMARY.—At the last meeting of the Newton Abbot board of guardians a provisional tender of £3074 was accepted for the erection of additional buildings for the workhouse infirmary.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. George Frederick Barker, formerly professor of physiological chemistry and toxicology in Yale.—Dr. John C. Munro, formerly lecturer in surgery in Harvard University.—Dr. Eustache, formerly professor of clinical midwifery in the University of Lille.—Dr. A. Smirnoff, professor of histology and embryology in the University of Tomsk.—Dr. Maximo Cienfuegos, professor of ophthalmology in the University of Santiago, Chile.—Dr. José Ortis y Herrara, formerly rector of the University of Cordova, and subsequently Governor of the Province. He died in Buenos Aires, aged 65 years.

AN INTERESTING CASE UNDER THE WORKMEN'S COMPENSATION ACT.—At Liskeard (Cornwall) on Jan. 11th, before his honour Judge Granger, a local farmer applied for the termination of an award under the above Act in respect to one of his labourers. The man had been injured through a horse of the farmer bolting and injuring his arm. The labourer had been awarded about 11*s.* weekly since April, but it was contended that the continuance of the disablement was entirely due to the respondent having neglected to work and use his arm, as ordered by the medical attendants. The respondent, however, contended that it was the injury which rendered him unable to follow his work. Medical evidence stated that the man had been urged to work his arm, and warned that if this was neglected he would never have the proper use of the limb; but the man refused to make any movements with the arm, although he gave no reason for his conduct. His honour said that "it was not everybody who could persist in giving themselves pain in order to arrive at what might not even be a definite end, it was more than could be expected," and he eventually dismissed the application.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—A council meeting of this association was held at the Holborn Restaurant on Jan. 13th, Dr. F. G. Crookshank being in the chair. The Order of the Local Government Board, 1910, relative to medical officers of health and sanitary inspectors, was discussed and the following resolution was unanimously carried:—

We welcome the measure of security of tenure to the Medical Officers of Health by the Order and recognise with satisfaction that the Board does not differentiate therein with respect to conditions of tenure between whole and part time medical officers of health, but regret the Board has not so far seen its way to assimilate the securing of tenure of medical officers of health to that enjoyed by Poor-law medical officers, and to make provision for superannuation in suitable cases.

The council also discussed the memorandum accompanying the Order, and it was resolved:—

That this council notes with extreme regret that the Local Government Board specially express an opinion that in the case of medical officers of health engaging in private practice, their private interests are apt to conflict with their public duties. For even if this opinion be correct it is obvious that any argument deducible therefrom applies with even greater force to medical officers of health who are entirely dependent upon their official salaries.

SCHOOL INSPECTION IN NEWPORT.—When the medical inspection of school children was first undertaken by the Newport education committee the medical officer of health, Dr. J. Howard-Jones, was appointed school medical officer, and an assistant medical officer was also appointed. The education committee has now decided that the medical department of the schools shall be separated from the health department of the town, and that Dr. Howard Jones shall no longer be school medical officer, but that his services shall still be available as expert adviser to the committee. Dr. H. R. Burpitt, who is now assistant medical officer, is to be appointed school medical

officer, and his duties are to include attendance at the school clinic which it is proposed to establish in Newport. The local medical practitioners consider that the work of the clinic should be in the hands of the Newport medical men and should not be undertaken by a whole-time official. In spite, however, of their protests, the course indicated has been adopted.

THE PLYMOUTH MEDICAL CHARITIES.—The late Mr. Henry Elliott Tracey-Elliott of Plymouth has bequeathed £3000 to the South Devon and East Cornwall Hospital, and £2000 each to the Plymouth Public Dispensary and the Royal Plymouth Eye Infirmary.

THE BRISTOL MEDICAL CHARITIES.—During 1910 the employees of Messrs. W. D. and H. O. Wills of Bristol voluntarily contributed £737 for the Bristol medical charities, and the workpeople of Messrs. J. and S. Fry collected £631 for the same cause.

## BOOKS, ETC., RECEIVED.

ALLENSON, R. H., LIMITED, Racquet-court, 114, Fleet-street, London, E.C.

Formation of Character. By Rev. J. B. S. Watson, M.A., Chaplain of H.M. Prison, Brixton, London. With Preface by Rev. G. P. Merrick, M.A., M.B., Formerly Chaplain-Inspector of H.M. Prisons. And a Foreword on Industry. By Andrew Whitlie, Esq., of the Commercial Bank of Scotland, London. Second Edition. Price, 1*s.* 6*d.* net.; by post, 1*s.* 9*d.*

BAILLIÈRE, TINDALL, AND COX, London.

Manual of Medicine. By Thomas Kirkpatrick Monro, M.A., M.D. Third Edition. University Series. Price 15*s.* net.

FISCHER, GUSTAV, Jena.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Zwölfte Lieferung. Band IV. Physiologie der Reizaufnahme, Reizleitung, und Reizbeantwortung. Erste Hälfte. Price M.5.

LEWIS, H. K., London.

"Salvarsan" or "606" (Dioxy-Diamino-Arsenobenzol), Its Chemistry, Pharmacy, and Therapeutics. By W. Harrison Martindale. Ph.D. Marburg, F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H., H.M.'s Coroner for North-East London. Price 5*s.* net.

SCHULZE, OTTO, AND COMPANY, 20, South Frederick-street, Edinburgh. (STECHERT, G. E., AND COMPANY, New York.)

Text-book of Nervous Diseases for Physicians and Students. By Professor H. Oppenheim of Berlin. Fifth enlarged and improved edition. Authorised Translation by Alexander Bruce, M.D., F.R.C.P.E., LL.D., Physician to the Royal Infirmary, Edinburgh. Two volumes. Price not stated.

STATE COMPANY, THE, Publishers, Columbia, S.C.

Pellagra. By Dr. A. Marie, Physician to the Asylums Department of the Seine, Editor-in Chief, Archives de Neurologie. With Introductory Notes by Prof. Lombroso. Authorised translation from the French by C. H. Lavinder, M.D., Passed Assistant Surgeon, U.S. Public Health and Marine Hospital Service, and J. W. Babcock, M.D., Physician and Superintendent, State Hospital for the Insane, Columbia, S.C. With Additions, Illustrations, Bibliography, and Appendices. Price not stated.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALDOUS, GEORGE FREDERICK, F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Honorary Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

APPLEYARD, JAMES, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Shaftesbury (Dorset) Board of Guardians.

BALY, A. LIONEL, M.R.C.S., L.R.C.P. Lond., has been appointed Chief Medical Officer of the Infirmary and Workhouses to the Lambeth Board of Guardians.

BOON, J. E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Clinical Assistant to the Samaritan Free Hospital.

BOVEY, THOMAS WILLIAM WIDGER, L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator for the Bampton District by the Tiverton (Devon) Board of Guardians.

CARGILL, L. VERNON, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior Ophthalmic Surgeon to King's College Hospital.

CHALMERS, W., M.B., Ch.B. Edin., has been appointed House Surgeon at the Swansea Hospital.

CLEGG, SYDNEY J., M.B., Ch.B. Manch., D.P.H., has been appointed Resident Medical Assistant at the City Hospital for Infectious Diseases, Newcastle-upon-Tyne.

CORBETT, DUDLEY, L.R.C.P. Lond., M.R.C.S., has been appointed Clinical Assistant to the Samaritan Free Hospital.

FARRELL, L. J., L.R.C.S. Irel., L.A.H. Dub., has been appointed Visiting Medical Officer to the Dublin South Union Board of Guardians.

FENWICK, CHARLES, L.R.C.P. & S. Edin., has been appointed Medical Officer for the Cheriton Bishop District of the Crediton (Devon) Union.

GORDON, JAMES EDWARD, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Physician to the Salisbury Infirmary.

HAYCROFT, CHARLES HENRY, M.R.C.S., L.S.A. Lond., has been appointed a District Medical Officer by the Crediton (Devon) Board of Guardians.

INMAN, E., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ammanford District of the county of Carmarthen.

MACDONALD, PHILIP NORMAN MACKAY, M.D., Ch.B Edin., has been appointed District Medical Officer by the Tiverton (Devon) Board of Guardians.

MUNDEN, W. P. HENLEY, M.B., B.S. Lond., has been appointed Clinical Assistant to the Samaritan Free Hospital.

PAGE, C. H. W., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the North Walsham District of the county of Norfolk.

PATTISON, C. R. M., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Ballyward Dispensary District, Banbridge Union.

POWNE, LESLIE, M.R.C.S., L.S.A., has been appointed Medical Officer for the Newton St. Cyres and Shobrook Districts by the Crediton (Devon) Board of Guardians.

SANKEY, WILLIAM OCTAVIUS, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Newton Abbot (Devon) Board of Guardians.

TATTERSALL, NORMAN, M.B., B.S. Lond., M.B., Ch.B. Vict., has been appointed House Surgeon at the Cancer Hospital.

THOMPSON, GEORGE W., M.B. Edin., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon to the Hospital for Epilepsy and Paralysis and other Diseases of the Nervous System.

TUCKER, JOSEPH, M.R.C.S., L.S.A., has been appointed Medical Officer for the Chawleigh District of the Crediton (Devon) Union.

WILLIAMS, C. V., has been appointed House Physician at the Swansea Hospital.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ABERDEEN POORHOUSE.—Senior Resident. Salary £200 per annum, with board.

BRECKNOCK COUNTY AND BOROUGH INFIRMARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with apartments, board, &c.

BRIGHTON, SUSSEX (COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, residence, and washing.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon. Salary £100 each per annum. Also One Obstetric and Ophthalmic House Surgeon, and One Throat, Nose, and Ear House Surgeon. Salary £75 each per annum. Also Casualty Officer for six months. Salary £50 per annum. Apartments, board, and laundry are provided.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.

CAPETOWN, SOUTH AFRICAN COLLEGE, South Africa.—Two Professors of Human Anatomy and Physiology. Salary at rate of £500 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

DELAMERE FOREST, CHESHIRE, CROSSLEY SANATORIUM.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

ENNISKILLEN, FERMANAGH COUNTY HOSPITAL.—House Surgeon. Salary £72 per annum.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator. Salary £110 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Honorary Dental Surgeon.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Fourth Anæsthetist. Salary £15 15*s.* per annum.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging.

LINCOLN COUNTY HOSPITAL.—Senior House Surgeon, unmarried. Salary £125 per annum, with board, lodging, and washing.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Pleasant.—Assistant Medical Officer and Pathologist. Salary £200 per annum.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL. — Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and washing.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £175 per annum, with quarters, attendance, &c.

MANCHESTER CORPORATION, WITHINGTON COMMITTEE.—Medical Officer of Health. Salary £250 per annum.

MANCHESTER, CRUMPSALL WORKHOUSE.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with apartments, washing, &c.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—Anæsthetist. Salary £15 per annum.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with apartments, board, washing, and attendance.

NEWCASTLE, Co. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Junior Resident Medical Officer. Salary £75 per annum, with residence and board.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

PONTYPRIDD AND DISTRICT COTTAGE HOSPITAL.—Honorary Consulting Surgeon and Honorary Consulting Gynæcologist.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Pathologist. Salary £50 per annum. Also Honorary Anæsthetist once a week. Salary £20 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Clinical Assistants for six months. Also House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Medical Officer in Charge of Department for X Rays and Electro-therapy. Salary at rate of £60 per annum.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Honorary Medical Registrar.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board and lodging.

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THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Brownhills, in the county of Stafford; at Glenavy, in the county of Antrim; and at Dunfermline, in the county of Fife.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy as Medical Referee under the Workmen's Compensation Act 1906, for County Court Circuit No. 50, more particularly to Brighton, Lewes, Arundel, Chichester, Worthing, and Haywards Heath County Courts.

# Births, Marriages, and Deaths.

## BIRTHS.

BURGES.—On Jan. 14th, at Muswell Hill, N., the wife of Richard Burges, M.R.C.S., L.R.C.P., of a daughter.

FINIGAN.—On Jan. 15th, at Woodville-road, Ealing, the wife of D. O'C. Finigan, M.D., M.R.C.P., of a daughter.

ROBINSON.—On Jan. 6th, at West Lodge, Leominster, the wife of Charles Allen Robinson, M.B., B.C. Cantab., of a daughter.

## MARRIAGES.

ATKIN—MUNNS.—On Jan. 7th, at Holy Trinity, St. Marylebone, W., Alfred H. Atkin, L.R.C.P., &c., of Clipstone-street, W., to Elizabeth A. Munns, of Upper Clapton, N.E.

MCSHEEHY—PATERSON.—On Jan. 11th, at the Church of the Sacred Heart, Wimbledon, Oswald William McSheehy, of the Royal Army Medical Corps, to Caroline Winifred Mary, eldest daughter of Colonel Henry Paterson, late of the 23rd Sikh Pioneers, and Mrs. Paterson of Longforgan, Wimbledon.

PRINGLE—BENEY.—On Jan. 14th, at the Congregational Church, Beckenham, John Pringle, M.D., of Whalley Range, Manchester, to Dorothy, elder daughter of Mr. and Mrs. W. A. Beney, of Johannisbad, Beckenham.

## DEATHS.

COATES.—On Jan. 13th, at Bursledon House, Dawlish, Matthew Coates, M.D., F.R.C.S., Deputy Inspector-General of His Majesty's Hospitals and Fleets.

FULLER.—On Jan. 13th, at Wilbury-avenue, Hove, Thomas Fuller, M.D., aged 83 years.

PARSONS-SMITH.—On Jan. 16th, at Park-Hyrst, Croydon, Samuel Parsons-Smith, L.R.C.S.I., L.R.C.P.I., J.P., aged 68 years.

RIDLEY.—On Jan. 13th, at 6, Ellison-place, Newcastle-on-Tyne, Walter Ridley, M.B., M.S., F.R.C.S., aged 49 years.

WOOD.—On Jan. 10th, at Southbourne, Hants, Edwin Stanley Wood, L.R.C.P., L.M. Irel., M.R.C.S. Eng.

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*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## ENCEINTE.

*To the Editor of* THE LANCET.

SIR,—The note in THE LANCET of Dec. 31st, 1910, upon the etymology of the word "*enceinte*" does not say anything as to the date of its introduction into the vocabulary of the polite Briton as a substitute for the older and more medical "pregnant" or for the more purely English "with child." I infer, however, from its non-occurrence in a list of similar euphemisms before me that it was not in use in the opening years of the last century. The list referred to is appended to a letter addressed to the editor of an unnamed newspaper, which I find in a scrap-book once the property of an ancestress in the west country, who, if internal evidence suggests that she did not herself compile the "album," wrote her name in it in 1832. The letter is signed James English, and dated "Cornwall, Aug. 5, 1813," the name used being, no doubt, like the letter, an example of the author's humour. He writes:—

> "Having had occasion of visiting London this spring, a place I have not been in these forty years before, I took up my quarters, by her particular desire, at a female cousin's of mine who lives in the neighbourhood of Grosvenor-square—a lady who, though not many years younger than myself, moves and delights in the top of the fashion, as much as if she was only twenty-one. Having rested myself the first night after so long a journey, I began, as natural, to inquire after our friends and relations in town; when, happening to ask particularly after a young niece of mine, who had been married about nine months before, I was told, with an air of seeming indifference, 'that she was in *confinement*.' Alarmed at this news, I exclaimed, 'Good G—! what has she done to incur this disgrace?' 'Disgrace!' replied my cousin. 'What disgrace can there be in an *accouchement?*' Here I was as much at a puzzle as ever, till, upon a further explanation, I was told that my niece was *lying-in*, and that *confinement*, or *accouchement*, was the fashionable word to convey the meaning of my '*horribly country phraseology.*' 'Ho! Ho! cousin,' says I, 'if this be the case, it will be but civil in you to give me a list of those fashionable phrases, that I may not disgrace you or myself, whilst I stay in the metropolis.' After some pause and a look of silent contempt, which showed a superiority of understanding, she complied, and as the catalogue may be beneficial to other travellers as well as myself I enclose you a copy for your useful and entertaining Paper, and remain, Sir, your most obedient humble servant, JAMES ENGLISH."

The cousin in the neighbourhood of Grosvenor-square must have been a lively old lady to judge from a list from which two or three items may be cited as being perhaps of some historical interest to readers of THE LANCET:—

> Apothecaries = Doctors, chemists, or medical men.
> Man-midwife = Accoucheur.
> Pregnancy = In a family way; or to speak poetically in that way in which "women wish to be who love their lords."
> Cutting off a leg or an arm = Removing a limb.
> Suckling of children = Feeding of infants.
> Corncutters = Chiropodists.

The report of a trial pasted on another page of the same tattered volume is a reminder of the difficulty under which apothecaries used to seek to recover their fees, and certainly, in respect of the observations of counsel, of the change in forensic manners. "In the Common Pleas, during the trial of an action brought by Messrs. Price and Thompson, surgeons and apothecaries, for medicine and *attendance* afforded to a pork butcher named Gynn who had got a sore toe, Sir James Mansfield observed, 'I think it is a terrible thing that an apothecary cannot charge attendance unless he gives physic, whether it's wanted or not.' The daughter of the butcher, it appeared, had also a sore finger and an opening draught had been given her. 'See, gentlemen,' said Serjeant Shepherd, 'because this poor young lady happens to scratch her finger, she is condemned to an opening draught! Take care of your fingers, gentlemen, or the Lord have mercy on your bowels!'" The evidence in this case, given by an apothecary, who described himself as "of the old school," upon his own practice with regard to charges, was that he "never directly charged for attendance, but that when he thought it ought to be considered he said so in a *modest* manner at the foot of the bill." The same gentleman, by the way, showed that even in those days a scientific witness might sometimes get his own back from a cross-examiner who handled him roughly, for when in order to show that the opening draught was necessary treatment he was pressed to say that butchers lived well and were often of a gross habit of body, he retorted, "Yes, Sir, I think all professions live well when they can. No doubt, Sir, you take your wine." Serjeant Vaughan, counsel for the plaintiff, to whom this was addressed, laid stress upon the physical attributes of butchers in terms of refined humour which

make one try to recall the name of the gentleman supposed to be the prototype of his learned brother Buzfuz. He said to the jury in the course of his speech, "Oh, gentlemen, I would that I could produce their butcher here! No doubt he has a carcase bursting at every pore: and a toe that would take a quarter of a pound of meal to poultice it! *A toe!* I daresay it would cover Lord Wellington's position. Gentlemen, you all know what a butcher is! Many an opening draught it must have taken to open him and many a tonic to shut him up again!" In spite of his eloquence, however, Serjeant Vaughan consented to withdraw the record and to allow his client to be non-suited on Sir James Mansfield expressing the opinion that the charges were too high, and the reporter, in conclusion, informs us that the litigation was over a bill of two guineas, which the defendant had actually consented to pay, but only after legal proceedings had been commenced. As he would not pay the costs as well the case came into court with the above result, presumably at the ultimate expense of the unhappy surgeons and apothecaries.

The same scrap-book, it may be mentioned, contains a long account of a young lady named M'Evoy, of Liverpool, who had become blind and who after being blind-folded in addition was able to distinguish by means of her finger-tips the colours and shapes of objects, to read print, and to declare the nature of articles in an amazing manner, the peculiarity of her feats being that glass was placed between her and the objects to be named, not, be it observed, with a view to making her task more difficult by preventing her from feeling them, but because the interposition of the glass actually assisted her, and because she could not exercise the same perception without it. This was before the days of music-halls, and apparently Miss M'Evoy was a retiring young lady who did not perform for gain, and shunned publicity. Perhaps, however, she may have been a well-known character of whom authoritative records exist accounting for her performances.

By the way, I have omitted to point out that the note on "*enceinte*," to which I have referred above, begins by mentioning its pronunciation as a puzzle to many, but gives no rule with regard to it. May I suggest that *enceinte* is pronounced as if it were spelt "*en-sainte*," the second syllable being indistinguishable from the feminine of the French word for holy, and that it is not possible to print an exact English equivalent, the nearest, perhaps, being the name of a well-known artist, the "einte" having much the same sound as the "ant" in cant or pantaloon, pronounced with a slight Cockney twang.

I am, Sir, yours faithfully,

Jan. 7th, 1911. A. A.

## "606" ON TRIAL.

A PEKING correspondent sends us an extract from the *Peking Daily News* of Nov. 15th, 1910, stating that the Ehrlich-Hata 606 "will be ready to be supplied to the dispensaries and apothecaries in about four weeks time." It therefore calls on "the doctors and hospitals in China who intend to use this remedy quickly ..... to kindly send their orders at once to the nearest dispensary." "A native doctor," our correspondent writes, "who has no idea of antiseptics, &c., came to see me the other day, and told me he had ordered a quantity. When injected without attention to detail it will be interesting to see what mistakes occur." It is to be hoped that this "awakening of China" in respect of Occidental medicine will not be nipped in the bud by the chilling frosts of catastrophe.

## UNQUALIFIED DENTAL PRACTICE.

*To the Editor of* THE LANCET.

SIR,—I would like to appeal to our medical brethren who have much and well-deserved influence with, and opportunities to educate, their patients. When those patients may need our services, can they not be helped to discriminate between qualified and unqualified dentists? Dental affairs before the well-known House of Lords' pronouncement were sufficiently deplorable, but since that surprising decision matters have become truly appalling! The unqualified do not hesitate to shamelessly assert immense superiority over qualified dentists, while they dub their shops or offices "Dental Surgery," "Dental Institute," "Dental Rooms," &c., and the public in consequence may be deluded into assuming that this class are registered dentists. I am sure that if the members of the medical profession would courteously take the trouble to point out to their patients the importance of seeing that any practitioner employed is registered, we should have, at any rate, a somewhat improved condition of things dental.

I am, Sir, yours faithfully,

Jan. 2nd, 1911. REGISTERED DENTAL PRACTITIONER.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

**THE following Congresses, Conferences, and Exhibitions are announced for 1911:—**

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
April (Berlin).—German Surgical Congress. (Thirty-ninth Annual Meeting.)
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
April 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
" (Los Angeles, Cal.).—American Medical Association.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August 15th–21st (Dublin).—Royal Institute of Public Health.
" 30th–Sept. 6th (Portsmouth).—British Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
" (Genoa).—International Exhibition of Marine Hygiene.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
" 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 18th–24th (Turin).—Fourth National Congress of Hygiene.
" 24th–30th (Rome).—International Congress on Tuberculosis.
" 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Montreal).—Canadian Medical Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

**In 1912:—**

Spring (London).—Second Optical Convention.
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

**In 1913:—**

(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

**In 1914:—**

(Vienna).—Third International Congress for Professional Diseases.

**In 1915:—**

(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

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THE following journals, magazines, &c., have been received:—*The Antivivisection Review, Internacio Medicino, The Nation in Arms, Peru To-day, Munchener Medizinische Wochenschrift, Wiener Medizinische Woche schrift, Il Policlinico, Boston Medical and Surgical Journal, Gazetta Degli Ospedali e delle Cliniche, Revue Française de Médecine et de Chirurgie, Archives of the Roentgen Ray, West London Medical Journal, The Morningside Mirror, Allgemeine Wiener Medizinische Zeitung, Cotton Factory Times, Richmond and Twickenham Times, Journal of Anatomy and Physiology, Broad Arrow, Army and Navy Gazette, Times of India, Pioneer Mail, Engineer, Hertfordshire Mercury, Official Gazette of the United States Patent Office, American Journal of Clinical Medicine, Mining Journal, Optician, Deutsche Medizinische Wochenschrift, Annales des Maladies des Organes Génito-Urinaires, Indian Ambulance Gazette, Indian Engineering, Literary Digest, La Presse Médicale d'Egype, Archives de Médecine et de Pharmacie Militaires, La Clinique Ophtalmologique, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Berliner Klinische Wochenschrift, Gazette Médicale de Paris, Archives Générales de Médecine, La Presse Médical Belge, The Practitioner, Nederlandsch Tijdschrift voor Geneeskunde, Il Morgagni, La Crónica Médica, Revue de Gynécologie, Gazette Hebdomadaire des Sciences Médicales de Bordeaux, La Belgique Médicale, South African Medical Record.*

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James): at 8 P.M.

*Paper:*
Mr. Charles Goulden: Some Inflammatory Conditions of the Eye due to Oral Sepsis.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bart.): at 5.30 P.M.

*Papers:*
Dr. A. E. Garrod: The Auscultation of Joints.
Dr. W. Essex Wynter: The Loss of Abdominal Movements in Pericarditis.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

*Cases and Specimens:*
Dr. Eric Pritchard: (1) Intermittent Word and Letter Blindness; (2) Idioglosia.
Dr. T. R. Whipham: Enlargement of the Liver (for diagnosis).
Mr. Sydney Stephenson: Embolism of the Central Artery of the Retina in a Girl of 11¾ Years.
Mr. H. S. Clogg: Sequestrum from a Case of Necrosis of the Jaw.

*Papers:*
Dr. F. Parkes Weber: Splenomegaly with Recurrent Jaundice, ending in Hepatic Cirrhosis and Ascites; with Remarks on the Splenomegaly of Inherited Syphilis in Children.
Mr. S. F. Rose: Ulcerative Stomatitis in Children.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretary—F. A. de T. Mouillot): at 5.30 P.M.

*Paper:*
Dr. Buckley (Buxton): Chronic Rheumatism in its Relation to Osteo-arthritis.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

*Paper:*
Dr. F. A. Bainbridge: The Ætiology and Epidemiology of Paratyphoid Fever and Food-poisoning.

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**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—8.30 P.M., Clinical Meeting. Cases will be exhibited by Dr. H. French, Dr. F. S. Palmer, Mr. M. Heath, Mr. C. Symonds, Dr. Bunch, Dr. Poynton, and others.

**MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.**

TUESDAY.—8.30 P.M., Adjourned Discussion on the Workmen's Compensation Act (opened by Mr. A. S. Morley).—Dr. W. Aston: Traumatic Neurasthenia and the Workmen's Compensation Act.

WEDNESDAY.—5 P.M., Demonstration (in the Laboratories of the Royal Institute of Public Health):—Prof. W. R. Smith: Chemical and Serological (Precipitin) Tests for the Detection of Human Blood and its Differentiation from that of other Animals.

**HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.**

WEDNESDAY.—8.30 P.M., Dr. F. J. Smith: Medical Fees.

**CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.**

THURSDAY.—7.30 P.M., Mrs. M. Scharlieb, M.D.: Recreational Activities of Girls during Adolescence.

**HARVEIAN SOCIETY OF LONDON, Paddington Green Children's Hospital.**

THURSDAY.—8 P.M., Clinical Evening.

**OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.**

THURSDAY.—8 P.M., Card Specimens: Mr. Dorrell and Mr. James. 9 P.M., Mr. J. H. Fisher: The Pituitary Body and Lesions of the Optic Chiasma.—Mr. L. Paton and Dr. G. Holmes: Histopathology of Papilloedema.—Dr. H. Griffith: Three Cases of Optic Nerve Tumour.

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## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**UNIVERSITY OF LONDON (ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.).**

THURSDAY.—5 P.M., Mr. R. H. Burne: Comparative Anatomy of the Internal Ear.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Mr. J. E. R. McDonagh: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. J. McCann: The Treatment of Puerperal Infection.

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. Campbell: The Neurone Theory.

WEDNESDAY.—4 P.M., Mr. E. M. Corner: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. N. Tirard: Dyspnœa in Bright's Disease and in Diabetes.

THURSDAY.—4 P.M., Dr. L. Guthrie: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. D. Lister: Prognosis in Phthisis (Lecture II.).

FRIDAY.—4 P.M., Mr. E. B. Waggett: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Operations for Gall Stones.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery (Lecture II.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. R. Lloyd: Anæsthetics.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. J. Taylor: Visual Complications of Nervous Disease.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture: Mr. Cargill: Ophthalmic Evidences of General Disease.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld). Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Lecture:—Dr. Pirie: The Treatment of Recurrent Carcinoma and Rodent Ulcer by X Rays.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. H. W. Carson: The Indications for, and Results of, Gastric Surgery.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Hydrocephalus.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Cerebral Vascular Lesions.

**HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Congenital Dislocation of the Hip; Coxa Vara; Coxa Valga. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Lecture:—Mr. Waugh: The Use of Tuberculin in Surgical Diseases.

FRIDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Paralytic Deformities; Infantile and Spastic Paralysis (Special Post-Graduate Course.)

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.**

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Coccus Diseases—I., Impetigo Contagiosa; II., Furuncle; III., Carbuncle; IV., Coccogenic Sycosis.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. F. W. Mott: Heredity. (Lecture II.).
FRIDAY.—9 P.M., Prof. W. H. Bragg: Radioactivity as a Kinetic Theory of a Fourth State of Matter.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. E. S. Bishop: Acute Intussusception. (Post-Graduate Clinic.)

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (25th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**SATURDAY** (28th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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### THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Jan. 18th, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Jan. 12 | 29·53 | N.E. | 0·30 | 51 | 41 | 38 | 37 | 40 | Overcast |
| ,, 13 | 30·16 | N. | 0·05 | 56 | 39 | 34 | 35 | 36 | Cloudy |
| ,, 14 | 30·30 | S. | ... | 41 | 39 | 32 | 32 | 33 | Foggy |
| ,, 15 | 30·48 | W. | ... | 45 | 40 | 32 | 31 | 33 | Cloudy |
| ,, 16 | 30·59 | S.W. | ... | 50 | 47 | 32 | 34 | 35 | Foggy |
| ,, 17 | 30·73 | S.W. | ... | 51 | 46 | 35 | 42 | 43 | Overcast |
| ,, 18 | 30·74 | N.W. | ... | 46 | 45 | 43 | 42 | 44 | Overcast |

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# An Address
ON
# THE HOSPITAL UNIT IN UNIVERSITY WORK.

*Delivered before the Northumberland and Durham Medical Society*

BY WILLIAM OSLER, M.D., F.R.S.,
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GENTLEMEN,—I offer no apology for bringing before you an academic subject. Though the society has no direct university affiliation, as individual members you are interested in the development of the profession, and you take a pride in the rapid growth of the provincial universities, among which that of Durham, the northern sister of Oxford and Cambridge, takes precedence. What is university work? What is a hospital unit? What connexion have they with each other? And what interest have they for us, and for the community at large?

## THE FUNCTIONS OF A UNIVERSITY.

All are agreed that a university has a dual function—to learn and to advance learning. I use the word "learn" in the old sense—met with in the Bible and still used colloquially—as it expresses the mental attitude of the student towards his *alma mater*, "*totius litteratorii studii altrix prima.*" In mind, manners, and morals the young man seeks life's equipment when he says to his *alma mater* in the words of the Psalmist, "O learn me true understanding and knowledge." To learn the use of his mind, to learn good manners, and to learn to drive Plato's horses, form the marrow of an education within the reach of every citizen, but to which universities minister in a very special way; and it should be comprehensive, fitting a man in Milton's words "to perform all the offices, private and public, of peace or of war." The other great function of a university is to advance learning, to increase man's knowledge of man and of nature. Looking over the lecture list of any modern university one is impressed with the bewildering complexity of subjects taught, from Homer to Victor Hugo, from Tamil to internal secretions; but they may be roughly grouped into those dealing with man and those dealing with the cosmos about him. At any time these 800 years this division has been recognised, and though we have travelled a long way from the seven liberal arts which once comprised the whole range of study, it is not so much the nature of the subjects or their division that characterises modern education as a new spirit, a new attitude of mind towards them. No real progress was made until we returned to the Greek method—the pursuit of knowledge for its own sake. Out of the laboratories, as the result of work done by men absorbed in study and usually without the slightest bearing upon practical problems, came the three great revolutions of the nineteenth century—the annihilation of time, the substitution of the machine for the hand, and the conquest of disease. Physics, chemistry, and biology have given us control of the forces of nature. Faraday has harnessed Niagara, the power of which is now transmitted hundreds of miles away; the Curies have found the magic vril of Bulwer Lytton's "Coming Race"; and Pasteur has revealed one of the greatest secrets of life. It is characteristic of modern conditions that, hovering on the borders of the charmed circle of pure science, are those keen to turn every discovery to practical use. What good is knowledge unless it can be utilised in the service of man, asks a utilitarian age? The university of to-day, while ministering to the advancement of learning, is ready to teach how to make the learning profitable, so that everything in practical science, from household economy to aviation, finds its place. Schools specially adapted to special needs stand out as dominant features in the new programme, and Oxford and Cambridge, as well as Newcastle, Leeds, and Bristol, have felt the strong impulsion to develop the science which deals with human well-being. Of the old faculties which made up the *studium generale* medicine has been the one most profoundly affected by growth of modern science. What a revolution in our generation! Anatomy, physiology, and pathology, with their subdivisions of histology, embryology, physiological chemistry, and pharmacology, are now in laboratories controlled by specialists, whose ideals and work differ in no respect from those of their colleagues in the departments of physics, chemistry, and biology; and in many places large separate institutes are devoted to these subjects. The urgent need to-day is to extend this type of university work into our medical schools, so that *all* branches of the curriculum are included—medicine as well as pathology, surgery as well as anatomy, midwifery and gynæcology as well as chemistry. But here comes a difficulty—the practical schools which deal with these important subjects and their subdivisions are not under the control of the university, or at best have a very feeble affiliation. In this country the hospitals are either independent corporations, as here, or the medical school has evolved from the hospital, as in London, or there exists a mutual arrangement between the university and the hospital, as in Edinburgh. The difficulty is not insuperable—the same public-spirited citizens support both institutions; the hospital staff includes the teachers in the medical school. It only needs a rearrangement of responsibility, financial and educational.

## THE HOSPITAL UNIT.

What is a hospital unit, and how can it be brought into line with university work? First a word on what a hospital stands for in the community. Primarily for the cure of the sick and the relief of suffering; secondly, for the study of the problems of disease; and thirdly, for the training of men and of women to serve the public as doctors and nurses. A majority of hospitals deal only with the first of these objects, and incidentally with the third. All agree that a study of the problems of disease and the training of men and women in the technique of the art come within the sphere of the university. England has suffered sadly from an absence of great medical faculties, such as exist on the Continent; and nowhere is this more evident than in the dissociation of the hospital from the university. One consequence has been that the hospitals have been built by men who had no idea whatever of their scientific needs, and too often staffed by men who knew little and cared less for anything beyond their primary function. The present plan of hospital administration is a legacy from a period when university ideals had not reached the practical side of our medical schools. I need not do more than to refer to the arrangement of the staff which exists everywhere—three or four physicians, two or three surgeons, one or two gynæcologists, other specialists, and a group of juniors who serve as out-patient assistants, waiting for promotion to the wards. The pathological department, often only a dead-house so far as the hospital is concerned, is in no way coördinate with the others. Laboratories of bacteriology, clinical chemistry, microscopy, and of clinical physiology may or may not exist. This English system, which has spread to the United States and to the Dominions, has worked well in some ways, and is responsible for the general excellence of the hospitals, large and small. Go where you may, from the cottage hospital to the big city infirmary, the internal economy, so far as cleanliness, general care of the patients, and nursing, is admirable. Speaking from a comparatively wide experience of hospitals, I say unhesitatingly that the average level of comfort and care is nowhere so high as in this country, and in no small measure is this a tribute to the character and training of the women connected with them. But there are very glaring defects, foremost among which is the absence of proper laboratory accommodation in pathology, bacteriology, clinical chemistry, and microscopy. Time and again in large well-arranged hospitals I have asked for the pathological laboratory, and have been shown a dead-house; for the clinical laboratory, and have been told that it did not exist; and have been chagrined to find that even in so simple a matter as the determination of the nature of a tumour, or the bacteriological examination of a fluid, the institution had to depend upon the excellent clinical research laboratories of London. But an equally grave defect is in the internal organisation. The general hospitals, even those connected with medical schools, are as a rule overstaffed, four physicians or three, where there should be but one or two, and the same with the surgeons. On the other hand, in many the resident staff is miserably inadequate, and their time so taken up with routine that any scientific study of cases is impossible. A keenly interested physician has a capable house physician in good training—off he goes at the end of six months! and

the same weary process begins of putting a fresh man into harness. In the very best hospitals, with medical school affiliation, the arrangements are on old and very unsatisfactory lines. In long, uphill years the ambitious young man goes through the position of resident physician, medical registrar, assistant physician, and at 40 (if he is lucky!) gets wards. Then a visit two or three times in the week with a house physician, a certain amount of teaching, and possibly some laboratory work, but he has a living to get and practice becomes the first consideration. He has precious little pay, if any; there are no paid assistants; there is no continuity in the organisation; in fact, there is no organisation on modern lines. This can be changed if we can convince the authorities that the subjects of clinical work come directly within the sphere of the university, and that certain hospitals must be adapted to meet the demands of the scientific study of disease and the scientific training of students. The problem is how to place a dozen or more teachers in every medical school in the same relation with the university as the professors of physiology and of physics—how to give to each one of them a department organised on university lines, in which the three functions of a hospital may be utilised and coördinated. The hospital unit meets the condition—a department under the complete control of the university, or under the joint control of hospital and university. Take a medical faculty with, say, 300 students, for which the necessary hospital accommodation would be about 500–600 beds, a unit would represent a clinique in the continental sense, of which there would be five or six major, and as many minor—the former including medicine, surgery, midwifery and gynæcology, pyschiatry and neurology, pædiatrics, and ophthalmology; the latter, dermatology, dentistry, laryngology, otology, syphilis, and genito-urinary diseases. There might be, as at Berlin and Vienna, two or three medical and the same number of surgical units. In Vienna, for example, there are three completely equipped midwifery and gynæcological units, each with lecture rooms, laboratories, rooms for students, and the whole paraphernalia for teaching and research.

### THE ORGANISATION OF THE UNIT.

Let us take medicine, the one with which I am familiar. The components are the professor or director, 60 or more beds, an out-patient department, four or five laboratory rooms, and a staff. Let us deal with these in detail.

The *Professor* has three duties—to see that the patients are well treated, to investigate disease, and to teach students and nurses. He should be a man with wide sympathies and of trinocular vision. He should have a comprehensive and thoroughly scientific training, and should enter clinical medicine through one of three portals—physiology, chemistry, or bacteriology and pathology. He must be keenly practical, keenly scientific, fond of his patients, fond of his work, and devoted to his students. He should live as much in his wards and laboratories as do his colleagues in their laboratories of anatomy, physiology, chemistry, or physics. The question at once comes up, Is this possible? Can we expect surgeons, physicians, obstetricians, and specialists to devote themselves entirely to University work, and to carry out the three functions of the hospital, without regard to the public outside? Theoretically it sounds feasible, but in practice I do not believe it to be possible. In the case of a successful teacher with a widespread reputation, the public, to say nothing of the profession, could not be kept away from him. But it would not be unreasonable to ask such a man to devote at least one-half, or even more, of his time to the hospital duties. For the heads of the different units the university would go into the open market and seek the best men available. Under our present system the university choice of professors in the practical departments of the faculty of medicine is, as a rule, limited to men who hold hospital positions in a town. It is encouraging to see that the provincial universities are departing from this old practice, and I am very glad that you lost your distinguished townsman, Dr. George Murray, who was appointed to the chair of medicine in Manchester.

But it may be urged—have we not heard that the day of the pure clinician is over?—did not our *Opsonator maximus*, Sir Almroth Wright, pronounce his funeral oration a few months ago at the Royal Society of Medicine? Do not listen to him—*Clinicus perniciosus*, to quote Mindererus, with vision so myopic that he can see only applied bacteriology in clinical medicine. As is the twig, so is the tree, and with his upbringing such opinions are perhaps natural; and it is not for me to abuse an old friend, of whose good work no one has a higher appreciation. But in these days so winged are Sir Almroth Wright's words that they fly far and need a protest from one who has been keenly alive to every bacteriological advance in medicine. Think of what would have happened if a man of Sir William Broadbent's wide sympathies, clear judgment, and enthusiasm had had a great modern clinique at St. Mary's Hospital, such as those of Leyden or of Kraus at Berlin—do you suppose the bacteriological tail would have wagged the clinical dog? Far from it! Sir Almroth would have done just as good work as director of the bacteriological laboratory of the clinique, and vaccine therapy would not have received such tardy recognition, and would have been in just as satisfactory, or possibly in a more satisfactory position. A striking comment, too, on Sir Almroth's claims is the fact that the medical and surgical staff at St. Mary's are still on duty!

*Patients.*—In the case of the medical clinique the number will depend upon the size of the medical school. In a hospital to which many acute cases are admitted a male and a female ward with about 30 beds each, and with a few small extra rooms, would furnish ample clinical work for a senior class. There are continental cliniques in which double this number of patients are treated, and the matter is one for organisation. To make the teaching and the work of the unit effective, it is essential to give the professor control of an out-patient department, with proper arrangements for the study of the cases and for the teaching of the junior students. In how many out-patient departments is the university side of the hospital problem considered?

*Laboratories.*—It is a characteristic of modern medicine that every available science is pressed into her service in the study and treatment of disease. Any sort of rooms will do for laboratories. The very best of work has been done with the meanest sort of equipment. The ideal plan is that followed in certain hospitals, the new cliniques, for example, of the Cochin in Paris, in which each unit consists of two wards on either side of a central building, the lower floor of which is devoted to administration, and the upper to laboratory purposes. In every way it is a convenience to have the laboratory rooms in close proximity to the wards, and when feasible they should form an essential part of the unit, but for the sake of economy they may be merged, and all the pathological work concentrated in one building. Nowadays provision should be made for (1) cardio-respiratory physics and physiology: (2) bacteriology and vaccine therapy; (3) chemistry; (4) microscopy; (5) X ray and electrical work; and (6) a general laboratory for the students. From the standpoint of the teacher the most important of these is the large laboratory for the students, in which the subject of clinical microscopy is systematically taught to the juniors, each man having his own place and his own microscope, and in which the seniors work while acting as clinical clerks. No benefaction to the Johns Hopkins Hospital was more helpful to the medical school than that in which some kind friends gave the necessary money for a clinical laboratory. The best general clinical and pathological laboratory I have seen lately is that newly opened at the hospital which gave me my start in life, the Montreal General. The arrangements for students are admirable.

*The staff.*—The present arrangement existing in almost all English, American, and Dominion hospitals is antiquated, and in every way ill-adapted to modern conditions. A man is given a house physicianship for six months, or possibly a year; there is a senior resident physician, and there are laboratory assistants, who may or may not be at the disposal of the professor. Gradation, permanency, and specialisation should prevail as in any other university department. There should be four groups. First, the senior assistants nominated by the professor, holding university as well as hospital appointments, and who should be prepared to remain for an indefinite number of years. In a clinique of moderate size three such could be utilised. The first assistant, a man of some maturity, should be in full charge of the department in the absence of the professor. The position should be made attractive and ample opportunities should be given for original work and for teaching. From this group the professoriate throughout the country would be recruited. Secondly, the junior assistants, house physicians, appointed

annually and by competition from the members of the senior class. Thirdly, laboratory chiefs, who need not be resident; but it is a good plan to have one of the senior assistants in charge of the laboratories, and one who is at the same time responsible for the laboratory teaching of the students. The arrangements vary greatly at different cliniques in accordance with the leanings of the professor towards chemistry, physiology and physics, or bacteriology. Fourthly, an out-patient staff made up of assistant professors in the department, as a rule men in private practice, and who are in charge of the junior teaching. At the Johns Hopkins Hospital we had three men in charge of the medical out-patients, each of whom took two days in the week, each with his own staff of assistants and a group of students assigned as clinical clerks. Special out-patient departments may be managed by the clinique; for example, the Tuberculosis Dispensary, which at the Johns Hopkins Hospital, under the care of Dr. Hamman, has grown to be one of the most important departments of the hospital.

*Teaching.*—Entering one of the clinical units, a student should be made to feel a part of it, having his share in caring for the patients and in studying the disease, and even in the teaching. He should be made to feel that the hospital is his home. This has been one of the special boons enjoyed by the British medical student in his senior years; the hospital has been in reality the medical school, and there has not been that disassociation between the two which exists too frequently elsewhere. The teaching should be entirely practical. In a few systematic lectures some of the more rare affections may be considered. Brought into daily contact with disease, the students gradually learn to recognise it, and are taught the management of patients. In clinical lessons and in demonstrations the professor and the assistants would in the course of a year cover the ground very thoroughly. In amphitheatre cliniques it is easy to keep all senior students in touch with the department, while the special group, acting as clinical clerks, spend the greater part of their time in the wards. The five years of the curriculum should be divided equally, and the 30 months given to the hospital would enable a man to go the rounds of the departments and get a very full insight into the work. Hospitals have no vacations, and the old-time vacations should be done away with, and the school year divided into quarters, during which the work would proceed continuously. A man could take a week or so of vacation when he felt it was necessary, but it is high time a stop was put to an atrocious waste of time on the part of the students. The professor and his assistants should keep in mind the fact that the men entrusted to their care are to become practitioners, and as far as possible the practical work of the wards should be done by them. Upon one thing I would insist—that every assistant connected with the clinique taught. A few exceptional men, like the distinguished physicist, the late Professor Rowland, are really too good to teach; but for the majority, daily contact with students, and a little of the routine of teaching, keep us in touch with the common clay and are the best preservatives against that staleness so apt to come as a blight upon the pure researcher.

*Research work.*—Just as the big chemical laboratory of the university exists for research, so should the clinical units help to advance our knowledge of the causes of disease and of its treatment. The problems are innumerable, and in a well-organised clinique there will be men working at them in almost every department. A few of the better students may always be utilised for this purpose. The important thing is to keep one section at least of the clinique well in the fighting line, battling with the problems of to-day, in metabolism, immunity, cardio-respiratory physics, &c.

The other units would be organised in the same way, and, as I remarked, in large schools there could be three, or even four, medical and surgical cliniques. The important thing is to organise each unit on university lines. For example, the professor of psychiatry should be *ex-officio* in charge of the city asylum, managed as one of the departments of the university, and into which, as a matter of routine, each medical student would pass for one of his ten hospital trimestres.

The truth is, we need an active invasion of the hospitals by the universities. But—and here comes the rub—the universities must be willing to undertake their share of the expenses, and the men in charge of the units must be paid salaries sufficient to enable them to devote one half at least of their time to hospital work—to give it the first place in their lives. At present in many places, indeed one may say everywhere, the university does not pay enough for its hospital privileges. How much, I would like to know, does the University of Durham pay to the Royal Victoria Infirmary? Nowadays the physicians and surgeons give their time, but the public, through university channels, should pay this group of men, not only to care for their sick poor, but to train their doctors and nurses, and to study for them the problems of disease. It is impossible to separate the three primary functions of a large hospital, of the machinery of which the medical student is just as much a part as the nurse, and so involved are the new methods of diagnosis, of laboratory treatment, and of research with the utilisation of skilled scientific assistants that it would puzzle anyone to assign the proportion of cost to A, B, or C. A good rule is that followed at the Johns Hopkins Medical School—the University paid half of the salaries of those members of the staff who were directly engaged in teaching and one half, I think it was, of the laboratory expenses.

As the old order changes new developments must be met, and here in the provinces, less hampered by traditions and not tied in the chains of vested rights, you can reorganise the hospitals on these lines through the universities. I have not been discussing Utopia; it is being done elsewhere. In the United States and the Dominions these changes are rapidly progressing, and the hospitals, for example as in Toronto, are being built on a modern plan, with units such as I have described. It will take time and much money, but it can be done; in fact, it has to be done if British medicine is to adjust itself to the new conditions, and so maintain its splendid traditions. Nor is it a matter which concerns the mother country alone. In former days the over-seas students came here for all their work; now the majority of them take their qualifying studies at home and come abroad for post-graduate work. The students from various parts of the Empire should come to our universities and hospitals and find thoroughly organised departments, with laboratories as well equipped for the study of the problems of disease as are those of chemistry and of physics for the study of these subjects.

## ON AUSCULTATION OF JOINTS.[1]

BY A. E. GARROD, M.D. OXON., F.R.C.P., F.R.S.,
PHYSICIAN, WITH CHARGE OF OUT-PATIENTS, TO ST. BARTHOLOMEW'S HOSPITAL, AND PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN.

THAT noises are produced in joints is a familiar fact, for such sounds are in some instances so loud as to be clearly audible to bystanders, and far more often attract the notice of the persons in whose joints they are produced. The loudest articular sounds are those which have little or no morbid significance, and, speaking generally, the most noisy joints are seldom those which are the seats of the more serious forms of disease. Apart from the more conspicuous reports and crackles above referred to, there are abnormal articular sounds, of much fainter character, which are only audible with the stethoscope, and, from experience gained from systematic examinations extending over some years, I have become convinced that auscultation affords valuable aid in the diagnosis of the several forms of morbid change to which the joints are liable.

The method of examination is very simple. The only apparatus needed is an ordinary binaural stethoscope, and any difficulty which may be experienced in keeping the mouth of the stethoscope accurately applied to the changing surface of a joint in movement is easily overcome by the use of a small chest-piece, or, better still, by affixing to the chest-piece one of the indiarubber ring coverings which are sold by instrument makers. A little practice enables one to dispense with any special chest-piece, and teaches how and where the instrument is best applied to the several articulations. Of all joints the knees are those which best lend themselves to such examination, and no difficulty is met with in keeping the chest-piece applied over the soft parts on either side of the patella. During the examination the joint should be slowly flexed and extended, either by the

[1] A paper read before the Medical Section of the Royal Society of Medicine on Jan. 24th, 1911.

patient himself or in a passive manner by the examiner. Auscultation of the shoulder-joint is also easy, and the sounds produced during rotatory movements, as well as during elevation and depression of the arm, may be alike studied. Nor is any serious difficulty met with in the application of the method to any of the larger joints, such as the elbow, wrist, or ankle. Even small articulations, such as the temporo-maxillary or the carpo-metacarpal joint of the thumb, admit of examination with the stethoscope.

I cannot pretend to give in this paper any complete or adequate account of the sounds heard in moving joints, nor of their diagnostic significance, for I can lay no claim to the knowledge required for the production of such an account. My aim is rather to direct attention to the value of this clinical method, and to stimulate others to employ it, in the hope that the accumulated experience of many observers may lead in time to a just appreciation of the meaning of the sounds and an accurate differentiation of their several varieties. Our knowledge of the meaning of sounds heard in auscultation of the chest has been built up by comparison of clinical observations with post-mortem findings, but the qualities of the sounds are in most instances indicative of the method of their production. Thus a pericardial friction sound strongly suggests its origin, and when we hear sibilus, the rush of air through narrowed passages is clearly indicated. Again from the time and distribution of a cardiac murmur the seat and nature of a valvular lesion may be inferred, and the inference drawn during life has been so often confirmed by examination after death that there is no longer any room for doubt as to interpretation, yet experience shows that even skilled observers sometimes are misled by clinical signs.

In the case of joints the opportunities of confirming our findings by actual examination of the parts are few, and therefore the acquisition of certain knowledge as to the meaning of articular sounds must be mainly a matter of clinical observation, checked by such information as X ray pictures afford—information which must, in the nature of things, chiefly relate to the condition of the bony structure. When examined with the stethoscope a normal joint of a young subject is silent. It is true that loud reports are sometimes produced in such joints, and can be produced by some persons at will. Such sounds have no morbid significance, and may be compared to the click produced by lifting a ball from a closely fitting socket; in other words, they are vacuum sounds.

In the joints of subjects past middle life abnormal sounds are often heard, even though the patient makes no complaint of his articulations, and is conscious neither of pain nor stiffness. They may be ascribed to the changes due to wear and tear, but experience teaches that in cases of incipient osteo-arthritis abnormal sounds may precede all subjective sensations. Thus when one knee is alone complained of, its fellow may exhibit well-marked auscultatory signs. On the other hand, silence of a joint is by no means a sure indication of health. In cases of synovitis, in which the articular surfaces are held apart by effused fluid, no sounds are heard, as a rule, but when the effusion has been absorbed a pronounced crackle becomes audible at any part to which the stethoscope can be applied, and this sound, to which the name of synovial crackle may be applied, is one of the commonest of morbid sounds heard in joints. Long after the attack of synovitis is past, especially in cases in which the joint which was its seat is apt to give trouble after any unusual use or strain, the synovial crackle may still be audible, and, as far as can be judged on clinical grounds alone, it would appear to indicate a swollen condition of the synovial membrane. In its most characteristic form it resembles closely the crackle heard when the stethoscope is applied to a region which is the seat of surgical emphysema.

It is not only when effusion is present that diseased joints are silent. A very limited experience of auscultation of tubercular joints leads me to believe that these are frequently or even usually silent, and the same is also true of joints affected by the more acute forms of rheumatoid arthritis, although in the later stages the synovial crackle is usually heard in them. This is in accord with the scanty post-mortem evidence available as to the condition of the joints in the acute stage of the disease in question, which tends to show that the joints themselves are at first but little implicated and that the inflammatory swelling is mainly periarticular. The knee-joints of patients in or past middle life, and especially of women about the period of the menopause, are often the seats of pain and stiffness, which is especially felt in kneeling, or in going up and down stairs, and for which medical advice is sought. In such joints a peculiar abnormal sound is heard, especially well when the stethoscope is applied on either side of the patella. In characteristic cases this is rather a scrunch than a crackle, and has a wholly different character from the synovial sound already described. The character of the scrunch suggests abrasion of cartilages rather than synovial swelling, and radiograms of the articulation in which it is heard usually show slight but distinct evidences of osteo-arthritic changes. I am strongly inclined to think that this scrunch is an early and important sign of osteo-arthritis. It must be mentioned, however, that cases occur in which it is difficult to decide to which class the sounds heard should be assigned, and it is more than probable that in many instances the synovial crackle and osteo-arthritic scrunch coexist.

It should be mentioned that I have here employed the words rheumatoid and osteo-arthritis to designate distinct morbid conditions, which I believe to be manifestations of two distinct diseases, and that I believe the osteo-arthritic scrunch to be a physical sign of that process which results in fibrillation and erosion of cartilages and the formation of chondrophytes and osteophytes.

There is another articular sound which is much less commonly heard than either of those which have already been referred to, and which can usually be felt as well as heard. It is a rubbing noise which suggests the friction of ill-lubricated surfaces upon each other, and is such as might result from the movement upon each other of eburnated surfaces of bone. However, such an explanation is not tenable in view of the fact that after persisting for a time the friction may wholly disappear, and it is in the more advanced stages of rheumatoid arthritis, rather than in association with osteo-arthritic changes, that this abnormal sound is heard. Into one or other of the above-mentioned categories the morbid sounds heard in joints appear to fall for the most part. Lastly, the friction which may be felt over inflamed tendon sheaths produces a quite characteristic noise, which must be distinguished from those produced within the articulations.

To sum up, it may be claimed for auscultation of joints that this method is capable of affording early warning of troubles in articular structures and sometimes reveals the commencement of disease in joints which to inspection and palpation appear to be normal, and which may even cause no discomfort to their possessor. Again, the method gives promise of help in the differentiation of articular diseases, and in distinguishing between those in which the cartilages and bones are implicated, and those in which the synovial membranes and soft parts around the joints alone suffer. If these claims be justified auscultation of joints does not merely supply information which can be equally well obtained in other ways, but promises to lead to the extension of our clinical knowledge of the conditions in which it is employed.

Chandos-street, W.

# TRANSPERITONEAL CYSTOTOMY FOR TUMOUR OF THE BLADDER,

WITH REPORT OF A CASE.[1]

BY SETON PRINGLE, M.B. DUB., F.R.C.S. IREL.,
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IT has long been recognised that the operative treatment of tumours of the urinary bladder is, to put it mildly, disappointing and unsatisfactory; indeed, such a well-known authority as Casper in his book on "Genito-Urinary Diseases" states that "patients do better and live longer without than with operation."

In considering this subject, we must remember that the vast majority of bladder tumours are epithelial in origin, that the majority of these are carcinomata, and that even the pathologically innocent tumours, the so-called benign papillomata, are often clinically malignant, inasmuch as they recur both *in situ* and as implantation tumours. We must

[1] Being a paper read before the Surgical Section of the Royal Academy of Medicine in Ireland on Nov. 18th, 1910.

also, however, remember that the bladder is poorly supplied with lymphatics, so that the growth of cancerous tumours is slow and that metastases are rarely formed.

At present the surgeon generally chooses the suprapubic route in attacking these tumours, as it is more satisfactory than the infrapubic, perineal, or vaginal route, and does not require the special skill and practice which enable a limited number of operators successfully to use the urethral route in selected cases. The suprapubic is, and probably will be, the operation of choice in dealing with tumours placed near the apex of the bladder; but, unfortunately, the great majority are situated at the base, and in dealing with these the disadvantages of this route are many and obvious. It is difficult to obtain a proper view of the growth. The hæmorrhage is difficult to control and further obscures the view. In the cases of malignant growths it is almost impossible to define their limits; and if the orifice of either ureter is involved, as it frequently is, the very greatest trouble is found in dealing satisfactorily with the severed ureter. There is also the danger of infecting the prevesical space.

The results also of the suprapubic operations have been most disappointing. Watson (1) has compiled statistics of the result of 662 suprapubic operations for tumour. He found that in 287 performed for benign papilloma there was an immediate mortality of 10 per cent. and a recurrence of 20 per cent. inside three years. In 375 performed for malignant growths the operative mortality was 27 per cent. and the rate of recurrence 63 per cent. inside three years.

The operation of intra- or trans-peritoneal cystotomy, to which I wish to call attention, obviates all the difficulties of technique which I have enumerated above. At the same time it lessens the immediate mortality, and will certainly improve our end-results as it enables us to deal much more radically with the growth. This operation was first performed by Harrington (2) for an intractable case of hæmorrhagic cystitis. He described the operative technique in detail, and is entitled to all the credit of proposing and carrying out an original procedure. As far as one can judge from a study of the literature, this operation was not again performed until March, 1907, when C. H. Mayo (3) employed the technique of Harrington in dealing with a cancer of the base of the bladder. Up to the present, as far as I have been able to ascertain from a fairly extensive study of the literature, some 21 cases of tumour attacked by this route have been reported. C. H. Mayo in 1908 published reports of 5 cases; and Judd (4) has since reported 10 further cases from the Mayo clinic. Of these 15 cases 9 were carcinomata and 6 benign papillomata. There was only one death, and that occurred in a man of 71, who had half his bladder removed for cancer, and who died from uræmia a week later; at the post-mortem examination his kidneys were found extensively diseased. Scudder and Davis (5) in 1908 published four cases, three of papillomata and one of benign papillary cystadenoma of the prostate. All these cases recovered. Primrose (6) and Cabot (7) in 1909 reported one case each of cancer successfully dealt with by this route.

On analysing these 21 cases we find that a large part of the bladder was resected several times, a ureter had to be transplanted at least on four occasions, and twice the prostate was also enucleated. In spite of these radical procedures the mortality was less than 5 per cent., which compares with a 10 per cent. mortality in the series of cases collected by Watson, in which the suprapubic route was used and the tumour only removed without any resection of the bladder wall. As regards the frequency of recurrence, it is yet too early to speak. Up to the time of publication of Judd's paper there had been three recurrences in Mayo's cases, on two of which he successfully re-operated. If we take these two operations and the case now reported, we find the operative mortality further reduced, as there was only one death in 24 operations—i.e., a mortality of 4·1 per cent.

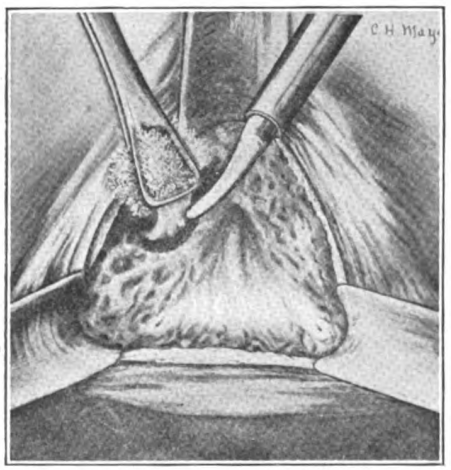
*Operation.*—After the bladder has been washed out and emptied the patient is placed in the Trendelenburg position. The peritoneum is opened by a long median incision extending for six inches or more up from the pubis. In malignant cases the interior of the abdomen is then carefully inspected, to eliminate the presence of metastases before proceeding further. If these are absent, as they usually are, or if the case is of a benign nature, the intestines are now carefully packed off with gauze. The superior peritoneally covered surface of the bladder is now seized with two forceps and a short median incision made into it. The interior is carefully swabbed out and the incision lengthened as much as necessary. In this way an excellent view is obtained. (Fig. 1.) If the tumour is pedunculated, it is grasped in forceps and removed with the knife or scissors, so that some of the normal mucous and submucous coats is also taken. The raw surface left should then be

FIG. 1.

Note the long abdominal incision well retracted, intestines protected by gauze, low posterior incision into bladder, internal meatus, ureteral orifices, tumour, and traction suture. (Scudder, *Annals of Surgery.*)

cauterised with the Pacquelin cautery, or, if preferred, the whole removal may be performed with the cautery. (Fig. 2.) Sutures will not, as a rule, be required, as the cautery controls the bleeding, and the raw surface may be left to granulate up. In malignant cases the whole thickness of the involved part of the bladder wall, whether covered by peritoneum or not, must be removed, the section being made

FIG. 2.




Cautery resection of papilloma of bladder. (Mayo, *Annals of Surgery.*)

through normal tissue. In some cases as much as half of the bladder wall has been removed, and in others the floor of the space left after removing the tumour has been formed by the fibres of the levator ani. If the ureter is involved in the growth, its orifice is removed *en masse* with the tumour, and it is divided above the involved portion. Its distal end is then re-implanted into the bladder, either through a separate puncture (Fig. 3) or through the original incision, and fixed there with catgut sutures. On completing the intravesical part of the operation the bladder wall is completely closed by a double row of sutures, an inner Connell suture of catgut

(Fig. 4), and an outer peritoneal suture of fine silk (Fig. 5).

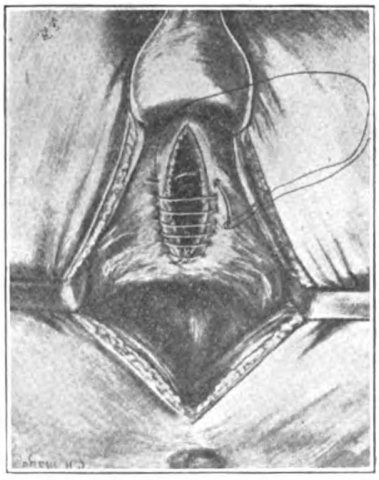
As a rule, the abdominal wound may be closed in its entirety, but if there has been any soiling of the peritoneum a drain may be left in for a few days. In a simple case it is not necessary to drain the bladder, as the patient generally passes urine voluntarily and at frequent intervals from the evening of the operation, and if there is any urethral spasm

FIG. 3.

Removal of large amount of bladder with transplantation of ureter. (Mayo, *Annals of Surgery.*)

a catheter can be frequently passed. Some operators, however, drain these simple cases by means of a catheter in the urethra. In severe cases, as for instance where the prostate has also been removed or a ureter transplanted, it is

FIG. 4.



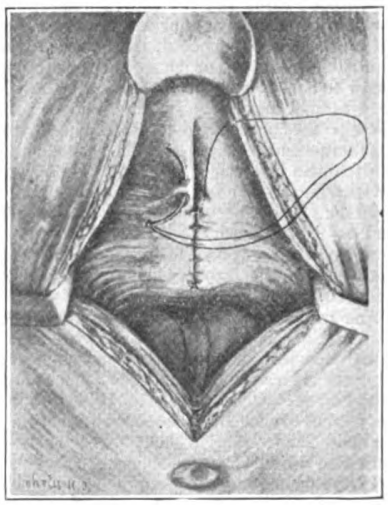
Showing method of closure of bladder incision. First row of sutures. (Mayo, *Annals of Surgery.*)

better to drain the bladder suprapubically through an independent incision into the bladder, made after the peritoneal cavity has been closed.

My thanks are due to the publishers of the *Annals of Surgery* for permission to use the accompanying illustrations.

*Report of case.*—The patient, a man aged 40, was sent to me by Dr. H. Powell of Nenagh. He complained of frequent attacks of painless hæmaturia during the past 12 months, each attack lasting several days. With the cystoscope I saw a large papilloma springing from the right side of the bladder, but it was impossible to clearly define its origin, as the floating papillæ, of which the bladder seemed to be full, constantly obscured the view. On June 1st I performed transperitoneal cystotomy as described. The tumour, which was of the size of a hen's egg, was pedunculated, the pedicle springing from the base of the bladder about an inch below and to the right of the right ureteral orifice, which was not interfered with. An excellent view was obtained, and the tumour was easily removed with scissors, a piece of normal mucous membrane being taken with it. The raw area left, which was about an inch square, was then cauterised with a Pacquelin cautery, and one stitch of catgut inserted to control a bleeding point. The bladder was sewn up as described, and was not drained. The abdominal wound was completely closed. The patient made an uninterrupted recovery, the wound healing by first intention. He passed urine voluntarily the evening of the operation, and continued to do so at frequent intervals. The urine was slightly tinged with blood for the first few days. On June 24th I again examined his bladder with the cystoscope, and could see the line of incision soundly healed, while the

FIG. 5.



Second row of suture closing the bladder. (Mayo, *Annals of Surgery.*)

site of the growth was marked by a small area of granulations. He went home the next day—that is, on the twenty-sixth day after operation, and was then able to retain his urine for five hours.

*Note.*—Since writing the above I find that Richardson in 1895 successfully performed transperitoneal cystotomy on two cases for the removal of large calculi on which the bladder had firmly contracted.[2]

*Bibliography.*—1. Watson: Annals of Surgery, December, 1905. 2. Harrington: Ibid., October, 1893. 3. Mayo, C. H.: Ibid., July, 1908. 4. Judd: Journal of the American Medical Association, Dec. 25th, 1909. 5. Scudder and Davis: Annals of Surgery, December, 1908. 6. Primrose: Ibid., December, 1909. 7. Cabot: Transactions of the American Association of Genito-Urinary Surgeons, vol. iv. 1909.

Dublin.

[2] Annals of Surgery, vol. xxxiii., p. 132.

KING'S COLLEGE (UNIVERSITY OF LONDON).—A course of four lectures on Recent Progress in Physiological Chemistry will be delivered in the Physiological Laboratory, King's College, London, by Dr. Otto Rosenheim, at 4.30 P.M., on alternate Mondays, beginning Jan. 30th. The subjects dealt with will be Inorganic Substances, Carbohydrates, Fats, Proteins, Lipoids; the Chemistry of Colloids and Enzymes. The lectures are free to all members of King's College, to all students of medicine, to all internal students of the University of London, and to medical men on presentation of their cards

# PUERPERAL CONVULSIONS, OR ECLAMPSIA,

AT THE LIVERPOOL WORKHOUSE HOSPITAL.

BY WILLIAM ALEXANDER, M.D.R.U.I., F.R.C.S.ENG.,

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THERE is no disease where the results of treatment are so unsatisfactory and so uncertain as in puerperal eclampsia, and in few diseases are there so many, so varied, or such opposite methods of treatment. This arises from the imperfect knowledge of the disease that we possess and from the apparent facility with which serious cases rapidly improve, or the rapidity with which apparently favourable cases become worse or unexpectedly prove fatal. Hence the undue advocacy of remedies which have been followed by recovery in apparently hopeless cases by some medical men, and the low opinion of the efficacy of the same remedies by other medical men who have used them in apparently favourable cases that, nevertheless, turned out unsuccessfully.

A feeling of uncertainty is universal amongst medical men when called to treat a case of eclampsia, and a very guarded prognosis is always given. The necessity of judicious antepartum treatment is always insisted on, and no doubt the management of the pregnant woman is of great importance; but here again we have no certain methods of treatment that will always ward off eclampsia. Many years ago the writer had a share in the treatment of a lady who was attacked by albuminuria and œdema at mid-term. All the resources of medical knowledge were used to ensure the disappearance of the symptoms before delivery, and success, as far as the disappearance of albumin was concerned, was obtained and safety seemed assured. Nevertheless eclampsia set in post partum, and death took place in spite of all our efforts. On April 3rd, 1906, a woman, aged 19, a primipara, presented herself in the maternity ward suffering from œdema and albuminuria, and 7 months pregnant. She was sent to the general ward to be dieted, but went out against advice. We heard afterwards that she had been delivered naturally, after which the œdema disappeared.

Miss Aldworth, the sister in charge of the maternity wards, has made out for me a statement of the condition of the urine in the patients admitted there for the past five years. From this statement we find albuminuria present in 57 cases, accompanied by general œdema in 25 cases, accompanied by œdema of the lower extremities in 13 cases, albuminuria without any œdema in 19 cases. The quantity of albumin varied from a trace up to 16 grammes. All these cases were delivered safely without any eclampsia, but headaches, blurred vision, stupor, &c., are recorded in a few cases. Many of them were delivered without any preparation, but where possible salines and simple diet were prescribed, so far as time permitted.

The failure of preparatory hygienic measures to save from eclampsia the lady first referred to, and the impunity with which so many cases were delivered safely under the same apparent conditions, show that with the utmost care we cannot always avoid a catastrophe. Nor do carelessness and indifference always lead to one.

Below are brief notes of 38 cases of eclampsia.

### *Eclamptic Cases in Lying-in.*

CASE 1.—Admitted Oct. 13th, 1903. Aged 25; married; primipara. Condition on admission: Os nearly fully dilated; trace of albumin in urine. Subsequent course: Fits began during second stage; had three; then chloroform administered and patient delivered with forceps of healthy child. Fits continued after delivery, patient having 11 during the next 12 hours and being semi-comatose between. Treatment: (*a*) Before delivery—blanket bath. (*b*) After delivery—(1) Enema; (2) potassium bromide (24 grains); (3) later, oxygen inhalation frequently. Progress: Fits ceased after 12 hours. Became more conscious; headache complained of. Fair quantity of urine passed. Bowels kept well opened with saline purgatives. Made good recovery and discharged in 13 days with still a slight trace of albumin in urine.

CASE 2.—Admitted Dec. 30th, 1904. Aged 25; married; primipara (stillborn) and one miscarriage. A week previous to admission face and hands began to swell. Condition on admission: Unconscious; os not dilated; urine loaded with albumin. Subsequent course: Two fits occurred during first stage; none during second. Natural delivery (child premature, decomposed). One fit during third stage and four during next eight hours. Treatment: (*a*) Before delivery: Bath; enema. (*b*) After delivery: (1) Dry cupping over kidneys; (2) pilocarpine nitrate (⅓ grain hypodermically four hourly); (3) oxygen inhalation frequently; (4) vapour bath; (5) potassium bromide (24 grains four hourly); (6) pulv. jalapæ co. (1 drachm, repeated in 12 hours); (7) copious enema. Progress: Fits ceased eight hours after delivery; patient continued drowsy. Milk and barley-water by mouth. Urine remained scanty and loaded with albumin for next 24 hours. Next day urine greatly increased, and less albumin. Recovery uninterrupted. Albumin disappeared from urine.

CASE 3.—Admitted Dec. 31st, 1904. Aged 23; single; primipara. Condition on admission: Os dilated to size of sixpenny-piece. Weak pains. Subsequent course: Delay in second stage. Chloroform administered and patient delivered by forceps of healthy child. Five hours after delivery she had a fit, a second after eight hours, and a third five hours later. Urine loaded with albumin. Treatment: (1) Chloral (15 grains), potassium bromide (24 grains), latter repeated four hourly; (2) calomel (5 grains); (3) cupping to kidneys; (4) pilocarpine nitrate ⅓ grain hypodermically); (5) oxygen inhalation. Progress: Had no more fits after third. Condition improved rapidly in next few days, urine becoming more copious and containing less albumin. Good recovery.

CASE 4.—Admitted March 19th, 1905. Aged 23; single; primipara. Fits began seven hours before admission—nine altogether. Condition on admission: Comatose; anasarca. Subsequent course: Had 11 fits in five hours. Urine scanty, loaded with albumin. Five hours after admission bougies were inserted into uterus; labour came on in 40 hours; no fits during this time. Patient delivered seven hours after labour began of stillborn, decomposed child. Treatment: (1) Vapour bath; (2) ice-bag to head; (3) pilocarpine nitrate (1/10 grain); (4) hot pack; (5) saline enema 1 pint. Progress: After delivery patient continued comfortable for 60 hours, when she had two slight fits in succession. A hot pack was given, and no further fits occurred. Urine during next few days increased in quantity, and the albumin decreased. Patient made good recovery.

CASE 5.—Admitted April 9th, 1905. Aged 36; married; V.-para. Had had gastric trouble for 14 days before admission. Fits commenced 13 hours before admission, several occurring. Condition on admission: Semi-comatose. Labour just commenced. Subsequent course: During first stage (which lasted 11 hours) patient had two fits. Second stage two hours and had no fits; natural delivery; child small, premature. Patient continued restless and delirious all day. Urine very scanty with trace of albumin. Treatment: (*a*) Before delivery—(1) Magnesium sulphate (90 grains three hourly); (2) enema; (3) saline injection (four hourly); (4) oxygen frequently. (*b*) After delivery—Hot pack, repeated after 16 hours, and again 9 hours later. Progress: Had no fits after delivery. Continued fairly well for three days, then became worse, incontinent, &c. Dull, listless. Temperature rose to 103° F. Died six days after delivery from stupor and asthma. Necropsy not granted.

CASE 6.—Admitted Dec. 18th, 1905. Aged 19; single; primipara. Condition on admission: Face, hands, abdomen, and legs swollen. First stage of labour well advanced. Subsequent course: Six hours after admission had a fit. Chloroform administered and patient delivered by forceps of full-term stillborn child. An hour later had a second fit. Slept well afterwards. Urine scanty; loaded with albumin. Treatment: (1) Enema, bath; (2) tr. scillæ (24 minims), spir. æth. nit. (24 minims), pot. acetat. 6 grains three hourly; (3) chloral (60 grains per rectum); (4) oxygen frequently; (5) calomel (5 grains), pulv. jalapæ co. (20 grains); (6) vapour bath. Progress: After second fit continued much better. Improved daily. Urine rapidly increased and albumin decreased. Uninterrupted recovery.

CASE 7.—Admitted Feb. 1st, 1906. Aged 22; single; primipara. Condition on admission: Slight pains. Os not dilated. Trace of albumin in urine. Subsequent course: Shortly after admission patient had a fit. During first stage (which lasted 12 hours) patient had 20 fits. An hour later delivered naturally of twins, having three fits during second stage. During next four hours she had 11 fits. Became incontinent, cyanosed, unconscious. Treatment: (1) Bath, enema; (2) calomel (5 grains), pulv. jalapæ co. (25 grains); (3) oxygen frequently; (4) hot pack; (5) morphia (¼ grain), atropia (1/75 grain), hypodermically; (6) croton oil (1 minim); (7) cupping over kidneys; (8) vapour bath; (9) potassium bromide (24 grains), chloral (30 grains per rectum); (10) venesection (14 ounces withdrawn); (11) ice-cap to head. Progress: Fits ceased four hours after delivery, leaving patient unconscious and cyanosed. Given liquor strychninæ hydrochloride (3 minims) and digitalis (1.50 grain) hypodermically, brandy (1 ounce). Temperature rose to 105·4° F., so was ice sponged. Saline enema (20 ounces) given. Three hours later strychnine and digitalis repeated. Breathing now difficult; mustard poultice given. Urine very scanty. Condition slightly improved during next 12 hours. The patient slowly grew worse and died next day. No necropsy allowed.

CASE 8.—Admitted Oct. 3rd, 1906. Aged 18; single; primipara. Condition on admission: Slight œdema of legs; small quantity of albumin in urine. Os dilated to size of a shilling. Subsequent course: First stage finished nine hours after admission. Two hours later delivered naturally of healthy, full-term child. Labour in all respects seemed normal. One hour after delivery patient had eclamptic fit, followed by a second and a third at intervals of 15 minutes. Did not regain consciousness between the fits. Treatment: (*a*) Before delivery—(1) Enema; (2) magnesium sulphate (90 grains, four hourly); (3) milk diet. (*b*) After delivery—(1) Copious enema; (2) oxygen frequently; (3) mist. diuretic. (1 ounce, three hourly). Progress: After the first three fits had passed off the patient became quite conscious and spoke rationally. Three hours after third fit she had a fourth, and then frequent attacks. Recovered completely. Went out quite well.

CASE 9.—Admitted Dec. 18th, 1907. Aged 22 years; single; primipara. Condition on admission: Os partially dilated. Urine contained large quantity of albumin. Subsequent progress: Delivered of healthy child three hours after admission; labour normal. Seven hours after delivery patient had an eclamptic fit and two more at intervals of ten minutes; conscious in interval. Transferred to surgical wards where she had five more fits in one and a half hours. After this she remained comatose and died 28 hours after delivery. Necropsy: Œdema of lungs.

CASE 10.—Admitted Jan. 19th, 1908. Aged 20; single; primipara. Condition on admission: Feet, legs, and abdomen œdematous; face puffy and cyanosed. Os partially dilated. Urine contained small quantity of albumin. Subsequent course: Six hours after admission delivered naturally of healthy child. Seven hours after delivery patient had an eclamptic fit, and during next ten hours had seven more. Treatment: (1) Copious enema saponis; (2) magnesium sulphate (1½ drachms hourly); (3) hot pack (repeated in four hours); (4) morphia (¼ grain hypodermically); (5) ice cap to head; (6) potassium bromide (12 grains); (7) saline injection (1 pint); (8) mustard cloths to legs; (9) thyroid tabella (gr.v., one thrice daily). Progress: Slightly improved; quite conscious. Transferred to surgical wards. No more fits after this and no further treatment. Uninterrupted recovery.

CASE 11.—Admitted June 12th, 1909. Aged 33; single; primipara. Condition on admission: Os slightly dilated; restless; no pains. Subsequent course: Delivered naturally 22 hours after admission. After delivery remained comfortable for two hours, when she had a fit. Urine contained small quantity of albumin. Treatment: 1. Before delivery, for restlessness—nepenthe (15 minims). 2. After delivery, when fit occurred—(1) calomel (5 grains); (2) potassium bromide (24 grains); (3) haust. chloral (15 grains); (4) enema saponis (20 ounces) with glycerine (1 ounce); (5) milk diet, barley water. Progress: No fits occurred after the one mentioned above. No further complications. Recovery uninterrupted.

CASE 12.—Admitted Jan. 25th, 1910. Aged 22 years; single; primipara. Condition on admission: Unconscious. Had had eight fits before admission. Os dilated to size of a shilling. Moderate albuminuria (4 grammes). Subsequent course: Five minutes after admission patient had a severe fit. One hour after admission chloroform was administered, the os dilated with the fingers, leg drawn down, and patient delivered of stillborn, decomposed child. Second child decomposed, also delivered by traction. Placenta removed manually. Douched. Patient remained semi-conscious for three hours after delivery, when she died suddenly. Treatment: (1) Enema; (2) hot pack. Necropsy: Slight tear of cervix. Large clot in right auricle attached to tricuspid valve.

CASE 13.—Admitted July 25th, 1910. Aged 33; single; primipara. Condition on admission: Bowels not moved for five days. Feet and legs œdematous. Os slightly dilated. Subsequent course: Ten hours after admission patient had a fit. Urine scanty, loaded with albumin; contained blood. Fits continued at intervals of about one and a half hours for seven hours (five fits). After the first three patient was conscious; after the fourth she did not regain consciousness. After the fifth she suddenly changed, became ashen in colour, extremities cold (and apparently in dying condition). She was delivered an hour after the fifth fit of stillborn child. Two hours after delivery she had a slight fit, only twitching on right side. She now became comatose, with apparent paralysis of left arm and leg. She continued much the same all this day. Next day the temperature rose to 106° F., pulse rapid and weak, and she died comatose. Urine was suppressed last 48 hours. Treatment: (1) Enema saponis; (2) bromide of potassium (½ drachm), chloral (15 grains); (3) hot packs, two in succession; (4) chloral (15 grains per rectum); (5) saline injection per rectum; (6) chloroform. Necropsy: Hæmorrhage into ventricles and right corpus striatum. Lungs slightly œdematous. Kidneys congested.

CASE 14.—Admitted Sept. 11th, 1910. Aged 20; married; primipara. Fits began two and a half hours before admission, during which time she had seven. Condition on admission: Semi-comatose and as if recovering from a fit. Feet, legs, and lower abdomen swollen and œdematous. Slightly dilated os. Face cyanosed. Temperature 99° F.; pulse rapid, high tension. Urine loaded with albumin. Subsequent course: An hour after admission patient had a severe fit, and an hour later a second. With treatment she had recovered markedly and became conscious but dull. Continued so for about three hours, when she had a very severe fit. Never again became conscious. An hour and a half later she had another fit, became cyanosed, with later very difficult respiration, and died in five minutes, before time was given to empty the uterus. Treatment: (1) Hot pack; (2) morphia (¼ grain); (3) bromide of potassium (24 grains); (4) mustard cloths to calves; (5) hot pack repeated; (6) pilocarpine (⅛ grain hypodermically); (7) bromide of potassium (1 drachm per rectum); (8) digitalin 1/100 grain hypodermically); inhalation of chloroform. Necropsy: Intense congestion of surface veins of brain. Excess of fluid over motor areas. Other organs apparently healthy.

CASE 15.—Admitted June 19th, 1901. Aged 31; single; II.-para. Very anæmic and debilitated. Normal delivery; child premature. Fits began five hours after delivery. Treatment: (1) Enema saponis; (2) chloral hydrate (1 drachm per rectum); (3) brandy. Recovery.

CASE 16.—Admitted May 21st, 1903. Aged 28; single; primipara. Fits began seven hours before admission. Condition on admission: Unconscious. Urine almost suppressed and contained abundant blood and albumin. Subsequent progress: Continued unconscious after admission for two days. Delivery took place two hours after admission. During this time she had nine fits. Child stillborn. Treatment: (1) Morphia (¼ grain hypodermically); (2) oxygen frequently by inhalation; (3) pulv. jalapæ co. (1 drachm); (4) enema; (5) ether (15 minims hypodermically two-hourly); (6) cupping over loins. Progress: As stated above, patient remained unconscious for two days after delivery, then showed marked recovery. Died from syncope five days after delivery.

CASE 17.—Admitted Oct. 12th, 1901. Aged 16; single; primipara. Progress: Child born three hours after admission. Presentation transverse. Chloroform administered and version performed. Child full term—stillborn. Before delivery patient had three fits. After delivery fits occurred every half hour for eight hours, patient remaining unconscious between them. Albuminuria. Treatment: (1) Potassium bromide (12 grains), chloral (15 grains, three hourly); (2) oxygen inhalation; (3) soap and water enema; (4) nutrient enemata; (5) ice-cap; (6) morphia (¼ grain hypodermically, four hourly); (7) calomel (⅛ grain on tongue every hour). Progress: 12 hours after delivery patient regained consciousness. After this uninterrupted recovery.

CASE 18.—Admitted April 13th, 1902. Aged 29; married; primipara. Had had fits for three days before admission and had been unconscious for 16 hours. Delivered naturally three hours after admission. Twenty minutes after delivery had a fit and became comatose. Urine loaded with albumin. Treatment: (1) Morphia (⅛ grain hypodermically); (2) potassium bromide (1 drachm per rectum); (3) rectal feeding. Progress: After delivery patient became comatose. Temperature rose gradually during next 24 hours to 103·8° F., when patient died.

CASE 19.—Admitted Dec. 17th, 1909. Aged 15; primipara; single. Delivered of a male child five hours before admission. Had one fit previous to confinement and five after; labour natural. On admission patient was unconscious and cyanosed. Urine: 10 ounces were drawn off; traces of albumin. Perineum lacerated. Treatment: (1) Hot pack; (2) mist. magnesii sulphatis; (3) croton oil (2 minims); (4) hypodermic morphia (3 minims, to be repeated in three hours if fits continue); (5) ½ pint hot saline per rectum; (6) bromide of potassium (24 grains four hourly); (7) tr. opii (10 minims four hourly); (8) saline (1 pint four hourly per rectum till attack diminish); (9) sinapisms to legs and feet; (10) ice cap to head. Result: Well on Dec. 29th.

CASE 20.—Admitted Feb. 19th, 1909. Aged 21; single; primipara. Taken suddenly ill at 5 P.M. Had nine fits in the hour before admission to hospital, and one after admission. Unconscious all the evening. Os dilated; girl born by forceps at 10 P.M. Baby normal, 6 pounds 4 ounces. Temperature rose to 103·4° F., and pneumonia set in from which patient died on Feb. 28th. Urine scanty and loaded with albumin; only one ounce of urine in bladder on admission. As fits ceased on admission attention was directed to the chest.

CASE 21.—Admitted July 26th, 1903. Aged 21; primipara; single. Confined at 2 o'clock the morning of admission. Was well till 7 o'clock when she complained of severe headache. At 8 A.M. friends saw her in a fit which lasted a few minutes and recurred at intervals of 20 to 30 minutes till her admission to hospital at 3 P.M. Patient was unconscious then, and had fits at 3.30, 4, and 4.30. She was unconscious till 8 P.M., when she regained consciousness but appeared dazed. From 4.30 to 8 P.M. rather restless, trying to get out of bed. At 8.30 P.M. fell asleep and slept till 12 o'clock when she became very restless and unmanageable and had to be towelled. After this she slept. Next morning she was much better. Urine 1018; albumin ¼. Treatment: Chloral and bromide, pilocarpine, enema aperient, milk diet. Patient febrile and restless for a few days, albumin becoming less and less, and disappearing on August 12th. Patient discharged well on the 22nd.

CASE 22.—Admitted Oct. 7th, 1907. Aged 22; primipara; single. Admitted at 3 o'clock in the afternoon, having been confined naturally that morning at 4 o'clock of a healthy child. At 11 o'clock she began to have fits and had seven up to the time of coming to hospital. After admission she had 11 in six hours. The face was much cyanosed and breathing stertorous between the fits. Urine scanty and loaded with albumin. Treatment: Venesection to 12 ounces; saline injections per rectum; bromides; morphia; hot packs. Patient died 1.15 P.M. on the 8th.

CASE 23.—Admitted April 13th, 1909. Aged 29; married; primipara. Patient's friends found her unconscious on the floor of her bedroom and brought her to the hospital. They said she had been suffering from headaches for several days before. On admission she was unconscious and cyanosed. Had a fit every hour for five hours. Urine drawn off (3 ounces) was loaded with albumin. In the evening labour commenced; os dilated naturally and child delivered by forceps. Fits had ceased before delivery. Treatment generally: Hot packs, enema saponis, oxygen inhalation, chloral (30 grains per rectum), stupes to chest, saline rectal injections, morphia, hot drinks, mist. magnesii sulphatis, ergotin for subinvolution. Result: Patient was discharged well on June 15th.

CASE 24.—Admitted Oct. 6th, 1899. Aged 20; single; primipara. Delivered naturally. Eclampsia set in on the eighth day of the puerperium. Urine was of specific gravity 1040 and loaded with albumin. Fits only lasted two hours; no œdema. Treatment: Poultices over the loins, salines internally, pulv. jalapæ co. Recovery was as rapid as the onset and the patient was discharged on Nov. 6th, cured.

CASE 25.—Admitted June 22nd, 1910, at 11 P.M. Aged 21; single; primipara. Condition on admission: Legs and ankles œdematous; face swollen. Urine contained moderate quantity of albumin. Had twitchings of arms and face, with vomiting. Subsequent course: Twelve hours after admission patient was delivered naturally of mature infant. Albumin gradually lessened and 11 days later had completely disappeared. No other complications. Convulsive twitchings ceased after delivery; no treatment necessary. Patient discharged on July 8th quite well.

CASE 26.—Patient, aged 32, was admitted to surgical wards Sept. 12th, 1910. Completely unconscious and with persistent twitching in right arm and hand. She was V.-para and was confined ten days before admission. The previous day she began to have fits which were diagnosed as eclamptic. The convulsions were sometimes on the right side and sometimes on the left. She became unconscious gradually, which deepened into coma before admission. When she came under observation the urine contained albumin and the twitching was entirely confined to the right arm and hand. In the afternoon of the 12th I trephined over the left motor area and found a collection of bloody serum (1 drachm) in a small, shallow, bowl-shaped depression of the convolutions beneath the arachnoid. This was let out, when the brain beneath was found to be dark-red in colour. The depression was drained and the wound closed. She had one slight attack of twitching in the evening, but none after. She never, however, recovered consciousness and died in 24 hours, the temperature rising gradually to 104·8° F. at the time of death.

A post-mortem examination showed the seat of the operation [wound quite aseptic and so was the brain. There was considerable congestion of the lungs; the uterus was healthy, but the brain in both motor areas was the seat of effusion of blood that permeated the whole thickness of the convolutions and involved the left side more deeply than the right. The vessels, especially the veins on the surface of the brain, were gorged full of blood.

CASE 27.—Patient, aged 22, primipara, single; admitted on June 29th, 1880; died on July 2nd. Cause of death coma after eclampsia. Infant died on July 6th from debility.

CASE 28.—Patient, aged 21, primipara, single; admitted on Jan. 13th, 1882; delivered naturally on Jan. 14th, male child. Eclampsia during labour and the day after. Discharged cured on Jan. 28th.

CASE 29.—Patient, aged 19, primipara, single, was admitted on March 2nd, 1882; delivered naturally on March 6th of a female child who lived for five days. Mother suffered from eclampsia and was treated by chloral, having 20 draughts of that drug in the 84 hours during which she had the fits. Recovered completely.

CASE 30.—Patient, aged 24, III.-para, was admitted on Feb. 23rd, 1886; delivered naturally 15 minutes after admission of a male child. Eclampsia occurred, and was treated by baths and chloral. Recovered quickly and completely.

CASE 31.—Patient, aged 31, V.-para, was admitted on May 28th, 1893. She was delivered next day, breech presentation, of a macerated fœtus; eclampsia during third stage; labour assisted; post-partum hæmorhage. Rapid and complete recovery; ergot, chloral, &c.

CASE 32.—Patient, aged 19, primipara, single, was admitted on Jan. 10th, 1895; delivered naturally five hours after admission. Eclampsia after; choral, poultices to loins, &c. Recovery rapid and uninterrupted.

CASE 33.—Patient, aged 22, single, primipara, was admitted on April 23rd, 1897; delivered naturally 4½ hours after. Eclampsia at end of labour. Temperature rose to 99° F. Recovered rapidly and easily.

CASE 34.—Patient, aged 19, primipara, single, was admitted on

Jan. 13th, 1888; delivered naturally 7 hours after of a male, stillborn. Uræmic convulsions for several hours. Chloral. Recovery excellent.

CASE 35.—Patient, aged 22, primipara, was admitted on June 21st, 1888; delivered naturally on the 22nd of a male child. Eclampsia with albuminuria post partum. Sent to general wards, where a rapid recovery resulted.

CASES 36 AND 37.—Two cases are tabulated in 1887 as having suffered from eclampsia; both recovered, but no particulars can be found.

CASE 38.—In 1882 a death from puerperal convulsions is reported on the third day; no details to be found.

CASE 39. *A supposed eclamptic.*—Patient, aged 20, primipara, single, was admitted to the lying-in wards on the morning of Oct. 21st, 1886, with convulsive seizures of a general kind, but without œdema or albuminuria. In the evening she had become unconscious, but the child was alive. Temperature over 101° F. Patient had been observed to be stupid and queer for a few days, getting up at night and drinking out of the water-jug, but no one thought much of it. When I saw her in the evening she was quite unconscious, the baby being still alive. The os was not dilated, labour not having commenced. Without requiring any anæsthetic the uterus was opened through the abdomen, and a living child extracted. The woman never moved during the operation and died soon after. A post-mortem examination revealed suppurative meningitis; a layer of yellow pus a quarter of an inch thick covered the whole encephalon. The child was adopted.

From a study of the notes of the cases recorded above, which were kindly collated for me by my house surgeon, Dr. William Messer, it will be seen that 30 were primiparæ and 5 multiparæ (I.–V.-para), 3 being unknown. The patients were married in 9 instances and single in 26, with 3 unknown. In 4 cases the urine contained only a trace of albumin, and 2 of these proved fatal. In one of these fatal cases the urine was scanty, but in the other no mention is made of the quantity. In the third case of scanty albumin it is recorded that the quantity was abundant. This patient recovered, and so did the fourth. The quantity of albumin has no direct relation to the gravity of the case, but the quantity of the urine has a very close inverse relation with the seriousness of the disease. In all the other cases the amount of albumin has been considerable; in many the urine was loaded. In one case the urine was sanguineous.

*Onset of attacks.*—In 5 cases the fits began before parturition set in; in 5 cases during the first stage of labour; in 6 cases during the second stage; in 1 case in the third stage; in 15 cases the attacks began post-partum, and in 1 case we have no clue to the time of onset. Of the post-partum onset the times varied from a few minutes after the termination of labour to as much as eight days after. In only 5 cases did the fits cease on delivery, and in one of these the fits had ceased before delivery.

If we take into consideration the great number of cases (15) where the fits began post-partum and add to them the large number where the attacks continued after delivery took place, it does not seem as if the presence of the child in the uterus had so much influence on the course of the disease as is supposed. We will revert to this question again in considering treatment.

*Mortality.*—Of the 38 cases recorded above the mortality was 34·2 per cent. The disease seems with us to be very largely on the increase, and the mortality has increased very much in proportion. For instance, during the 20 years 1880–99 inclusive we have on record only 12 cases that came into the lying-in wards, with a mortality of 2, or 16·6 per cent. During the years 1900—Oct. 15th, 1910 we have had 26 cases, with a mortality of 11, or exactly 42·3 per cent., over twice the total number and nearly three times the mortality. During the 20 years the 12 eclamptics occurred amongst 5978 obstetric cases, or an incidence of 1 in 498. During the 10–11 years the 26 cases occurred amongst 4055 cases, or an incidence of 1 in 156.

Is this increased frequency of the disease due to an increased sensitiveness of the nervous system in the young girls whom the disease most frequently attacks, or is it due to increased frequency of albuminuria? Until I made up the statistics of albuminuria in all the admissions for the past five years I had no idea that albuminuria was so common amongst the patients generally. We have no statistics during the first 20 years, when eclampsia was infrequent, to show whether albuminuria was less common amongst the bulk of obstetric patients then than it is now. Examination of all urines since 1906 showed the presence of albumin in 57 cases out of 2099, or 1 in 36·9. Eclampsia actually occurred in 15 cases during the same years, and if we add these to the 57 œdematous and albuminuric cases we have 72 cases liable to eclampsia amongst 2099 deliveries. The actual and potential eclampsias in 1906 were 10; in 1907, 12; in 1908, 5; in 1909, 15; and for 10 months of 1910, 23. The actual eclampsias in the same years were 2, 2, 1, 5, and 4 respectively. We may, therefore, congratulate ourselves that things were not very much worse, but such numbers of albuminuric and œdematous cases add tremendously to the anxieties of those in charge of the lying-in wards.

*Treatment adopted.*—A perusal of the brief notes of the cases in which the treatment is recorded will show the methods of treatment generally adopted.

The hastening of delivery was adopted in only 7 cases. In 5 cases forceps were used, and one of these was suffering from pneumonia at the time and died from that disease. In one case artificial dilatation of the os and version effected the delivery of a decomposed fœtus. The mother died suddenly a few hours later with a cardiac clot. Another transverse case recovered after delivery by version.

The delivery was natural in 29 cases. In one case labour had not really commenced, and the patient was so much better after admission that operative treatment was postponed. Some sudden severe attacks carried her off before the surgeon could be communicated with. The vessels of the encephalon were intensely congested and much fluid was found in the subarachnoid.

In the 28 natural deliveries one had recovered and was three days well, when she became listless and apathetic and died from asthenia. No necropsy was made. A second case was delivered of twins and had most severe attacks post partum; venesection and salines failed to relieve. A third died from œdema of the lungs, as verified post mortem, a disease that affects ordinary epileptics. A fourth died from apoplexy, with hæmorrhage into the ventricles and into the right corpus striatum. A fifth case had recovered completely and died from syncope 5 days after delivery. A sixth case had fits three days before admission. The temperature after delivery suddenly rose to 103·8°, and the patient became comatose and died rapidly. No post-mortem examination could be obtained. A seventh case had post-partum attacks. Venesection was performed, but the patient died. An eighth case had hæmorrhages into the grey matter of the motor area of both sides of the encephalon.

Two deaths occurred in 7 cases of operative emptying of the uterus, or 28·5 per cent.; and 9 deaths in 29 cases where nature was not interfered with, or 31 per cent. If we take the circumstances of the cases into consideration I think it will be conceded that very little difference can be made between the result of the two methods of treatment, and a study of the cases will show that the presence of the child in the uterus does not seem to have much influence either on the onset, the cessation, or the continuance of the fits.

Routine treatment consisted of *purgatives*, such as jalap, magnesium sulphate, calomel, and croton oil. *Diaphoretics.* Blanket bath, hot packs, pilocarpine, hot poultices over kidneys, saline diuretics, hot drinks. *Nerve sedatives:* Bromides, morphia, chloral in varied doses; fomentations to loin, dry cupping over kidneys, venesection of arm, ice to head and thyroid powder, chloroform and oxygen inhalations. Of these the bromides, morphia, and chloral are tried friends that have been freely used. The only drawback to their liberal use is the reflection that in case of failure the death may have been due to excess of medication. Fomentations to the loin, dry cupping, blanket baths, and hot packs are useful and always harmless. Pilocarpine is, I think, of great value. Thyroid was used in one case, but she was recovering when it was given, and we have no statistics of a sufficient series of cases of all kinds treated by this drug to show its real value. Venesection failed in the two cases in which it was adopted and seemed to hasten the end. Saline injections, either into the rectum or the subcutaneous tissues, are both of great value. Rectal salines, in conjunction with oxygen inhalations, have produced some startling improvements in many of our cases.

We will not here enter upon the pathology of eclampsia, but we think there is no doubt that in that disease there is intense congestion of the cerebral vessels and effusion of serum or of serum and blood over the cerebral convolutions, and sometimes rupture of cerebral blood-vessels. All of these incidents are well illustrated in the above cases. Case 39 is interesting for its simulation of eclampsia.

Liverpool.

# THE RÔLE OF AUTO-INOCULATION IN MEDICINE:

## A PLEA FOR ITS RATIONAL EXTENSION.[1]

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MY thesis readily divides itself into two arguments, which may be briefly stated as follows: Firstly, that a form of vaccine-therapy has long been applied, unconsciously but successfully, by physicians in their treatment of infective processes in the body. Secondly, that the success attending this practice might be increased if it were developed into a conscious aim under the guidance of recent knowledge of the subject of treatment by vaccines.

### PART I.—*Empirical Treatment of Infective Diseases an Example of Vaccine-therapy.*

You will remember how gratified, as well as surprised, was M. Jourdain in Molière's comedy when it was discovered to him that for 40 years, unknown to himself, he had been talking "prose." When, however, it was pointed out to the medical profession that they had been practising the art of vaccine-therapy for generations, not knowing what they did, the initial surprise was followed, perhaps, by a feeling of annoyance. It was annoying to see how far empiricism had outstepped rational medicine and to find so late in the day an explanation of the success which had certainly followed the poulticings and fomentings of the past. M. Jourdain soon proved that the prose he had used for so long in ignorance was good prose, and the science of the *maître de philosophie* failed to improve upon it. So far the same might be said for medical practice—the fomentation is a good remedy, but a knowledge of the principles which govern its action does not appear at present to have improved its application. It is to be hoped, however, that a different experience to M. Jourdain's is to follow, and that recent knowledge will now enable rational medicine to steal a march on empiricism.

Up to the present the local application of heat by poultices and fomentations has stood as the example of "empirical vaccine-therapy." To these might be added numerous other homely, and sometimes barbarous, remedies directed to the same end, such as the sucking of infected wounds, and the dressing of these with hypertonics and irritants, such as salt and pepper. All these remedies reinforced nature's method of meeting infection by an increased blood-supply to the offended part. But it is my object to show that the unconscious augmentation of irrigation and auto-inoculation did not stop with these simple remedies, but that the physician has held in his hands the weapons of the vaccine-therapist from time immemorial, and has, indeed, used them, too, with no inconsiderable success.

Nature was the earliest "vaccine-therapist." The processes by which infections are naturally overcome in the body form the basis on which the science of vaccine-therapy is being built up. As soon as the invader "lands" in a tissue there is a call for more blood, blood plasma acts on the microbe and its toxins, destroying them both by chemical processes (oxidation, hydration, dehydration, &c.) and by the action of specific antibodies, and leucocytes rush out to ingest the foe. If this proves insufficient further antibodies are formed in response to the toxins carried over the body in the blood stream, and the resistance of the plasma bathing the lesion is thereby raised.

We thus have two natural processes to study and imitate: 1. "*Irrigation*" of the infected area with plasma and leucocytes, and this by itself may be enough to cure a mild invasion. 2. *Auto-inoculation*, or the washing of the bacterial products into the blood stream to stimulate in the tissues the formation of antibodies specific to the invading micro-organism. These are the processes (other than the injection of vaccines) which the physician can direct with success, and it is this "natural vaccine-therapy" that was exploited with success in the time-honoured practice of applying heat (poultices, &c.) to an inflamed area. By this means not only was irrigation assisted, but such irrigation, itself of value, necessarily led to an increase of that auto-inoculation on which the improved resistance of the body depends. Such an effect is obvious so far as the poultice is concerned, but it is not so obvious, and it is my purpose to point out, how also the drug treatment of infective diseases may have depended for its success, so far as it has been successful, on a similar encouragement of these processes of "irrigation" and "auto-inoculation."

My contention will best be brought before you by its application to familiar examples. Let us consider infections of mucous membranes, and, in this connexion, turn to bronchitis, where there is general agreement as to the means to be employed.

*Bronchitis.*—It will not be disputed that the classical treatment of bronchial infections, though the outcome of empiricism, is, where thoroughly carried through, highly successful. It consists, shortly, in the giving of the so-called "depressant expectorants" till secretion is abundant, and then changing to the "stimulating expectorants," with perhaps, later on, certain of the balsams or volatile oils. This treatment is based on our experience that abundant exudation is necessary for cure. Abundant exudation implies either plus infection or adequate response, and the relative amount of these two factors in any given case demonstrates itself by the course which the disease takes.

If, now, we inquire into the pharmacological action of the "depressant expectorants," of emetine, of salts of antimony, of apomorphine, of the iodides, what do we find? We find that all these drugs cause a watery exudation through the bronchial mucous membrane. Emetine, antimony, and apomorphine are emetics, the two first through their irritant action on the gastric mucous membrane, the last by its action on the nervous centres in the medulla. Now, profuse secretion from the mucous surface of nose, pharynx, and bronchi is a constant by-product of the act of vomiting, as is also an increase in the sweat, tears, and saliva. But a similar effect is produced, though to a less extent, by subemetic doses of these drugs, and in this manner they become reliable expectorants. When we turn to the iodides we find a different pharmacological action; these substances are excreted through the bronchial and other mucous membranes and cause a watery flow by their local action. In some cases iodine itself is liberated, leading to the more striking irritant effects generally known as "iodism."

Thus it appears that these drugs, the classical standby in bronchitis with scanty exudation, though their mode of action varies, all lead to one result—namely, the bathing of the infected mucous membrane in a protective muco-serum, or, in other words, increased "irrigation." Given a sufficient blood-supply, they cause a rush of fluid through the newly formed mucous cells and glands on to the surface, imitating in an inaccessible area the osmosis we can so successfully obtain in a dry sinus by the local application of hypertonic solutions. Have we not here, also, an explanation of the value of emetics pushed to vomiting point in cases of bronchitis? That the removal of secretion by vomiting is not the sole gain by the administration of these large doses is shown by the benefit occasionally obtained from their use even when vomiting does not occur. Surely the increased flooding of the mucous membrane with healing serum is no small element in this favourable result.

At a later stage of catarrh, or in chronic bronchitis, the blood-supply to the mucous membrane may also be in default. This depends on the general blood pressure, which is generally raised above the normal in chronic bronchitis, perhaps as a compensatory measure. Now are used the "stimulating expectorants," squill and its congeners and ammonium carbonate. These also, like the depressant expectorants, are gastro-intestinal irritants and emetic in full doses, and in virtue of this action increase the secretion from the bronchial mucous membrane. At the same time they raise the general blood pressure by their action as vaso-motor and cardiac tonics, and hence increase the blood-supply to the bronchial tubes by both systemic and pulmonary blood channels.

Thus, again, by our treatment, we are "irrigating" the diseased area, supplying blood serum and perhaps leucocytes to the infected site in imitation of the natural process. When this is considered complete, we attempt to coax the mucous membrane back to conditions of healthy secretion by such mild astringents and stimulants as the volatile oils (copaiba, cubebs, eucalyptus, &c.) and terebinthinates (terebene, &c.).

[1] A paper read before the Therapeutical and Pharmacological Section of the Royal Society of Medicine on Jan. 17th, 1911.

It must be borne in mind, of course, that the peculiar position of the bronchial mucous membrane demands recognition also of a mechanism for the expulsion of secretion, in addition to the repulse of the invader, and to aid this mechanical action the use of drugs acting on the respiratory centre, such as ammonia and strychnine, is sometimes called for.

It will be remarked that most of the drugs we have mentioned are in request for other purposes besides that of expectorants, and it is interesting to note that in their other uses also their action might be interpreted as mainly one of "irrigation." In stomach catarrh we recognise the advantage of an emetic, though we do not always dare subject our patient, unless a child, to so unpleasant a remedy. We talk in this connexion of "emptying the stomach," but may not the most important result achieved be the "irrigation" of the stomach wall which is a necessary accompaniment of emetic action? The efficiency of ipecacuanha in dysentery, and its value in small doses in some catarrhal conditions of the gastro-intestinal tract clearly point to its known action as an "irrigator" of the diseased mucous membrane. Again, the terebinthinates and such volatile oils as copaiba and cubebs have had a recognised province in the treatment of infections of the urinary tract. Such an effect has been shown to have no clear dependence on antiseptic action, and is it not likely that their value has really depended on their irritant properties, or, in other words, on the "irrigation" they have caused? Examples might be multiplied, but I do not wish to waste your time or add to my own responsibility by wandering over too wide a field.

PART II.—*The Advances on Empirical Treatment suggested by a Consideration of the Principles of Vaccine-therapy.*

Now in all the examples we have considered the influence of the physician has been solely in the direction of irresponsible "irrigation." But Nature's armamentarium contains, in addition, the weapon "auto-inoculation," a weapon to be brought into use where "irrigation" alone has failed. The physician has neglected this weapon; he has been an "irrigator" pure and simple, whether with his poultice or in the drug treatment of bronchitis and other infective diseases. To be sure, auto-inoculation has necessarily occurred as the result of his irrigation, but has he directed it? Has he applied his fomentations at such intervals that time may be allowed between for the formation of antibodies? Has he calculated at what intervals he should auto-inoculate his phthisis cases to maintain most successfully their toxin immunity? Has he sufficiently calculated the dangers of hyper-inoculation and a "negative phase"? As a rule he has done none of these things, and it is with the hope of directing attention to the neglect of auto-inoculation in medicine that the present paper is presented to you.

It is hardly necessary in these days to indicate the lines on which the vaccine-therapist works; one must presume that the phases of a vaccination experiment are familiar to all. Suffice it to remind that a sufficient interval must be left between every two inoculations for the "negative phase" of immunity to be passed and a "positive phase" achieved.

It is obvious that the "auto-inoculator" has but one way of achieving his purpose, he can inoculate only *by increasing the blood-supply to the diseased focus*. But by doing so he also "irrigates," so that one act must serve these two purposes, though different considerations govern the indications for "irrigation" and "auto-inoculation." For "auto-inoculation" purposes the act should be *periodic*, to allow time for the formation of antibodies and to avoid negative phases, while for purposes of "irrigation" the more continuous the flow the better. A happy union of these two aims may best be achieved by a strong "auto-inoculation" at certain intervals, and a fair amount of "irrigation" (with, of course, some amount of unavoidable auto-inoculation) maintained between.

Auto-inoculation is open to one disadvantage of a more or less serious nature—namely, the fact that we must auto-inoculate into the blood stream instead of into the tissues. It is, of course, well known that toxin immunity (exemplified in the preparation of antitoxin) is better achieved by subcutaneous than by intravenous injections, and the evidence generally seems to show that the most active formation of bacterial antibodies takes place in the tissues. Bacterial products must necessarily be greatly diluted in the blood stream, and when they reach the tissues by this path are not so fitted to call forth a response as they would be if injected subcutaneously. Nevertheless, this apparent disadvantage accompanies all natural methods of cure, and by auto-inoculation we are but imitating Nature's mechanism. It may be that the tissues conjoining the diseased focus play a large part in this "antibody" formation, but, at any rate, we need hardly fear to follow Nature's lead.

It may be said that every method of treatment suffers certain disadvantages and limitations. Those of the artificial injection of vaccines may be briefly stated as follows:—1. The nature of the causative microbe may be impossible to determine; it may be out of reach and general opsonic tests may be doubtful or misleading. 2. The microbe, though its nature is determined, may be impossible to cultivate outside the body, as may happen in the case of certain strains of influenza bacillus. 3. Many microbes may be at work, and it may be doubtful how far each one is responsible. 4. There is, of necessity, a certain loss of time while the micro-organism is being found and a vaccine prepared.

The use of "auto-inoculation," on the other hand, suffers none of these disadvantages, but shows, to be sure, certain weak points of its own. The following may be cited:—

1. The dose given by auto-inoculation can never be so accurate as where subcutaneous injection is employed. Nevertheless, with a skilled appreciation of the nature of the infection and the response of the individual, the dose can usually be fairly accurately gauged, and readily confirmed by experiment. It may be remarked, in this connexion, that even to "direct" vaccination the dose is to a considerable extent experimental, both the toxicity of the particular strain of organism (which varies greatly) and the reactive power of the patient having to be taken into account.

2. The fact, already mentioned, that auto-inoculation occurs into the blood stream instead of into the tissues.

3. The possibility of doing harm: (*a*) Where in an organ like the kidney with a firm capsule "irrigation" is limited by space, and an increased blood-supply might lead to stasis with suppression of urine and death. (*b*) By the washing out of germs into the blood stream and so generalising a disease; this is seldom, perhaps, a serious consideration, except in the case of tuberculosis, where manipulation of an abdominal tuberculosis (never to be recommended) might lead to such a result. It is obvious that those dangers are not those of the method, but of its abuse in the hands of the careless or ignorant.

4. Localised disease may be so localised that insufficient auto-inoculation may be producible for its cure. Such localisation, on the other hand, may be a bar to successful treatment by the subcutaneous injection of vaccines also, unless special measures for increased irrigation are carried into effect.

It is obvious from a consideration of the weak points belonging to "direct vaccination" and "auto-inoculation" respectively that their provinces do not overlap, that each has its special field of operations, and that they are in a large measure complementary the one of the other. Where disease is mild and recent a control of natural methods should prove sufficient; where infective conditions are unduly prolonged artificial "irrigation" and "auto-inoculation" will cut them short. In chronic conditions, where the disease is within reach of the blood-supply, the same measures should be successful in many cases.

In certain conditions it is obvious that the "direct" injection of vaccines is best. In very localised lesions, boils, or tuberculosis of surface structures, it is readily and successfully employed. In chronic septicæmias it offers the only chance of success, since this must depend on getting the bacterial products into the tissues. In conditions between these extremes there remain many and various infections where auto-inoculation and direct vaccination must strive for the mastery, with some triumphs, I would predict, for the former in the hands of an ingenious "auto-inoculator."

I have pointed out in what manner the time-honoured medical treatment of certain infective diseases falls into line with modern conceptions of natural methods of cure. I now propose to consider what modifications and amplifications of such treatment our recent knowledge of vaccine-therapy suggests.

*Bronchitis.*—To turn once again to examples already given, we found that in bronchitis our attention has been directed too exclusively to "irrigation," and that even here

we have not always known when to stop. In acute and subacute infections of the bronchial mucous membrane "irrigation" is probably all we need consider, and the main point is to see that the flow of serum through the mucous membrane is continued long enough to destroy all the invading germs.

It is where bronchitis tends to become chronic or where repeated catarrhs occur that a conception of the principles of vaccine-therapy may enable us to add "auto-inoculation" to "irrigation" with a more reasonable expectation of success. In either case it appears that the invader has found a secure habitation in the mucous membrane, and the amount of exudation poured out (even where this is considerable) is only sufficient to hold him at bay. Now our means of getting rid of him are two-fold: (1) raising the protective power of the blood by auto-inoculation; and (2) by irrigating the focus in a thorough manner with this plasma of raised power. To auto-inoculate we must irrigate powerfully and that at suitable intervals. Since we do not know the micro-organism with which we are fighting, it behoves us to strike such intervals as are generally suitable, since the inoculation curve does not vary much in length where different organisms are concerned. Once a week where auto-inoculation is large, or twice a week where small, will probably be most suitable, and we may now consider the means at our disposal.

We appear to have at least three means of strongly "irrigating" the bronchial mucous membrane.

1. *By increasing negative pressure in the bronchi* during inspiration a passive congestion of the mucous membrane will be produced, and this may be brought about by the use of a Kuhne's mask or by inspiring rarefied air in the pneumatic cabinet. This may be applied once or twice weekly, but it must be remembered that the mucous membrane may be filled with blood, and yet secretion may be inadequate. For this reason depressant expectorants and perhaps alkalies should be pushed for an interval preceding this treatment, and also given in smaller doses between, to ensure sufficient irrigation in the intervals between each auto-inoculation. To relieve congestion remaining after use of the mask the circulation might be relieved by deep costal respirations. At the same time, counter-irritation of the chest wall and warm air will tend to relieve any passive congestion remaining.

2. *By the use of vapours which are irritant to the bronchial mucous membrane* and so tend to cause an increase of secretion through it. For this purpose creasote and the cresols contained in various preparations may be used, evaporated by heat in a small chamber in which the patient sits, the treatment being preceded with advantage by a short course of depressant expectorants. By this means a considerable temporary irrigation of the diseased area is accomplished, and leads to an auto-inoculation which, applied at the right intervals, should increase the antibodies in the patient's plasma. Here we have, perhaps, an explanation of the action of creasote vapour in bronchiectasis, and of the milder cresols in recurring catarrhs. Do not these act primarily as "irrigators" and "auto-inoculators," their antiseptic action, so greatly lauded, being of quite secondary and insignificant importance?

3. The third method of strong irrigation and auto-inoculation, applicable to bronchitis in children only, is by the weekly or bi-weekly exhibition of emetics till vomiting is produced.

When should we apply these means of auto-inoculation in bronchitis? In recurrent catarrhs they might be used at intervals between the attacks to raise the resistance and destroy the infecting organism. In chronic bronchitis or in bronchitis becoming chronic they should be used just as injections of vaccines are used, at suitable intervals till success is achieved or despaired of.

In cases of chronic bronchitis with freedom during the summer months an attempt might be made during this interval to dislodge the invader at the time when its hold on the mucous membrane was least secure.

Among the three methods here suggested for obtaining auto-inoculation in bronchitis my personal experience is confined to the use of the second only. Some practical success achieved by this means has encouraged me to add to the purely theoretical considerations of my paper these suggestions for their practical application to the treatment of this one variety of infective disease.

It will be readily perceived that the scope of the methods advocated is not bounded by the few examples for convenience considered here. To microbic infections of all regions the same rational means apply, though it is obvious that anatomical and other considerations must here and there change or modify their application. Thus in the kidney and in other organs invested with a fibrous capsule it is obvious that irrigation and its accompanying auto-inoculation can be of but limited extent, and an attempt to augment them beyond a certain point could only lead to stasis. Yet the theoretical considerations should not be disregarded, and even in kidney disease may lead us to new views. Thus, we shall be led to look upon albuminuria in cases of kidney infection (not, of course, in albuminuria of other causation), not as a mere loss of nutritives from the blood, but as the sign of a useful vital function—namely, the irrigation of the diseased focus with healing plasma. Thus (except so far as *plus* albumin implies *plus* infection) we can regard the quantity of albumin with equanimity, and see that its increase (perhaps under our own cautious manipulations) in cases subacute and tending to chronicity may be but a step on the road to cure rather than a sign of further tissue damage. If it were not for its capsule, we are tempted to feel, how much might be done for the kidney in conditions of infection! Such a thought necessarily brings the operation of "decapsulation" into our minds, and we are led to see that, at any rate in theory, this was a step in the right direction.

A glance round the field of medical treatment seems to reveal "irrigation" and "auto-inoculation" at the bottom of many successful empirical methods. The cold bath treatment of enteric fever so successfully employed in America, the use of ipecacuanha and of Epsom salts in dysentery, tar and other irritants in skin inflammations, emetics and purgatives in gastro-enteritis, abdominal massage in tubercular peritonitis—may not all these be claimed as instances of "irrigation" and resulting "auto-inoculation"? Lastly, might we not also improve on these methods, successful only in part, by a fuller recognition of this side of their action, and by directing our attention in future to the periodic spacing and control of that auto-inoculation we have for long unconsciously employed?

Queen Anne-street, W.

## CEREBRAL TUMOUR AFFECTING THE UNDER SURFACE OF THE CORPUS CALLOSUM AND FILLING THE RIGHT VENTRICLE.

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THE following case is of interest, on account of the situation of the tumour, and of the great difficulty in localising lesions in the regions affected.

The patient, a man, aged 27 years, consulted me at the Manchester Royal Infirmary on account of "tremor, nervousness, and failing memory." His symptoms had been present for a few months. There had been no headache, no convulsions, no paresis of the limbs, and no disease of the ears. His previous health had been good. There was no history of syphilis, alcoholism, or injury to the head.

On examination, when first seen in May, 1910, there was nothing abnormal to be detected on the external surface. The hands and arms presented a fine tremor, somewhat resembling that of Graves' disease; it was noticed on movement of the arms, but it was not an "intention tremor" like that of disseminated sclerosis; it ceased when the hands were supported on any firm object, but it was well marked when the patient held out his arms and hands in front of him, in the extended position. The tremor did not affect chiefly the hand, as in paralysis agitans, but affected the whole arm, producing a fine movement. It differed also from the tremor of paralysis agitans by ceasing when the hands were supported on any firm object. There was also fine tremor of the tongue and of the lips and facial muscles, when the patient was speaking, or when he was asked to show the teeth. The voice was tremulous, but it had not the "scanning" characters of the speech of disseminated sclerosis, and it had not the slurring character of the speech of general paralysis

of the insane, though it resembled somewhat the speech of the latter disease. He complained of failure of memory, of nervousness, and of inability to do his work on account of his mental failure. But when tested he was able to answer questions quite well, to give dates, and make simple calculations without showing any indications of mental confusion. His friends had never noted any "grand ideas," or delusions, or other signs of insanity. He had slept badly for some weeks, but there had been no headache and no vomiting.

There was no paresis of the limbs, face, or tongue muscles. The knee-jerks were present, there was no ankle clonus, the plantar reflexes were present and of the normal flexor type (when the patient was first examined). There was no ataxia, no spastic gait, or other abnormality in the gait. There was no anæsthesia of any form, and no loss of the stereognostic sense; no affection of bladder, rectum, or vertebral column. Examination of the functions of the cranial nerves showed that there was no loss of smell; the pupils were equal and reacted to light and accommodation, and were quite circular in shape; there were no paresis of the ocular muscles and no nystagmus; the fifth, seventh, eighth, eleventh, and twelfth cranial nerves were not affected. There was no hemianopsia, and though vision was but little affected, ophthalmoscopic examination revealed marked double optic neuritis (with much swelling of the optic discs). The heart, lungs, abdominal organs, and urine were normal.

Until the optic discs were examined the diagnosis was indefinite, and the symptoms—tremor of lips, tongue, and facial muscles, tremor of the hands, tremulous speech, failing memory, and history of mental failure—suggested general paralysis of the insane. But the pupils were equal, quite circular in shape, and reacted normally to light and accommodation; and the speech, though tremulous, had not quite the characters of the speech of general paralysis; the mental changes appeared to be simply those of mental failure; and there was no evidence of previous syphilitic infection. On ophthalmoscopic examination one was surprised to find marked double optic neuritis. This and the history of the case suggested intracranial tumour. But there had been no headache and no vomiting. The localisation of the growth was not evident, but a lesion of the frontal region appeared probable at that time.

The man was admitted as an in-patient, under my care, at the Manchester Royal Infirmary on June 4th. His condition was then much the same as on the first examination; but soon afterwards it was found that there was a well-marked Babinski (extensor type) plantar reflex on *each* side, and also a marked Oppenheim reflex on *each* side (extension of the big toe on stroking firmly the inner side of the leg, along the posterior border of the inner surface of the tibia). No true ankle clonus could be obtained. Both knee-jerks were present. There was no paresis of the legs, and no rigidity of the limbs to passive movements. The abdominal and epigastric reflexes were present, and better marked on the right side than on the left. There was no anæsthesia. No affection of the ocular muscles could be detected. On showing the teeth the left angle of the mouth was not retracted quite so much as the right, but the difference was slight.

The optic neuritis was more marked than on the first examination. The temperature was normal; the pulse was slow (60), but regular.

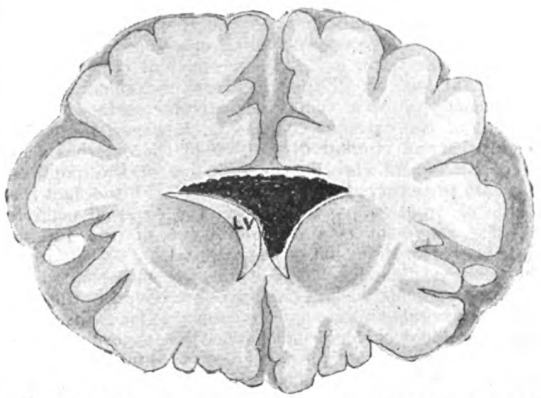
The patient remained very quiet in bed and took little interest in his surroundings. There was no headache at first, but a few days after admission he vomited several times and complained of severe headache. He became drowsy, but when roused could answer questions quite intelligently and could perform all the movements of the limbs which were requested. The drowsiness steadily increased, and for some days he was in a semi-comatose state. Finally, he became quite comatose, and death occurred three weeks after admission.

During the time the patient was in the hospital no paresis of the limbs or ocular muscles developed, and there was only the slight doubtful paresis of the lower part of the left side of the face. The Babinski and Oppenheim reflexes remained well marked on each side, but ankle clonus never developed.

*Necropsy (head only).*—No changes of importance were found on the external surface of the brain, except that the floor of the third ventricle formed a cyst-like projection at the base of the brain. The cerebellum, pons, and medulla were normal. The fourth ventricle was not distended.

On section of the cerebrum a large median tumour was found immediately under the corpus callosum. The growth was dark greyish-red in colour and very soft and vascular. It had invaded almost the whole of the under surface of the corpus callosum, from the anterior to the posterior part, and from side to side. The upper surface of the corpus callosum appeared normal. On section the fibres of the corpus callosum were seen to form simply a thin layer of white matter just above the tumour. The left lateral ventricle was dilated and contained a considerable amount of serous fluid, but the tumour did not invade the left ventricle. The right lateral ventricle was filled with the tumour growth from the anterior to the posterior part, but the outer wall of the ventricle was not invaded by the growth. The white matter of the cerebral hemispheres, the basal ganglia, and the cerebral cortex were not invaded by the tumour. The third ventricle was dilated and contained serous fluid.

The exact starting point of the growth could not be determined, but it appeared to have commenced in the middle line just under the corpus callosum, probably in the velum interpositum. The tumour affected all the structures in the middle line between the corpus callosum and the basal ganglia; it invaded the lower layer of fibres of the corpus callosum, and it filled the right lateral ventricle but did not




Vertical transverse section of brain through anterior part of lateral ventricles. LV=left ventricle. Tumour, deep black.

invade the left ventricle. (See figure.) The tumour was a vascular, round-celled sarcoma.

The diagnosis of tumours in the region of the corpus callosum and lateral ventricles is very difficult and often impossible, and I do not propose to analyse the records previously published in medical literature. I wish simply to report the facts of my case.

The chief clinical features of the case were the following. 1. The fine tremor of the lips, tongue, facial muscles, and of the hands and arms; the tremulous speech and mental impairment; symptoms suggesting general paralysis, but differing in the points already mentioned. 2. The absence of headache and vomiting until the termination of the disease (last two weeks of life). 3. The marked double optic neuritis. 4. The well-marked Babinski and Oppenheim reflexes on *both* sides, without ankle clonus or definite paresis of the limbs.

The presence of the well-marked Babinski and Oppenheim reflexes on *both* sides suggested a median intracranial lesion, and did rouse at one time the suspicion of tumour of the corpus callosum; but it was not felt that this localisation could be made with certainty from the symptoms. I think it probable that in cases of intracranial tumour the presence of *bilateral* Bakinski or Oppenheim reflexes, without ankle clonus or paresis of the limbs, will be found to be a useful indication of a median position of the tumour growth.

The accompanying figure represents a vertical transverse section of the cerebrum through the anterior part of the lateral ventricles and corpus callosum. In sections made posteriorly the growth was much larger.

Manchester.

THE Philosophic Faculty of the University of Marburg has conferred the degree of Doctor (*honoris causâ*) upon Mr. Ernst Leitz of Wetzlar, principal of the firm of E. Leitz, manufacturers of microscopes, microtomes, and photographic lenses.

# SUBLUXATION OF THE KNEE.

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I DESIRE to report two cases of the above injury partly to discuss some points in the established treatment which seem to me illogical, and partly to record an interesting complication of treatment. I shall deal with that form of subluxation of the knee which is associated with injury to the semilunar inter-articular fibro-cartilages. The most common lesion is a detachment of the anterior end of the internal semilunar cartilage. The external cartilage is very rarely injured, and when injury occurs it is usually a transverse splitting of the cartilage. The damage is almost always done by a sudden rotatory movement with the joint in the flexed position.

In studying this condition it will be well to notice certain points in connexion with the structural peculiarities and movements of the joint which are of vast importance in controlling the nature of the injury and clinical signs produced. The main strength of the joint lies, not in its capsule, but in the reinforcement of the capsule by the tendons of muscles surrounding it—e.g., the semimembranosus and popliteus; also in the site and disposition of the crucial ligaments, which cross one another like the limbs of the letter x. This arrangement of the crucial ligaments allows of gliding rotatory movement of the femoral condyles upon the tibial articular surfaces. This movement of the external condyle is, however, limited by the small size and circular disposition of the external semilunar cartilage and also by the insertion of the popliteus tendon into the external condyle, together with the fact that the axis of rotation passes through the external condyle. Thus, the range of rotatory movement of the internal condyle is greater than that of the external.

The semilunar cartilages are connected with the tibia in the following manner. Both cartilages are bound to the tibia at their peripheral surfaces by the coronary ligaments. The external semilunar cartilage is attached by its cornua to the rough surfaces immediately in front of and behind the spine of the tibia, the posterior cornu being strengthened by a band from the posterior crucial ligament. The internal cartilage has its cornua much more widely separated; the posterior horn is attached to the tibia just behind that of the external cartilage and is to some extent held in position by the posterior crucial ligament; the anterior horn is weakly attached to the front of the upper surface of the tibia and is connected to the external semilunar cartilage by a band called the transverse ligament.

Seeing the greater mobility of the internal femoral condyle and the weak attachment of the anterior limb of the internal semilunar cartilage, one can easily explain the great frequency with which the said limb is injured. Situated beneath the fold of synovial membrane which sweeps from the surface of the joint capsule backwards to the crucial ligaments is a pad of fat the function of which is to sink backwards and fill the space formed between the articular surfaces during flexion. Now the lateral extensions of this synovial fold are attached to the anterior extremities of the semilunar cartilages, so that when the anterior part of the internal cartilage is detached from the bone it sinks between the opposing bony surfaces during flexion of the joint, and becomes nipped between them during extension. The above explains the locking which so frequently occurs during this accident.

The movements occurring at the knee are two: (1) The hinge action of flexion and extension; and (2) a combination of rotation and gliding, most marked in the internal subdivision of the joint and occurring only during flexion of the articulation. The "screw-home" action of the joint consists of external rotation of the tibia upon the femur as the first part of the action of flexion, and internal rotation of the tibia as the last part of the act of extension. This enables one to stand upright without using the thigh muscles. During full extension there is no lateral movement in the normal knee-joint; but when the semilunar cartilage is injured lateral movement can be obtained towards the injured side due to removal of the lateral support of the structure.

The clinical signs of cartilage displacement are: (*a*) Pain associated with locking of the joint due to nipping of the displaced cartilage between the femur and tibia when extension is attempted. The pain, which is severe, is due to stretching of the ligaments. (*b*) Synovial effusion, often blood-stained in the first attack, follows the locking and is due to traumatic synovitis. (*c*) In some cases the cartilage may be felt displaced forwards to the inner side of the patella; more frequently a tender spot marks the position of the injury. (*d*) Lateral mobility is possible with the joint in the position of full extension. (*e*) There are usually some muscular wasting and flaccidity of the thigh on the affected side.

The conservative treatment of this injury consists in fixation of the joint in the extended position for a period of about six weeks after replacing the cartilage; this is followed by application of an apparatus of one of two kinds.

1. One consists of lateral irons allowing of hinge action at the level of the joint and fixed to the limb above and below by bands encircling the part. This is applied in the hope of preventing the rotatory movements which cause the injury and displacement of the cartilage. The lower band fixes well upon the leg below the tubercle of the tibia. The upper band is applied to the thigh about three inches above the level of the joint, at which site the femoral shaft is practically cylindrical and has a thick covering of soft structures which, together with the fact that the skin is freely moveable upon the subjacent fatty tissues, I am assured render all hope of preventing rotatory movements (which have been shown to be normal and necessary) absurd.

The following are the measurements of soft structures covering the femoral shaft three inches above the joint in six cases taken consecutively on the post-mortem table:—

| Sex. | Anteriorly. | Internally. | Externally. | Posteriorly. |
|---|---|---|---|---|
| F. | ¾ inch. | 1 inch. | 1 inch. | 1½ inch. |
| F. | ⅞ ,, | 1¾ ,, | 1¾ ,, | 2¾ ,, |
| M. | 1 ,, | 1¼ ,, | ⅝ ,, | 2¼ ,, |
| M. | 1 ,, | ⅞ ,, | ⅝ ,, | 2¼ ,, |
| M. | ⅝ ,, | ¾ ,, | ⅞ ,, | 1¾ ,, |
| F. | ⅝ ,, | ⅝ ,, | ¾ ,, | 1⅜ ,, |

2. The second apparatus is a truss or clip arranged to keep pressure over the site of the anterior end of the internal semilunar cartilage; as I have shown, locking occurs when the cartilage is dragged in by the synovial membrane between the opposed articular surfaces, so that I fail to see what can be gained by applying an apparatus, the aim and object of which are apparently to displace the cartilage backwards and so ensure frequent attacks.

Treatment is then reduced to: (*a*) Fixation of the joint immediately after the injury for about six weeks in the extended position. (*b*) If the above measure fails there remains only the radical method of excising the injured portion of the cartilage. This course is open to the danger of septic infection at the operation; and this is a very real danger, as the synovial membrane of the knee is so complicated, and the joint is usually in the state of traumatic synovitis at the time of operation. These perils should make one especially careful of one's asepsis.

CASE 1.—A woman, aged 23 years. Three years before admission to the hospital the patient was on a step-ladder and in turning to come down the knee became locked; this was followed by swelling. She had a similar attack six weeks before admission. On examination the internal cartilage could be felt displaced forwards and was tender. At the operation the anterior part of the internal semilunar cartilage was found to be torn from its attachment and was removed. Reactionary hæmorrhage occurred into the joint, and on the eighth day the joint was reopened and drained. The patient was discharged from hospital six weeks after operation with good movement. I would account for the small number of attacks in this case by the fact of the cartilage being displaced forwards. The hæmarthrosis which occurred appears not to be a very dangerous complication if promptly treated by irrigation.

CASE 2.—A man, aged 42 years. Five years before admission whilst walking he slipped on a piece of orange-peel and fell; on attempting to rise he found that his right knee was acutely painful and fixed in the semiflexed position. On manipulation "something clicked in the joint," and he was immediately able to use it. The joint remained swollen and slightly painful for ten days. Since that time the patient had had 60 or 70 attacks similar to the first. On examination the muscles around the joint were slightly wasted, and there was a small amount of fluid in the joint; no displaced cartilage could be felt, and there was marked lateral movement in extension. At the operation the internal cartilage was found to be split and detached anteriorly; it was removed. The patient was discharged with perfect movement on the eighteenth day.

I am indebted to the kindness of Mr. W. G. Spencer and Mr. J. M G. Swainson for permission to publish these cases.

Westminster Hospital.

# ATONIC DILATATION OF THE STOMACH.

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THE following clinical work, commenced six years ago and embodying a new method of treatment, has yielded results which, I believe, will prove of interest to the profession.

Atonic dilatation is a condition of the stomach in which there are enfeeblement of its muscular coats and impairment or loss of its motor power, with great enlargement of the organ.

1. *Etiology.*—The most common cause is over-feeding, either a persistent overloading of the stomach, constantly overtaxing its capacity, or the taking of food too frequently, so that a fresh meal is introduced into the stomach before the previous one has had time to leave it. Insufficient mastication and the bolting of lumps of food are also causes, the pylorus closing to prevent the passage of lumps out of the stomach.

2. *Pyloric spasm of reflex origin.*—Under this heading are included the cases in which the primary cause is found not to be located in the stomach, and the atonic condition has yielded to the treatment only after this cause has been eliminated. It should be noted, however, that once atonic dilatation has become completely established, the removal of the primary cause is not always followed by the restoration of the lost motor power of the stomach without special treatment directed to that organ.

(*a*) Appendicitis. Even in the mildest attacks this may produce pyloric spasm, retention, and impairment of the motor power; and, in fact, it is frequently a history of "dyspepsia" extending over a long period that leads to the discovery of the disease in the appendix.

(*b*) Renal calculi, uterine and ovarian irritation (the frequent association of gastric stasis with erosion of the os uteri may be pointed out), and gall-stones may all produce reflex pyloric spasm, as also phimosis in children.

3. Overwork, worry, irregular hours, lack of exercise, and gastric catarrh from the eating of unsuitable or improperly prepared food, are frequent causes.

### *Course of the Disease.*

The disease usually follows a well-defined course; and the sequence of events, although each stage merges gradually into the other, may for convenience of description be divided into the following stages: (1) Gastric stasis; (2) chronic distension; (3) muco-gastritis; and (4) atonic dilatation.

1. *Stasis* is a retention in the stomach of the products of digestion for an abnormal length of time. It is characterised by a feeling of discomfort, heart-burn, acid eructations, and flatulence. By the method of auscultatory percussion which is described later, and by which greatly increased accuracy can be obtained, the stomach is found to be slightly distended, and a splash can be heard. If six hours after a meal the stomach is distended and a splash obtained, it can be said that there is a state of gastric stasis.

The delay in the emptying of the stomach contents into the duodenum leads to acid fermentation of the retained material, with the evolution of considerable quantities of gas, and this being often repeated a state of chronic distension is reached.

2. *Chronic distension* is a condition in which the stomach is found always distended; temporary distension occurs even in the earliest state of stasis. A sharp line of distinction must be drawn between chronic distension and dilatation. In distension there is an enlargement of the stomach by fluid and gas, but when completely emptied the organ returns to its normal size. In dilatation, even when completely emptied, the stomach does not return to its normal size.

The symptoms of chronic distension are those of stasis, but greatly increased in severity; there are heart-burn, very acid eructations, nausea, great flatulence, palpitation of the heart, and considerable pain in the epigastrium, relieved by pressure or the passage of the gas out of the stomach.

The stomach resonance is greatly increased, extending high up in the axillary line and as far down as the umbilicus. It can be taken as a very useful rule that, when the resonance is greatly increased in an upward direction without a very great increase in a downward direction, the condition is one of distension rather than dilatation; whereas if the signs all point to the stomach being very low in the abdomen, and if in the recumbent attitude the resonance extends far below the umbilicus, it is probably a case of dilatation rather than distension. In chronic distension a distinct splash can always be obtained.

The disease may now follow one of two lines: the over-distension may produce an atonic condition of the muscular coats and dilatation become established, or this last stage may be reached after the stage of muco-gastritis. It is important to realise that atonic dilatation may become established, and the motor power of the stomach enfeebled or lost, without any acute symptoms ever having been felt by the patient, the history of "dyspepsia" extending over a long period being all that can be elicited.

3. *Muco-gastritis* is an inflammation of the mucous coat of the stomach, the result of chronic irritation by the highly acid products of fermentation in fluid retained in the stomach. The acids produced are butyric, lactic, and acetic.

The pathology of this condition is interesting, in that it has a great deal to do with the subsequent history of the case. The mucous membrane is inflamed, and the summits of the folds show minute excoriations or pin-head superficial ulcers; these are scattered about in great numbers, particularly in the pyloric antrum and on the gastric side of the pylorus itself. Several of these little ulcers may coalesce and produce a large superficial ulcer called a "gastric erosion." This does not extend below the mucous coat, having the submucous coat as its floor, and it is thus distinguished from the real gastric ulcer, which involves all the coats of the stomach.

In a more chronic condition the mucous membrane becomes greatly thickened in patches, particularly close to the pylorus. These thickened areas are denuded of epithelium and look very like granulating surfaces. This condition might be called the "granular erosion" for the sake of distinction. These areas, situated close to the pylorus, may be so prominent as to be an actual obstruction to the passage of fluid from the stomach.

It is a law that ulcerated surfaces do not heal unless kept in a state of physiological rest, and in a moveable contractile organ like the stomach it is particularly difficult to secure this and very essential that the rest should be absolute. Now in the fundus of the stomach at this stage is a highly acid irritating mixture, and as this is forced up to the raw eroded surfaces of the pyloric antrum a spasm is produced, the antrum and pylorus contract, and the fluid is prevented from passing out, only to return to the fundus and undergo still further fermentation. It is clear that an eroded mucous surface, constantly subjected to this irritating fluid and to these spasmodic contractions, gets very little chance to heal. Physiological rest of the stomach can only be secured by ridding it of this irritating mixture and allowing the organ to remain free of all food for a time.

The characteristic signs of this stage are great pain and a localised tender spot in the epigastrium obtained by gentle but deep pressure. Vomiting is not a usual symptom, but in many cases the pain becomes very acute and boring in character towards the early hours of the morning, and this is only relieved by vomiting. During the day-time the taking of food may relieve the pain for a short time, due partly to the alkaline saliva neutralising somewhat the acids in the stomach, and it is interesting to note that the secretion of saliva is often greatly increased in this affection. The gastric mucous membrane also secretes large quantities of a clear, very tenacious, mucus, which forms a layer covering the mucous membrane. It is alkaline when secreted and serves as a protecting layer, preventing the delicate glandular structures from being destroyed by the acid contents of the stomach.

When the whole mucous membrane is in a state of chronic catarrh, there comes a time when no free hydrochloric acid is found in the contents, only butyric, lactic, and acetic acids being present. The pyloric glands do not secrete hydrochloric acid, and as it is the hydrochloric acid that has the power of destroying micro-organisms, swallowed either from septic conditions in the teeth and gums or in the food, the pyloric antrum, with its already eroded and granular patches, is left very vulnerable to attacks of septic germs, which find an entry into the underlying tissues, and may thus produce an actual "gastric ulcer." It is certain that this condition of inflamed mucous membrane with gastric

erosion is more common in patients with septic teeth and gums (pyorrhœa alveolaris).

The tongue is furred, with two brown streaks running parallel to the middle line. In two instances I have seen the tongue absolutely black, as if coated with ink.

There is sometimes hæmorrhage in this condition, and the fæces may be black. Probably the hæmorrhage is mostly of an oozing character from the raw surfaces. It is sufficient, however, frequently to raise the question as to whether the case is one of duodenal ulcer: both conditions have a localised tender spot and melæna, with at the same time an absence of the hæmatemesis and vomiting so characteristic of real gastric ulcer. The following point will frequently succeed in clearing up the diagnosis. Mark on the skin with a blue pencil the exact locality of the tender spot, then proceed to empty the stomach of its contained gas by the method described later, and it will be found that the tender spot is one or two inches or more higher up. This "moveable tender spot" is very characteristic of gastric erosion, the tender spot of duodenal ulcer being fixed. This difficulty only arises where the tender spot is low and about the middle line. If the spot is high up, close to the sternum, it is unlikely to be a duodenal ulcer.

The bowels are always obstinately constipated, and the patient loses flesh rapidly, looks sallow and ill, and is unable to sleep on account of the boring pain.

4. *Dilatation.*—An enlargement of the stomach varying within wide limits and from day to day, without the organ at any time returning to its normal size. There are two distinct types—hypertrophic and atonic.

Hypertrophic dilatation is an enlargement of the stomach, with great increase in the strength of the muscular coats and motor power. It is the result of an obstruction to the outlet, and is a true compensatory hypertrophy to overcome the obstruction. Eventually, as gastritis is produced by the retained fluids, a state of atony results.

Atonic dilatation has been already defined, the chief point being an enfeebled muscular coat and impairment of the motor power. It is atonic dilatation only that is dealt with in this article, the hypertrophic type coming within the scope of the surgeon.

The symptoms of atonic dilatation are:—1. Great enlargement of the stomach, its upper limit being frequently high up in the axillary line (increased area of stomach resonance), and its lower limit frequently reaching as far as the symphysis pubis. 2. Succussion; the splash can be obtained at any time. 3. Sense of distension and weight, a dragging feeling due to stretching of the peritoneum, which actually assumes the rôle of "suspensory ligaments." 4. Vomiting of large quantities of fluid of an intensely acid character, which is highly irritating to the œsophagus, pharynx, and nasal passages. 5. If there are any of the patches called "granular erosions" there is great tenderness on pressure. 6. These symptoms are liable to frequent exacerbations particularly if there is over-distension with gas, and during these paroxysms the patient may roll on the floor in agony.

Atonic dilatation may be arrived at as a gradual process with only the mild symptoms of gastric stasis, without the stages of muco-gastritis and erosion, and the patient may state that he has never suffered from anything but "indigestion." There is always some degree of inflammation of the mucous membrane. Stasis leads to a disorganisation of the gastric glands. According to the laws of secretion discovered by Pawlow, the glands in a normal stomach secrete juice of a quality and quantity exactly required for the digestion of the articles of food introduced into the stomach. Now it is obvious that if, in a stomach already containing the products of digestion plus the products of acid fermentation, there is added still a further supply of food, the gastric glands are thrown out of order. The condition in a dilated stomach, with the contents retained for, it may be, days, and the mucous membrane covered with a layer of tenacious mucus, is as far removed from normal as can be imagined; nor is it to be improved by the addition of drugs and chemicals unless some outlet can be found for the products of their action.

Obstinate constipation is an almost constant accompaniment of the condition in all its stages, from the early stasis to the advanced dilatation, and in its late stages the disease gives rise to all the general constitutional conditions associated with toxic absorption from the gastro-intestinal canal. The author is impressed by the fact that these auto-intoxications are far more frequently gastric in origin than intestinal.

*Treatment.*

This brief sketch of the origin and development of atonic dilatation will serve to make clear the various points in the method of treatment now to be described.

The usual treatment adopted in these cases is diet, alkalies, antiseptics and antiferments (carbolic acid, creasote, &c.), and in later stages lavage of the stomach with warm antiseptic fluids by means of the stomach tube. To the tube there are great objections, and in many cases it is impossible to use it. Moreover, although it frees the stomach of its contents and palliates the condition it does nothing to restore the impaired motor function, nor to re-educate the stomach to work automatically. Gastro-enterostomy gives only partial relief, for in these cases there is no actual obstruction at the pylorus, and consequently the stomach very soon becomes dilated again. The radical cure is to restore the motor function of the stomach and to re-educate it to perform its work automatically as it does under normal conditions.

The instrument essential for the carrying out of the treatment is a modification of the phonendoscope. It is a large, fairly heavy instrument (not less than 8 ounces) called Bazzi et Bianchi's, and when placed on the abdomen (the patient recumbent) leaves both hands of the operator free.

*Auscultatory percussion.*—Let the patient lie flat on his back, with the head well down, and place the phonendoscope on the epigastrium, where its weight holds it in position; introduce the two ear-pieces into the ears and proceed to percuss out the stomach, liver, colon, intestines, &c. It will be found that by this method the organ can be mapped out with the greatest accuracy, and less difficulty will be experienced in distinguishing the stomach from a dilated colon or small intestine. Without the instrument it is often impossible to differentiate a dilated colon from the stomach.

The slightest degree of splash, inaudible without the instrument, can now be detected. Grasp the patient firmly by both hands, steady the instrument with the tips of the thumbs, and sharply shake. The splash is quite clear. Another method is, with the instrument in the same position, with the right hand sharply press under the margin of the ribs when a splash is easily obtained. By means of this instrument certain definite sounds can be heard, and it is essential that the physician should train himself to differentiate these and learn their significance:—"Pistol-shot sound": small successive quantities of gas passing through the pylorus. "Explosion sound": large quantities of gas passing through the pylorus. "Sizzling sound": small quantities of fluid passing through the pylorus. "Gushing sound": larger quantities of fluid passing the pylorus. "Debacle": a long-continued rush of fluid occurring towards the end of the treatment, when the stomach completely empties itself into the duodenum. "Waves": (*a*) A low "crunching sound" resembling that made by a man walking on frozen snow, due probably to the churning movements of the antrum. (*b*) A soft "sighing sound," which is only got in an empty stomach across which peristaltic waves are passing. These are not obtained except at the very end of a treatment.

The point on which the whole treatment turns is the discovery of a series of superficial skin areas, the gentle stimulation of which causes contraction of the distended stomach, the opening of the pylorus, and consequent emptying of the contents into the duodenum. It is a pure reflex action. The areas lie along the margin of the ribs, commencing at the tip of the tenth costal cartilage on the left side, ascending to the tip of the sternum and down the costal margin on the right side.

The manipulation is carried out as follows. With the patient flat on his back, place the phonendoscope on the right of the umbilicus and seat yourself on his right side facing his head. Place your right hand on the patient's abdomen with the tips of the fingers at the costal margin, find the tip of the tenth rib, and with the tips of the first, second, and third fingers very gently glide, with a trembling motion, over the skin. A hard tap produces a spasm of the pylorus, and all attempts to empty the stomach are futile for some time. It is the delicate, light touch which is efficacious. After a few seconds or minutes (it varies), action will be heard beginning in the stomach. The first to

leave is always gas; consequently "pistol-shot" or "explosion sounds," according to the quantity escaping at one time, will be heard. Cease the stimulation until that contraction has stopped, then proceed again in the same manner, and all the gas will thus be driven out. Then quite different sounds can be heard: a low, muttering, crunching sound begins; it increases in intensity as it approaches the pylorus, and, this opening, a sizzling or rushing sound of fluid is heard. These waves succeed one another until the stomach is quite empty, and when there is nothing more left the soft blowing sighing sound can be heard as wave after wave travels across the empty stomach.

These sounds are greatly modified by the various conditions in the diseased stomach. In a simple case of gastric stasis, without inflammation or erosion, the above sequence of events can be obtained fairly easily about six hours after a meal. In "distension" the sound of the escaping gas is one of the most remarkable phenomena of auscultation, and is followed by rush succeeding rush of fluid, and "debacle" is frequently obtained.

In gastritis with excoriation or erosion the gas escapes fairly well, but the sound as the highly acid fluid reaches the raw spot in the mucous membrane is quite characteristic. The wave commences with the low crunching sound and works up to the point where you momentarily expect to hear the rush of fluid, when it suddenly stops short. There are two elements that cause this sudden stoppage of the wave. A peristaltic wave cannot pass over an eroded area. This is what we find in other parts of the body; a small erosion in the knee causes the joint to be held quite rigid by the muscles, and the same protective mechanism would appear to apply in the stomach; the muscular coats hold rigid where the mucous membrane is eroded. The second element is the spasmodic contraction brought about by the highly acid nature of the fluid.

In "atonic dilatation" it is more difficult and takes longer to start the contractions, but once started they continue very well. There is always in this condition a great deal of gas in the stomach, and before the fluid can pass the pylorus this gas must be expelled. Owing to the weakness of the muscular coats there is very little strength in the contraction, and very frequently the sound heard is a characteristic one; it suggests a "ball-valve," the accumulation of gas in the pyloric antrum moving up to the pylorus, but not escaping, and making a curious metallic snap as it is forced against the closed pylorus. When, as is always the case after a little time, the gas escapes through the pylorus, it does so with a very loud report, and is followed by a rush of fluid.

In a case of atonic dilatation the treatment for the restoration of the motor function of the stomach is carried out as follows. About five hours after a meal, say at six in the afternoon, the treatment as described above is performed. At the first treatment great patience is required, and usually half an hour or more is necessary to completely empty the stomach. This routine is carried out daily, and at the end of two or three weeks the actual symptoms and signs of dilatation have subsided. It is necessary to continue the daily treatment until at six in the afternoon, after an ordinary luncheon, there is no sign of splash, distension, or retention of food; in other words, the stomach carries out its motor function without any external aid. It is necessary, in order to prevent a relapse, that the treatment be continued daily until the sounds heard are normal—viz., smooth, regular, intermittent waves, and the passage of fluid through the pylorus at every second or third wave. If there is a great deal of gas, or if the waves are broken, irregular, and choppy, then the stomach is still abnormal, although the patient may feel perfectly well.

This disease in all its stages is accompanied by obstinate constipation, and it is one of the most gratifying features of this treatment that at the end of the first week, often earlier, without drugs, the bowels begin to move regularly each morning and continue to do so. I have not yet had a case in which this has not occurred.

Certain points in the treatment are of importance. Once a wave is heard to commence the stimulation should be stopped until that wave has ceased. If further stimulation is commenced before the previous wave is completed a spasm of the pylorus is apt to occur. The treatment should not be commenced until at least four hours have elapsed since a meal, and in the graver cases an even longer time. If a case is a particularly obstinate one, it is better not to try to force it, but to leave the stomach perfectly quiet for an hour, and then recommence the treatment.

The contractions produced by this method are often very powerful, and it is of the utmost importance that this treatment should not be used when a real "gastric ulcer" is present. This ulcer involves all the coats of the stomach, and a very powerful contraction might produce either perforation or violent hæmorrhage.

### *Special Points in Diagnosis.*

It is frequently of the greatest importance to be able to decide whether a dilated stomach is due to an obstruction to the outlet or to an atonic condition of the organ itself. In view of the fact that the operation of gastro-enterostomy is successful in the former condition and so frequently fails in the latter, it would be of great benefit to the surgeon to know if there is an actual stricture of the pylorus, and by the method described the question can often be settled. If, on producing contractions of the stomach, fluid is heard to pass freely, there is certainly no great obstruction to its flow, and by practising this method for a few days, and noting the result, both in the size of the stomach and the passage of its contents, an accurate prognosis might be made as to the benefit, or the reverse, that might be derived from a gastro-enterostomy. If, on the contrary, fluid can only be made to pass the pylorus in irregular little jets, the sound of which is quite characteristic, and if, as occasionally occurs, the contractions produced are so powerful that the contents, unable to pass out by the pylorus, are ejected forcibly through the mouth, then an actual diagnosis of pyloric obstruction could be made. There is, however, a condition of the mucous coat near the pylorus in which the mucous membrane is greatly thickened and the surface eroded (the granular erosion), in which the signs very closely resemble those of an actual stricture; and particularly in this condition, when the acid contents reach these areas, the pylorus contracts spasmodically. A week's observation will usually serve to clear up the difficulty.

### *Cases.*

CASE 1.—A man, aged 29, with history of stomach trouble extending over a period of six years. This patient came to me on Oct. 23rd, 1909. The stomach reached to the symphysis pubis; all the signs of dilatation were present. His weight was 6 st. 9 lb. The urine passed was very scanty in amount, and the bowels were obstinately constipated, often acting only once in the week. He was liable to violent attacks of pain lasting for many hours, in which he would roll on the floor in agony. With the first treatment a considerable amount of gas and fluid passed through the pylorus. It was considered advisable, however, not to attempt to send any more of the stomach contents into the intestine, and nine pints were removed by the stomach tube.

Oct. 24th: Several "debacles"; 5 pints removed by tube. 25th: Great quantity passed by pylorus, 2 pints by tube. Urine increased in amount. 26th: 2 pints by tube; fluid passed freely by pylorus. 27th: Fluid passing freely by pylorus; no result by tube; urine increased. 28th and 29th: Stomach emptied through pylorus; bowels opened naturally without drugs.

Through November, December, and January the treatment was continued daily. The stomach gradually returned to its normal position, the bowels acted every day, the urine was normal in amount, and the patient increased in weight to 9 st. 10 lb. He has remained well without any symptoms since that date, and three weeks ago he reported himself as perfectly well, able to conduct his business, and weighing 10 st. 11 lb.

This patient had had treatment by lavage of the stomach with the tube at many periods during the previous few years with only partial relief, relapses occurring almost immediately.

CASE 2.—This case—a female, aged 35—presents many features of interest on account of the conditions which complicated the dilatation of the stomach. She had been perfectly healthy, accustomed to riding and all outdoor exercises, until four years previously. There was a history of continuous stomach trouble since that date.

On examination the stomach was found to be enormously dilated, reaching to the symphysis pubis. The right kidney was easily felt on palpation, and the uterus was almost presenting at the vulva. A condition of "neurasthenia" was particularly marked: violent crying fits, palpitation of the heart, sleeplessness, migraine, and a feeling described "as if the top of her head was made of cotton wool." The patient was wasted and very weak. Constipation was most obstinate, and a tablespoonful of the liquid extract of cascara sagrada was taken every night with but little result.

She had frequent attacks as follows. Commencing the day following recovery from the previous attack, she would have pain and uneasiness after luncheon, aggravated by dinner, and ending in a restless night. This became worse next day, and by the evening she would have a violent headache and suffer great pain in the abdomen, and vomit. The next day or two would be spent in bed and no food taken. This would relieve her partially, only, however, to be followed by a similar attack as soon as she got up and resumed taking meals.

The treatment was commenced and continued daily for three months uninterruptedly; no stomach tube was employed and all drugs stopped; an enema was administered each morning during the first ten days. The contents of the stomach passed the pylorus at first with considerable difficulty and in small quantities, but daily the stomach assumed a higher position in the abdomen, and at the end of the first month its lower limit was on a level with the umbilicus. After the

tenth day from the commencement of the treatment the bowels acted without an enema and continued regular.

It took nearly a year to complete the cure, and at the end of that time she had gained 2 stones in weight, had no signs or symptoms of stomach trouble, all "nervous" symptoms had disappeared, and the kidney could not only not be felt, but gave none of the symptoms associated with moveable kidney. The uterus also, relieved of the pressure from above, came to occupy a position more near to the normal. She is now, four years after the treatment commenced, quite well, able to ride and play tennis and golf, and shows no signs of a relapse.

CASE 3.—This case is quoted on account of the rapidity with which the stomach regained its normal position and power, and also to illustrate in what an insidious manner such a serious condition can be arrived at. As the patient is a final year medical student he has himself written the history.

"I was up at Cambridge from 1905 to 1908, and periodically used to have to train for the races, which training chiefly consisted in taking hard exercises, running and rowing, and eating enormous meals with the object of sending my weight up. When training I used to eat enormously, whether I was really hungry or not, as I was exceptionally light and fondly imagined I was doing myself good. This did not trouble me particularly until my last term, June, 1908, when I occasionally suffered from severe griping pain in the epigastrium. That was all I complained of at the time, but about six months after, during which I had not been leading a very hygienic life, either as regards food or exercise, I began to feel a sense of distension and discomfort in the epigastrium after meals, which gradually passed off into hunger pains before meals, for which I used to eat, not because I felt hungry, but to allay the pain, which, however, was never at all severe.

This went on for about two years, during which time I used to complain a lot of epigastric discomfort, absence of appetite, wind, occasional feeling of sickness, and general languor. I used to play games, tennis, golf, and Rugby football, but never felt very grand after playing them, and was stopped playing the last named for a short time last winter because I was anæmic and on examination had a hæmic murmur. These, however, cleared off when I was treated.

During these two years my weight, which was never anything very great, dropped about a stone, from 10 st. 6 lb. to 9 st. 6 lb. approximately, but what worried me most was that I sometimes used to feel faint in the wards, and did actually faint on two or three occasions. This liability to faintness and feeling of discomfort and distress in the epigastrium, which it is beyond me to describe, was really what chiefly worried me. Another thing was that I suffered a good deal from sleeplessness; going to bed after midnight, after working, I often lay awake for an hour or so, and on more than one occasion for two or three hours, on account of the epigastric sensations.

I frequently used to try and diagnose my condition, and on examining the abdomen I was often struck with the fact that in pressing out the abdomen, or breathing rapidly in and out, I had a fairly extensive succussion splash, the epigastrium, and even below the umbilicus, feeling like a bag of water swaying about under the fingers."

On examination the stomach was found occupying the whole left side of the abdomen, with a distinct and easily obtained splash; the resonance extended high up in the axillary line. The treatment commenced on Monday, Nov. 7th, and the stomach responded at the end of 10 minutes. A considerable quantity of gas first escaped, and then a succession of "gushes" continued for nearly 20 minutes. This treatment was carried out each day, and by the fourth day the lower level of the stomach was above the umbilicus, and on the Friday, after the treatment was finished, the stomach was about 2 inches below the costal margin. He was taking his meals well, sleeping well, and had no feelings of pain or discomfort in the epigastrium. He played Rugby for his hospital team on the Saturday afternoon.

Since then the condition has been one of uninterrupted improvement, and although the treatment is being continued, there are practically no signs or symptoms to indicate any gastric trouble.

These severe examples are quoted to show the class of case to which this method of treatment is particularly applicable. In less severe conditions, the condition of the stomach yields rapidly to the treatment, and often at the end of two or three weeks all signs of dilatation, distension, tenderness on pressure, pain, and discomfort have disappeared.

Feeling, as the author does, that these conditions of stasis, chronic distension, and dilatation, and often muco-gastritis and erosion, have their origin in a disturbance of the motor function of the stomach rather than in the secretory function, he would venture to suggest that this whole group of conditions could fitly be described by the term "gasterakinesia" (gaster = the stomach; akinesia = without motion).

A great many of the observations upon which this article is based have been carried out in Dr. F. J. Wethered's clinique at Middlesex Hospital, and the author wishes to take this opportunity of acknowledging the generous manner in which Dr. Wethered has placed every facility in his way for carrying out the investigation, and for much valuable advice and counsel.

Harley-street, W.

NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.—A special Clean Milk Campaign Fund is being raised by this league in order to enable it to circulate free copies of leaflets to farmers, dairymen, and housewives, giving simple, clear, and concise instructions for ensuring the cleanliness of milk. We have already spoken in high praise of the practical character of these leaflets. Contributions to the fund, however small, are invited, and should be sent to the secretary of the league, 4, Tavistock-square, London, W.C.

# POWER OF SPEECH IN CUT-THROAT.

BY DHANJIBHAI H. MEHTA, L.M. & S.,
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IN THE LANCET of Oct. 29th, 1910, p. 1294, mention is made in an annotation of a case under the care of Dr. E. M. Merrins of Wuchang in which he says that his patient with the wound exposed could speak only in a weak whisper but so as to be easily understood, that he could speak much more distinctly with the throat bandaged, and could speak clearly and well with the neck flexed so as to close the wound, thus confirming your own opinion expressed last year (1909) that comprehensible speech is perfectly possible, even though the larynx is divided immediately above the vocal cords.

I am glad to be able to cite a case in support of your view. On Nov. 19th, 1910, a man was admitted to this hospital with a big gash in his throat just below the chin. The larynx was cut clean through, a thin ring-like piece of the thyroid cartilage and the epiglottis being at the upper part of the gash, and the rest of the larynx below. The cords could be seen working with each inspiration. The pharynx also was cut open so that one could see the back of it. The patient, when admitted about two hours after the injury, could speak in a fairly loud voice, even with the wound exposed, though a certain amount of difficulty was experienced in understanding him. With a bandage on, however, he could speak distinctly and loudly. In order to suture the wound we tried to put him under chloroform, applying the mask on his face (in the absence of the mouth-tube of a Junker's inhaler); but as he was breathing almost wholly through the wound we did not succeed for at least 15 minutes, when we removed the mask and placed it over the wound, the patient then promptly going under. It was, however, difficult to keep him anæsthetised for long, as it was not practicable to suture the wound and keep the mask on at the same time. I was therefore compelled to put in the sutures even while the patient was conscious, and was surprised to find that he did not show the least sign of pain all the time I worked on him. Probably there was some anæsthesia, though a colleague was inclined to attribute the state of things to a high degree of fortitude on the part of the patient.

The man when admitted had a slight cough, and the result was that the sutures gave way on Nov. 22nd, though he was fed by nutrient enemata only all the time. As he was getting weaker, however, and as there were three holes in the larynx, one on each side and one in the centre, from which a very foul discharge could be coughed out, feeding through the nose was begun and hot fomentations of iodine terchloride solution (20 minims of Professor T. K. Gujjar's liq. iodi terchloridi fort. to 1 ounce of normal saline) were applied every four hours. Granulations began to spring up, but there was a large quantity of healthy pus each time on the dressing, and as the patient began to complain of pain in the throat and inability to swallow his saliva with ease, hot boric fomentations were substituted from Dec. 1st. Under their effect the laryngeal openings gradually closed up one by one, and to-day (Dec. 18th) there is only a very minute hole left, which will close up in a day or two. As the patient got tired of the feeding through the nose, and as he began to have movements of the bowels soon after he was fed, he was allowed to have peptonised milk by the mouth on Dec. 15th, and from the 16th solid food.

The case, in my opinion, presents the following points of interest: (1) the difficulty of anæsthetising by applying the chloroform mask to the face in the ordinary way, while its application to the wound rendered operative measures very difficult; (2) the possible local anæsthetic action of the chloroform on the larynx, so that sutures could be put in without the patient showing the least sign of pain, even though conscious; (3) the wonderful way in which the wound granulated, notwithstanding the fact that there was a foul discharge from the openings in the larynx which engendered a fear that the patient might succumb to septic pneumonia; and (4) the loud voice and the fairly distinct speech, even with the wound uncovered.

Baroda.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF COMPLETE INTUSSUSCEPTION OF THE APPENDIX VERMIFORMIS.

BY H. M. COOPER, M.B. LOND.,
LATE HOUSE SURGEON AT ST. GEORGE'S HOSPITAL.

A BOY, aged 10 years, when seen by me was complaining of constant attacks of abdominal pain. After a tea-party the child had had an attack of pain and sickness ten days before. His mother gave him an aperient and he temporarily improved, but the pain recurred eight days later. It came in attacks severe enough to make the child cry. His bowels had been open the day before he was seen by me. He had vomited twice. He looked ill; his tongue was furred, his temperature was 99° F., and his pulse was 90. There was some tenderness in the right iliac fossa, but his abdomen was soft and moved freely. No swelling could be felt; there was no peristalsis. The following day, after an enema, he had constant attacks of pain and sickness. His pulse was 120 and his temperature was 100°. In view of the marked rise in the pulse-rate I sent him to St. George's Hospital for operation.

The patient was admitted under the care of Mr. G. R. Turner. There was some slight general distension of the abdomen. Marked tenderness in the right iliac fossa. No tumour could be felt. The abdomen was opened through the right rectus sheath. No appendix could be seen. On examining the cæcum a mass as big as a man's thumb could be felt in its interior; the relations of the small bowel to the large were normal. On opening the cæcum the appendix in a gangrenous condition was found to be completely intussuscepted. It was cut off after ligature of its base; the parts were so friable that the ligature cut its way right through the gangrenous tissues. There was no bleeding. The opening into the cæcum was closed by a silk Lembert suture; the parts around were packed with gauze and a drainage-tube was introduced. The following day the temperature remained high (102°) and the pulse was rapid. The next day both pulse and temperature dropped, and convalescence, although prolonged by a considerable amount of discharge, was uninterrupted. No slough of any kind was detected in the fæces passed after the operation, though they were carefully examined.

Hampton-on-Thames.

### NOTE ILLUSTRATING THE TREACHEROUSNESS OF APPENDICITIS.

BY ROBERT E. HALAHAN, M.D. DUB.,
HONORARY VISITING SURGEON, BRITISH HOSPITAL, BUENOS AIRES.

THE following case of appendicitis seems interesting on account of the mildness of the symptoms compared to the pathological condition found present at the operation.

A campman, 24 years of age, was taken ill on a Wednesday afternoon with colicky pains in the abdomen. He took a purge, went to bed, and on Thursday got up at daybreak, feeling so well that he cleaned out a water-tank. At midday the pain returned and became so severe that he again took to his bed. His bowels moved freely, he slept pretty well, and on Friday he felt so much better that he decided not to come into town as he had intended to do. His employer, however, advised him to do so, and on Saturday, after a drive of some leagues to the station, he started on the 17 hours' train journey to Buenos Aires. The journey was accomplished without experiencing any marked pain, his bowels moved twice, and on the way he partook of tea, soup, fish, eggs, &c. On Sunday morning he presented himself at the British Hospital, rather ashamed of himself, he felt so well. His temperature on admission was 37·4° C., his pulse was normal, his tongue was clean, and beyond slight pain on pressure over McBurney's point he presented no abnormality. Rectal examination was negative. An ice-bag was applied to the right iliac region.

On Monday morning, when I saw him, his bowels had not moved, the slight tenderness of the day before had practically disappeared, pulse and temperature were normal, and the tongue remained clean. He said he felt quite well. I told him that I thought he had had a very slight attack of appendicitis, but as he lived so far from medical aid I advised operation, to which he agreed. The next day I saw him before the operation. He laughingly told me he was quite well, and felt like getting up and going out. He certainly looked it. Half an hour later I removed an appendix some 6 centimetres long, lying on the outside of the cæcum, with the point directed upwards and inclined towards the posterior parietes. From about 1½ centimetres from the cæcum to its tip the organ removed was quite gangrenous and bathed in evil-smelling foul pus. There was almost no inflammatory reaction to be seen in the surrounding peritoneum, and adhesions were conspicuous by their absence. The appendix was cut off close to the cæcum and the stump touched with pure carbolic acid and buried in the ordinary way. For ten days a drain was kept in at one angle of the wound, the rest of it having been stitched up. Recovery has been uneventful and complete.

The lesson to be learnt from such a case is obvious. When one meets with a case of appendicitis operate on it at once, because symptoms, no matter how trivial, are no guarantee against the most serious pathological conditions being present in the abdomen in this treacherous disease.

Buenos Aires.

### A FATAL CASE OF MYASTHENIA GRAVIS.

BY EDWARD GROUND, B.A., M.D. CANTAB., M.R.C.S. ENG., &C.,
HONORARY SURGEON TO THE WEST KENT GENERAL HOSPITAL.

THE patient was a man aged 51 years, married, one child. He had suffered for some years from occasional attacks of bronchitis. In November, 1908, he developed a cough with some fine crepitation at the right apex, a few tubercle bacilli being found in the sputum. He went to the home sanatorium at Bournemouth and returned in March apparently well. About a month afterwards he began to suffer from loss of appetite and muscular weakness, getting very easily tired after slight exertion, and noticing that occasionally objects looked double, especially when he was out walking. The muscular weakness gradually increased, affecting more particularly the facial muscles and those of the shoulder and back of the neck, so that when he smiled he had a peculiar appearance, the angles of the mouth being drawn upwards but very slightly outwards, and after standing or sitting for a short time he had to support his chin on his hand because his head was inclined to fall forwards. After talking for a little while he became tired and had difficulty in pronouncing his words distinctly, and when at his meals after a few bites his jaw muscles refused to act, so that he was obliged to rest at intervals during the repast; swallowing, too, became difficult after a few attempts. At times he complained of a tight feeling about the epigastrium and a difficulty in drawing a long breath, saying that "the bowels seemed to stop it from going any further." His knee-jerks were normal, as was his temperature except when he had a bronchial cold, but his pulse varied between 90 and 100.

As his condition was gradually getting worse, on Sept. 8th, 1909, I took him to see Dr. Purves Stewart, to whom I am indebted for the following notes taken at the time:—Speech, articulation, discs, pupils, and external ocular movements were normal, but the orbiculares oculorum were weak, the patient being unable to hold the eyes shut against resistance. "Nasal" smile was marked. The masseters were feeble and hardened very imperfectly. The palate and tongue were normal on movements. There was no cutaneous anæsthesia or analgesia. The neck muscles were very weak, the head tending to fall forwards, so that he had to hold it up on one hand, supporting that elbow with the other hand. The muscles of the hands were feeble, but less markedly than the proximal muscles. The diaphragm was very feeble. He could not lift one leg across the other without the help of the hand. The gait was normal, but feeble. No localised muscular atrophy was present. Reflexes: Knee and ankle jerks normal; shoulder jerks not elicited; plantars flexor. The left trapezius was tested for electrical reaction. It acted to faradism

briskly at first, but in a few seconds the muscular spasm faded away, even with a powerful interrupted current.

Injections of soamin were commenced on Sept. 10th and were discontinued on Oct. 10th after 12 injections. On Oct. 11th he caught cold, had a feeble cough, and a bad attack of dyspnœa during the night. He complained very much about this time that he could not talk properly when lying on his back owing to falling of his lower jaw, but he could talk more distinctly when he turned on his side; and when unlacing his boots or leaning forward to remove his socks he had to hold his head with one hand to prevent it from falling forwards. He remained in much the same condition until the end of October, when he thought that he felt a little stronger and had less difficulty in taking his food, but on Nov. 9th he again suffered from what appeared to be a slight attack of bronchitis with a very feeble cough, dyspnœa, and great restlessness, and he died on Nov. 11th from failure of the muscles of respiration.

A complete necropsy was not permitted, but a portion of the right pectoralis major was removed for microscopical examination. Patchy infiltration of lymphoid cells was present, the characteristic lesion in myasthenia gravis.

Soamin, hydraurum, iodide of potassium, mercury, and inhalations of oxygen were tried, but had no effect in arresting the progress of the disease to its fatal termination.

Maidstone.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SURGICAL SECTION.

*Cancer of the Rectum.*

A MEETING of this section, adjourned from Jan. 10th,[1] was held on Jan. 18th, with the President, Mr. RICKMAN J. GODLEE, in the chair.

Mr. A. BOYCE BARROW said that he wished to show how little inconvenience a patient experienced from the existence of a colostomy. He referred to communications from patients upon the subject, notably of one who had been operated upon eight years ago who took very active exercise, bicycling, &c. He spoke of the gradual manner in which he had been brought to adopt the colostomy in association with the operation for cancer of the rectum. He mentioned the case of a patient which illustrated that colostomy was often called for after operation with junction of intestine had been attempted. That case afforded evidence also of the difficulty of deciding upon the wisdom of attempting removal. He contended that colostomy was an important factor in successful removal of disease. It simplified the procedure and it allowed of the operation being more complete. It also rendered the aseptic or antiseptic character of the operation being perfectly conducted, and a patient realising the nature of his disease should be prepared to make a considerable sacrifice of his comforts in order to facilitate its complete removal. The loss did not compare with the loss of an arm or a leg affected with a similar disease. An operation for cancer in any situation of the body must aim at the removal of two conditions: (1) the evident and recognisable disease, and (2) the possible extension of the disease to surrounding and more or less distant parts. That extension of the disease might be unrecognisable. Mr. Barrow contended that any operation which did not embrace the second condition of extension or spread of the disease was behind the times—because it had been so abundantly shown that the great improvement in the results of the operative treatment of cancer depended upon the more complete removal of the lines of extension of the disease. He recommended the abdomino-perineal operation as the most complete method yet practised for the removal of the disease, and associated with colostomy the operation was a decided success. The operation was rather a long one, and one must take means to lessen shock. Mr. Barrow drew attention to hæmorrhage and the degree to which the anæsthetic was given as the most important factor in the production of shock. He said that very little blood need be lost in the abdomino-perineal operation because all the important vessels could be secured before being cut. He also gave instances to show the freedom of a patient from shock after long operation when those two factors were watched. A further recommendation of the method was its aseptic character, thus protecting the patient from the pain and dangers associated with any inflammatory condition. As regards the technique of the operation he placed the patient in the lithotomy position for the perineal part of the operation, and he did not remove any bone, not even the coccyx.

Mr. W. SAMPSON HANDLEY said that the view had been put forward that it was sufficient in rectal cancer to remove the growth as seen by the naked eye, together with an inch margin of the apparently healthy mucosa above and below. That was to say, an operation was performed which would suggest itself by the light of nature to a surgeon entirely unacquainted with the pathology of carcinoma. Years ago a similar operation was habitually done in the case of breast cancer; the growth was excised from the breast, and the axillary glands were left untouched. It was strange to remember that as late as 1887, when Banks advocated the routine removal of the glands in breast cancer before the Harveian Society, only a single speaker supported him. Step by step, as pathological knowledge had increased, the scope of the operation had gradually widened in some directions and restricted itself in others, until the modern operation for breast cancer, described with equal vigour and inaccuracy as "removing all but the ribs and crippling the patient for life," had established itself. And at each step of that progress there had been a marked improvement in results, so that local recurrence in the field of operation was now a rare event, and functional disability was practically absent. In the operative treatment of rectal carcinoma they might anticipate with confidence a similar process of evolution. The necessity of removing a considerable length of bowel was shown, not only by his own researches, but by the clinical results of Mr. Swinford Edwards, which were exactly in accordance with his observations. It had been argued that his observations on the spread of rectal cancer must be incorrect, because recurrence, when it took place, involved only a small area at the site of operation; it was implied that if permeation was so extensive the obvious recurrence must be equally extensive. To that he would reply that he had seen a primary sigmoid growth extending along the wall of the bowel nearly to the splenic flexure. He showed a specimen of rectal cancer with an isolated oval patch of secondary growth extending up the bowel three inches above the upper border of the primary growth. As a rule, however, the obvious recurrence was very local for two reasons, first because permeation was a slow process which only produced naked-eye phenomena after a considerable period. It was only in those regions where permeation had been long present, that was to say in the region close to the primary growth, that naked-eye recurrence was to be expected. Secondly, the area of the obvious recurrence was reduced by shortening of the affected length of bowel owing to contraction of the growth in a longitudinal direction. To remove an adequate length of bowel, to control hæmorrhage at the beginning of the operation, and, above all, for the careful removal with visual aid of the fat and glands of the meso-rectum, the perineal and sacral operations must be replaced by the abdomino-perineal methods. The attempt to preserve the natural anus by bringing down the cut end of the sigmoid led, as continental experience had shown, to a largely increased operation mortality. Moreover, it involved the risk of recurrence in the anal region, a calamity which took place in the last case he had operated upon by the perineal method. For those reasons, speaking generally, he advocated an operation on the lines described last year by Mr. W. E. Miles, and he believed his recent paper would lead to a great advance in the treatment of rectal cancer in this country. Mr. Handley had himself practised a similar operation for two years, and in three cases. All of those were living and had no signs of recurrence. Had the operation been the dangerous adventure depicted by one of his critics, he (Mr. Handley) could hardly believe that fortune would allow him an initial sequence of successes. Goullioud had published a series of 11 cases in women, all of whom recovered. It was necessary to recognise that the radical abdomino-perineal operation was a severe

[1] See THE LANCET, Jan. 14th, 1911, p. 100.

one, and that its mortality was higher in men than in women. In old or feeble patients of either sex, but more especially in men, he should still employ a limited perineal operation if the growth were situated low down, or should content himself with a colotomy. It had been stated in reference to a case of his operated upon by the combined method, that according to his own statement he had done a perfectly useless operation, because on examining the specimen he found evidence of permeation of the bowel as far as the line of section. He was quite ready to admit that he failed to attain the surgical ideal of complete removal, but his operation secured a better approximation to it than the limited operation, and in that way he believed that he minimised, so far as was possible in that particular case, the chance of recurrence. Surgeons often claimed far too much credit for their successes in dealing with cancer. An absolutely clean removal of every cancer cell present in the body was probably a rare event. Freedom from recurrence was common because natural processes of cure destroyed or inhibited the few remaining cancer cells. Those facts explained the not inconsiderable amount of success attainable by very incomplete operations. They in no way justified the abandonment of the surgical ideal of complete removal, for experience had shown, more especially in breast cancer, that the more extensive operations, if guided by pathological knowledge, produced greatly improved results. The ideal might be unattainable, but the struggle to reach it found its full reward. One advantage of the combined method was that they widened the limit of operability and enabled them to aim more often at cure instead of merely at palliation. If the perineal method was applicable only to one case in four of rectal cancer surely it could not be the ultimate resource of surgery. It was the duty of surgeons in dealing with rectal cancer to advance along the lines laid down by pathology so far as they were able without subjecting the patient to undue risk. It was, of course, to be much regretted that a reasonably safe, and at the same time an adequate, operation could only be done at the price of a colostomy opening. But the disability, though real, was not inconsistent with a normal life of work and social intercourse. The methods which aimed at a restoration of the normal function of the anus were only successful in a small percentage of cases. The ideal result of those cases was dearly bought at the cost of many operative fatalities or at the cost of preventable recurrences. Other cases remained with a permanent sacral anus or suffered from incontinence or stricture. If the surgery of rectal cancer was to advance the ideal of restoring anal function must be abandoned as inconsistent with the other and far more important ideal of complete and safe removal of the disease on the lines laid down by pathology. It must, however, be admitted that the pathology of rectal cancer was not yet fully worked out. For some years he had been endeavouring to trace the spread of cancer of the rectum, and until recently without success, owing to the proneness of the carcinoma cells to mucoid degeneration and the consequent difficulty of recognising them in microscopic sections. About two years ago it occurred to him to employ mucicarmine, a specific stain for mucus, and by the aid of that stain he thought he was able to demonstrate the spread of permeation along the mucous lymphatic plexus of the bowel a distance of six inches from the primary growth. He was now able to demonstrate another case showing similar appearances extending to a distance of four inches from the obvious or naked-eye edge of the growth. It rested with his (Mr. Handley's) critics to explain what those appearances were if they were not those of permeation of the mucous lymphatic plexus by cancer cells. He had been unable to find wider permeation in a small series of normal rectums. Though an occasional isolated element might take on the mucicarmine stain, nothing could be seen in the normal bowel in the least comparable to the small groups of sharply defined mucoid cells, irregular in size and shape, which might occur at frequent intervals in the cancerous rectum to a variable distance from the macroscopic edge of the growth in the plane of the mucous lymphatic plexus. Beyond a certain point they ceased to be visible, and that point was, in his opinion, the true microscopic growing edge of a rectal carcinoma within which the surgeon's knife must not willingly intrude.

Mr. F. C. WALLIS said that during the last ten years the surgery of the rectum had made great progress, and this was more particularly the case in other countries. But in this country also in the last few years a much more intelligent interest had been taken in this branch of surgery by practitioners at large, who more and more appreciated what a valuable asset a proper knowledge of this subject was, and what before were looked upon as more or less mysteries were now treated in a rational manner, and thus the relief of pain for the patient was much earlier and of a more practical character. The first essential for good results was early diagnosis, and that could only be obtained by a proper examination being made at the earliest moment the symptoms were complained of instead of the whole thing being shirked as long as possible by both practitioner and patient. This was a grave responsibility which rested with the practitioner, and it behoved those who had the opportunity of early examination to do this as soon and as thoroughly as possible. If this became a routine practice the diagnosis would be made much earlier, and so the results of the operation would be greatly improved. Before deciding if any operation shall be done in cases of rectal carcinoma, one of the most important matters to decide was whether the growth was a fixed one or not. This decision, as a rule, should not be made until the patient had been examined under an anæsthetic, and even then the decision might be of some difficulty, especially if the growth was adherent in front to the bladder, vagina, or uterus. In such cases the growth might be easily pulled down with the viscus to which it was adherent, and thus give a false idea of free mobility. When any such possibility as this occurred during diagnosis it would be obviously wrong, and might also lead to serious disaster if an operation was undertaken either from the perineum or by one of the posterior routes, for when the growth was arrived at it might be found fixed. Also, other parts of the colon and even the small intestines might adhere to the growth. To obviate any such catastrophe, and at the same time to obtain a more thorough knowledge of the growth and its surroundings, an exploratory laparotomy should be made in the mid-line. This was an expediency which he suggested should be made much more use of than was at present the case. The question as to what particular operation should be undertaken was one which was almost acute in its present interest. Any new operation which involved a decided alteration of technique was usually commenced with enthusiasm. The enthusiasts often overdid it and operated on all sorts of cases which were in one way or another unfitted for such a procedure, with the result that the operation was discredited by those whose practical experience, having extended over some years, had settled into a groove in which work might run smoothly but perhaps not so much progress was made, and thus an important advance had often been checked for a considerable time. It was to be sincerely hoped that such would not be the fate of the abdomino-anal operation, which was now so much advocated and was a good one in suitable cases. The technique of this operation had been thoroughly described, and the main details of it could soon be learnt by one or two operations on the cadaver. But this was the least difficult part of the work. The age of the patient, the character and size of the growth, its situation (particularly with regard to its surroundings), the length of the sigmoid loop, the size of the pelvis, and the amount of fat generally in the abdominal cavity, were all matters of clinical importance which it was essential to consider before undertaking this operation. But it could be truly said that most of these points had to be considered in any operation for a high-lying cancer of the rectum. But it was probably for the low-lying carcinomata that this operation would obtain the best results. The involvement of the lymphatics in the submucous plexus in certain cases of cancer of the rectum was admirably demonstrated by Mr. W. Sampson Handley, but whether this was satisfactory to everybody was not certain. Personally, on reading Mr. Handley's views and thinking back over his (Mr. Wallis's) cases he was much impressed with the fact that a certain proportion of such cases which had done extremely well had had a return of the growth in the lower segment after an interval of a year or 18 months. And he (Mr. Wallis) thought that in such a case if the abdomino-anal operation had been performed and the bowel above the growth more freely removed recurrence would not have occurred. It was for such cases that the abdomino-anal method was desirable, and from which probably the best results would be obtained. He could not feel enthusiastic

as to the ultimate fate of the bigger operation which had been performed—namely, excision of the whole of the rectum and possibly a portion of the sigmoid with the establishment of an iliac anus. It could only be very few cases in which such a measure was justifiable, and even amongst the few that were justifiable it would hardly be expected that anything but a high percentage of mortality would obtain. When a rectal carcinoma required such severe measures it was probably far better treated by an ordinary colotomy, and he could give various instances of people who had lived comfortably with a colotomy and a carcinoma for many years, the longest he knew of being ten. With regard to the other operations he was strongly of opinion that the best method of dealing with rectal growths not involving the sphincters was by the sacro-anal method. The great point which he claimed in its favour was that instead of suturing the last two or three inches of the bowel to that which was brought down the anal mucous membrane was excised, and the cut end of the bowel above the growth brought down and stitched to the anus. This was quite a simple matter and all possibilities of a sacral anus forming and the almost certainty of a stricture were done away with. This was a method which he had adopted for the last 12 years and which could be well combined with the abdominal incision when necessary. When the growth involved the sphincters then a wide excision of these muscles was necessary, and this operation could usually be performed through the perineum, especially if a preliminary colostomy had been performed, and, indeed, in such cases this was essential. When a growth was inoperable there was no doubt that great comfort was given to the patient by a colostomy. He (Mr. Wallis) had already mentioned that patients lived in comparative comfort with good general health for many years after this operation had been performed, and he was constrained to mention it again because he remembered a few years ago at the Medical Society of London when a discussion took place on this very subject that grave doubts were cast upon any possible benefit being derived from such a measure. There was no question as to the immense benefit derived especially if the toilet of the colon, which was well known now to most good surgical nurses, was daily carried out and if the growth itself was prevented as much as possible from becoming septic by appropriate treatment. He could not advocate any of the various fancy operations for colostomy, which, in his experience, only caused trouble, and rarely, if ever, possessed those particular virtues which were claimed for the operation. One other point he would suggest in the operation, and that was that the bowel should be opened at the time of the operation. This saved much trouble, was much more comfortable for the patient, and with ordinary care was entirely free from all risks. He had no knowledge of any good effects which had been produced by the action of radium upon a rectal carcinoma.

Mr. P. LOCKHART MUMMERY said that a point which he thought had not received sufficient attention in the discussion was the proportion of cases of cancer of the rectum which were seen in an operable condition. Taking 100 consecutive cases from his own records he found that 8 refused operation, 35 were operable, and 57 inoperable. He said that his definition of an inoperable case was one in which it was not possible, even by an extensive abdomino-perineal operation, to remove the entire growth owing to its involving other important structures which could not be removed or to its having already caused secondary deposits. In addition a few cases were inoperable on account of the age or general condition of the patient. Mr. Harrison Cripps had found only one case in four operable, but that was because he took a much more limited view of what was an operable case. From his (Mr. Mummery's) experience he should say that it took as a rule from six to nine months for a growth to become inoperable from the time well-marked symptoms first appeared. He thought that was a most lamentable condition of things and that a very much larger percentage of cases ought to be seen in the early stages. The cause of this was because patients did not seek advice soon enough and medical men did not make an early examination. It was possible by means of the sigmoidoscope to diagnose any growth below the middle of the pelvic colon in its earliest stage. With regard to the question of what features in a case they should consider as rendering the case inoperable, he believed they should operate whenever there was a reasonable chance of saving the patient. He had seen most brilliant results from what appeared at first to be hopeless cases. Of course, by only operating in favourable cases and refusing to operate in those which were doubtful one could get very good statistical results, but their object was not to pile up good statistics but to do the best they could for the patients who consulted them. And if they could save even a comparatively small percentage of the borderland cases it was worth attempting even though it would almost certainly ruin their statistics. He was one of the first to advocate entire removal of the rectum and cleaning the hollow of the sacrum in June, 1907, and he believed that to be the proper practice, but it was impossible to make hard-and-fast rules, and he did not consider it legitimate surgery at the present time to perform the combined operation in all cases. Clearing the posterior part of the pelvis and removing the rectum were quite sufficient in a certain proportion of cases, and he had patients living as long as eight years after that operation. It was necessary to be guided by the condition present. One of the greatest advantages of the abdomino-perineal operation was that it enabled them to deal successfully with cases otherwise inoperable, but he could not agree with those who maintained that it should be performed in all cases. Local removal of the growth by simply slitting the sphincters or by the posterior route was not in his opinion sufficient, and it had the further great objection that a septic granulating wound was inevitable. By removing the whole rectum and bringing down the sigmoid it was possible to secure primary union in the wound. He had so far had three cases in which complete primary union occurred after removal of the rectum and cleaning out the sacral hollow. Two of those were private patients, and they were out of bed in 11 days and able to walk out of the nursing home in three weeks. The third was a hospital patient, and he also returned home in three weeks. The mortality from resection of the rectum was due to sepsis and peritonitis in over 90 per cent. of cases. The reason that local perineal removal had a low mortality was that sepsis in the wound, though inevitable, was not nearly so serious a matter as in the more extensive operations. If they eliminated sepsis, as they could, the mortality would be as low from the more extensive operations.

Mr. C. H. FAGGE said that his own small experience had been entirely opposed to any of the perineal or sacral operations, and in the last two years he had, except on one occasion, given them up for the abdomino-perineal method; his experience of Kocher's operation (for he agreed with Mr. Waterhouse that sufficient room could be obtained without removal of any part of the sacrum, and that therefore a complete Kraske was unnecessary) had been unfortunate, for all except one of his cases, about ten in number, had died from recurrence after intervals of six months to two years. He thought the first speakers who had spoken in favour of perineal methods alone had rather given their case away by admitting that that method was unsuitable when the growth had extended beyond the bowel wall, for in his experience many patients did not come under observation until the peri-rectal tissues had become involved, as one found in dissecting the excised mass after operation. He believed that the abdomino-perineal route would give some measure of success in even those cases. Some two or three years ago, when becoming dissatisfied with the perineal operation, he met with two cases which finally settled the question as far as he was concerned; in the first, Kocher's operation on a man was followed by death from pneumonia after a few days, and at the necropsy several secondary deposits were found in the liver; the second case was sent to him by one of his medical colleagues, who was much pleased to have detected an early case with the sigmoidoscope. After his last experience he (Mr. Fagge) refused to operate from below without first exploring the abdomen, when he found extensive cancerous peritonitis, and of course no radical operation was done. He had carried out the abdomino-perineal operation six times on patients of his own, and had also on several occasions assisted one of his senior colleagues; in some cases they had operated together, one from the abdomen and the other from the perineum, but had found it unsatisfactory. In one of those six cases he had carried the operation out in two stages, but the bowel, detached and pushed down into the pelvis, had

sloughed, and the patient died from peritonitis; he had seen the same thing happen in the practice of another surgeon. In one of the six patients operated upon by that method it was found after removal of the mass that the rectum was widely infiltrated by tubercle which had originated in the left tube; that was also removed. In the other five microscopical examination showed typical carcinoma; three died shortly after operation, either from shock or peritonitis; and two recovered, but neither had yet passed the three years' limit. As an alternative, when the growth was situated in the upper part of the rectum the abdomino-anal operation as described by Miss Aldrich Blake and as practised by Mayo and others was to be considered, but he was of opinion that for growths in the ampulla—the usual site of rectal neoplasms—it was wise to sacrifice the levator ani and other tissues around the bowel. Unless all the muscles and their nerves could be left strictly intact there was much risk of an incontinent functionless anus after any operation such as the abdomino-anal, which necessitated a perineal dissection, and in his opinion a patient was in those circumstances more comfortable with a colostomy, so that as a routine operation for rectal cancer he preferred the abdomino-perineal method.

Mr. C. GORDON WATSON said that most of the points which he wished to emphasise had been brought out by the previous speakers. He had taken considerable interest in the abdomino-peritoneal method of excision of the rectum during the past two years, and since April, 1909, he had excised the rectum by this method ten times, making a permanent colostomy in eight cases and bringing the bowel down to the anus in two cases; he had also assisted his senior colleagues at similar operations on nine occasions and had taken the opportunity of watching the methods of other surgeons. He believed that the abdomino-peritoneal method with colostomy was the best operation for all low-lying growths which were operable, but that when the mesentery was long enough and the growth was situated above the peritoneal reflexion on to the bladder or vagina the bowel might be brought down through the undamaged sphincters, and he thought that cases which were not suitable for the radical operation should be treated by simple colostomy. He said that the great objection to the radical operation at the present time was the high mortality, which, so far as he had been able to estimate, was about 40 per cent. But he believed that this mortality would soon be reduced to 10 per cent. or less when surgeons were more familiar with the technique. As Mr. Wallis had pointed out, when a new operation became prominent less discrimination was sometimes shown in the selection of cases than at a later period, when surgeons were more familiar with the indications for such an operation. This naturally raised the mortality. When Wertheim's operation for complete extirpation of the uterus by the abdomen was first practised the mortality was equally high, but it had now been reduced to something like 10 per cent. The nature of the operation and the conditions upon which the mortality depended were very similar to those of complete extirpation of the rectum by the combined route. He laid considerable stress on the preliminary preparation of patients for this operation, and he believed that if these preparations were properly carried out the shock was, and should be, a negligible factor. In the cases upon which he had operated he had had no cause for anxiety on the question of shock. The great danger, and the one most difficult to avoid, was sepsis. With regard to the preliminary preparation, he strongly believed in giving a quarter of a grain of morphia one hour before the operation. He had kept all his patients in bed for a week or more before the operation, and had had all carious teeth attended to, and had administered naphthaline tetrachloride internally during that period with a view to diminishing the intestinal flora. He had also in some cases given a b. coli vaccine as a prophylactic before the operation, and in one case an anti-coli serum. The vaccine should not be administered too soon before the operation, because of the danger of operating during a negative phase. Probably the best time to administer the vaccine was five or six days before the operation, and the vaccine used should be preferably made by cultures obtained from the patient's own excreta. He was making further investigations on this point in various cases of intestinal surgery, and he would be glad to know if any Fellows of the society could state their experiences with regard to the value of prophylactic inoculations in such cases. Mr. Mummery emphasised the value of the sigmoidoscope in early diagnosis. In two of his (Mr. Watson's) cases the diagnosis was made solely by means of the sigmoidoscope. Both cases were early carcinomata in the descending loop of the pelvic colon, and could not be felt either per rectum or per abdomen. It had been urged against the operation that it occupied too long a time. He thought that if the details of the operation were carefully worked out beforehand, much time could be saved. In his cases the longest time taken for the complete operation was 1 hour and 40 minutes, and the shortest time 1 hour.

The PRESIDENT said that personally he was becoming convinced that the operation which would be most used was the removal of the rectum and lower part of the sigmoid leaving a permanent colostomy wound.

Mr. SWINFORD EDWARDS, in the course of his reply, explained that he was not wedded entirely to any particular operation, because each case must be judged on its own merits.

Sir FREDERIC S. EVE has kindly furnished us with the following additional note of his remarks made on Jan. 10th. He said that the surgery of cancer was the surgery of the lymphatic system. It was only in recent years that the wide permeation of cancer had been understood. Mr. Handley believed the permeation to extend five inches above and below a rectal growth. Judged by clinical observation and the test of permanent cure, he felt no doubt that operations of the Kraske or perineal type were not sufficiently thorough. Steinthal, taking the statistics of numerous surgeons, came to the conclusion that primary cure was obtained in only one-fourth or one-fifth of the cases operated upon. Gant, taking the work of nine surgeons, found permanent cure in only 15·6 per cent. He looked up Mr. Edwards's article in Burghard's "Operative Surgery" and found that out of 50 cases traced, in only 7 did patients reach the three years' limit, and only 3 of these had exceeded it. Every surgeon was aware that the three years' limit was too short, for plenty of cases recurred after that time. Two of his own cases had recurred after five years. With regard to Miles's statistics, out of 58 cases traced, 54 were known to have had recurrence. Even allowing with Mr. Cripps that some of these cases were unsuitable for operation, it was impossible that any large number of them could have been. These facts showed very clearly that the Kraske or perineal method could not be trusted to give a permanent cure. For many years in clinical teaching he had emphasised the importance of exploring the abdomen in the majority of cases of rectal cancer. The necessity of that was obvious—to ascertain the condition of the glands, of the pelvic peritoneum, the amount of fixation of the upper part of the bowel as well as that of the lower, and finally the condition of the liver. For that reason he formerly advocated the performance of a preliminary colostomy. The advisability of exploring the abdomen was a strong point in favour of the abdomino-perineal method. In recent years his work in that department had been largely influenced by an important article by Rotter on the combined operation, which appeared in Langenbeck's Archives for 1906. Rotter strongly advocated the abdomino-perineal operation with restoration of the continuity of the bowel. The speaker from his own experience believed that the operation which fulfilled the most important conditions—namely, low mortality and a prospect of permanent cure—consisted in performing the abdomino-perineal operation, with the formation of a permanent colostomy. He wished to allude to one or two points in the steps of the operation. After the abdomen had been opened the peritoneum was incised on the outer side of the pelvic colon and sigmoid flexure, and the large intestine, with the peritoneum, was stripped inwards to the middle line; the inferior mesenteric artery was thus exposed with the left ureter. A ligature was placed on the inferior mesenteric artery as high as necessary according to the condition of the glands which lay along it. That completely controlled the blood-supply. The glands and cellular tissue were stripped from the sacrum, and the peri-rectal tissue removed. He agreed with Mr. Miles that in many cases the fat in the ischio-rectal fossæ and the levator ani should be taken away. Since many rectal cases occupied the ampulla it seemed to him impossible to excise sufficient bowel below the growth, unless the anus were sacrificed. He always separated the rectum as low as possible from the abdomen

(as far as the levator ani), and then performed the rest of the operation through a perineal incision, having first closed the peritoneum through the abdomen. The operation of restoring the bowel with the combined abdomino-perineal operation could not be dissociated from the great risk of sloughing of the bowel or of leakage from giving way of the posterior sutures. It was to that sloughing and leakage, together with the more prolonged operation, that the high mortality of the abdomino-perineal operation was due. Among 25 cases published in 1906, Rotter's mortality was 44 per cent.; and in 26 cases published in 1908 Mayo's mortality was 26 per cent. During the last two years he (Sir Frederic Eve) had performed the abdomino-perineal operation, combined with a permanent colostomy, with uniform success. He believed that that operation would present a very low mortality. Though he advocated that operation for the greater number of cases of carcinoma of the rectum—viz., those occupying the ampulla or true rectum—he recognised that when the disease affected only the anal canal and anus it might be right to attack it from the perineum, but the coccyx should be removed, the sacrum cleared, and the groin glands extirpated. If the disease occupied the lower part of the pelvic colon, so that it could not be dealt with entirely abdominally, and involved only quite the upper part of the true rectum, then it was justifiable to attempt the combined operation, with restoration of the bowel. For the restoration of the bowel the invagination method appeared to be least likely to be followed by sloughing. In performing it, there need never be any anxiety as to the possibility of bringing down the colon. Every surgeon had used the incision on the outer side of the sigmoid flexure in order to mobilise it. Mr. Moynihan had suggested that that method could be still further utilised in the combined operation with restoration of the bowel, to mobilise the descending colon by prolonging the incision upwards along the descending colon. In the performance of the combined operation, after closure of the abdominal wound, the restoration of the bowel should be carried out through a perineo-coccygeal incision through which the tumour, with the lower portion of the bowel, should be brought and the junction effected. In this way soiling of the peritoneum was avoided and the perineal wound was very useful for drainage of the pelvis; it also served to keep an observation on the suture line.

## PATHOLOGICAL SECTION.

*Gall-stones and Cancer.—Microscopic Structure of Uric Acid Calculi.—Complement-fixation.—Gas-producing Power of Intestinal Bacteria.—Protozoon-like Bodies in Yellow Fever.*

A MEETING of this section was held on Jan. 17th, Dr. F. W. MOTT, the President, being in the chair.

Dr. J. P. CANDLER (of the Pathological Laboratory of the London County Asylums), in the course of a paper on the Incidence of Gall-stones and of Primary Carcinoma of the Gall-bladder and Biliary Passages in the Insane, said that gall-stones were present in practically 80 to 90 per cent. of all cases dying from primary carcinoma of the gall-bladder; while it had been remarked by Ticehurst and others that gall-stones were rarely found when the biliary passages were affected by growth secondary to that elsewhere. So far as the Claybury statistics showed they confirmed Ticehurst's statement. In primary carcinoma the gall-bladder contained calculi, while cases in which the liver was affected with growth secondary to malignant disease commencing in some other organ showed little or no excess in the incidence of gall-stones. His question was whether the association between gall stones and primary malignant disease of the gall-bladder was so frequent as to justify the opinion that because calculi were found in 90 per cent. of cases of primary carcinoma of the gall-bladder, they were to be looked upon as so potent a factor in the causation of that disease. On the one hand they had statements to show that no less than 20 to 18 per cent. (Hale White and Ticehurst), and 14 to 4 per cent. (Rolleston) of cases of cholelithiasis succumbed to malignant disease of the gall-bladder and ducts. On the other hand, Mayo Robson stated that cancer of the gall-bladder was by no means frequent, and as a primary affection was somewhat rare. These two statements were diametrically opposed. The estimates of Hale White, Ticehurst, and Rolleston were based on hospital statistics. They could not in his (Dr. Candler's) opinion be taken to represent the incidence among the general population. They were based on selected cases, among the general population, who, on account of symptoms arising from the onset of carcinoma, sought hospital advice. The inclusion of those cases would at once increase the incidence of carcinoma of the gall-bladder in relation to gall-stones, and upset the balance of comparison with that of a general population. The incidence of carcinoma in a general hospital could not be taken as indicative of the prevalence of the disease in a general population, nor could the incidence of lung affections among the insane be used to indicate the frequency of those conditions among the sane. If they took Hale White's estimate (viz., that about 20 per cent. of cases of gall-stones ultimately developed primary carcinoma of the gall-bladder and biliary passages) and applied it to the Claybury statistics, then out of the 315 cases there should have been as many as 60 cases of primary malignant disease of those regions, or assuming that 10 per cent. of a general population surviving the age of 20 suffer from gall-stones, then 2 out of every 100 persons should develop primary carcinoma—a supposition which he thought was not justified. It might be suggested that the smaller incidence of primary carcinoma among the insane was due to the fact that their average age at death was lower than the average age at death of a general population surviving the age of 20. If all the cases of gall-stones dying before the age of 60 be eliminated from the Claybury statistics, there still remained 197 cases of gall-stones occurring from the age of 60 upwards. If Hale White's estimate be applied to those cases only, there should have been close on 40 cases of primary carcinoma of the gall-bladder in the Claybury statistics. It was not his intention to discuss the various theories as to how gall-stones acted in producing carcinoma of the gall-bladder, or as to whether gall-stones preceded or were formed after the commencement of malignant disease of that organ; there was probably truth in both suppositions. If, as Mignot believed from experimental researches, a stratified well-formed biliary calculus could be formed in six months, it seemed quite possible that a calculus could be formed as the result of changes set up in the mucous membranes by the onset of carcinoma before operation on, or death, of the patient. From the evidence obtained from the post-mortem statistics at Claybury Asylum he was inclined to the opinion that the incidence of primary carcinoma of the gall-bladder and biliary passages in its relation to gall-stones among the general population was by no means so great as hospital statistics would lead them to believe, and that consequently there was not sufficient justification for assigning to gall-stones so important a rôle in the production of primary malignant disease of the gall-bladder and ducts.

Professor S G. SHATTOCK demonstrated the Microscopic Structure of Uric Acid Calculi. He described the structure as studied by transparent sections made by the methods adopted by pathologists. Some such calculi were cancellous, others compact in structure; that was an obvious macroscopic difference, and it was connected with a difference in the mode of crystallisation. In the cancellous there was a nucleus of cuboidal crystals grouped in irregular trabeculæ, and upon that a series of concentric arcades with interspaces, built up of similar crystals, constituted the "body." In the case of the compact variety the structure was of cones of long crystals set radially to the centre; those might be marked with a series of concentric striæ, and by coarser, less well-defined zones of a finely crystalline material which might almost be named bacilliform and which lay in the lateral interstices between the longer elements. That material was uric acid; for although in marked amount, the most careful chemical analysis of the calculi, in bulk, showed a complete absence of ammonium, sodium, or calcium. A comparison of the different elements with those met with in urinary sediments showed that whilst the cuboidal crystals of the cancellous variety could be matched, elongated forms were rare. The elongation of the crystals, and so the production of the compact forms, was attributed to a highly saturated condition of the urine. The length assumed by crystals in supersaturated solutions was well shown. Miers had put forward the view that it arose from the diminished saturation of the fluid between the sides of adjacent crystals produced *ipso facto*

by the crystallisation, the extremities being free to grow at that end which lay in contact with the supersaturated part of the solution, whilst growth in other directions was retarded. In a supersaturated solution, agitation produced a shower of crystals; the deposition of the finely crystalline uric acid in association with the tufts of long crystals in the calculi was to be explained in the same way. In regard to the nuclei of uric acid (or other) calculi, although shed epithelium and mucus, &c., would always be available, their presence was not essential to start a concretion. In the cancellous kinds the nucleus was a chance aggregation of cuboidal crystals; and such a collection of "rubble" at times formed the very centre of a compact calculus; though in other cases a compact concretion arose as a radially disposed collection of longer forms, such as might arise in a supersaturated fluid at various independent points.

Dr. H. R. DEAN described a series of experiments designed to differentiate the various members of the typhoid and paratyphoid group. The experiments lead to the following conclusions: 1. By the use of the complement-fixation method B. typhosus, paratyphoid A, and paratyphoid B can be easily differentiated from one another. By the use of a suitable dilution of serum it is possible to differentiate paratyphoid B from B. Aertrycke. This series of experiments entirely confirms the classification of Bainbridge. 2. The complement-fixation method affords an extremely delicate and specific means of differentiating between various members of the typhoid and paratyphoid group. 3. Very closely allied organisms can only be differentiated after experiments sufficiently extensive to ensure a knowledge of the dilutions most suitable to the serum and extracts in use. 4. The group reaction and the degree of relationship between members of the group can be demonstrated by the use of various dilutions of an antiserum in the presence of extracts made from homologous and heterologous strains. 5. Under certain circumstances the degree of relationship can be seen during the course of an experiment by observing the time of onset of hæmolysis in the tubes containing the various extracts. 6. The group antibodies can be removed from the serum by a suitably arranged absorption experiment. 7. Excess of bacterial extract has an unfavourable influence on the fixation of complement. 8. The maximal fixation of complement is obtained when antigen and antibody are present in certain definite proportions.

Dr. W. J. PENFOLD read a paper on the Variability in the Gas-forming Power of Intestinal Bacteria. He said that if the B. coli (Escherich) be grown on agar containing a suitable concentration of monochloracetate of soda marked diversity of size was obtained as between the different colonies, some being very large and some being very tiny. If the concentration of the chloracetate was weaker this diversity of size did not occur, but secondary colony formation occurred. By repeated plating on this medium a strain highly resistant to chloracetate was obtained. This resistant strain would be found to have lost the power to produce gas from glucose and lactose and other sugars, but to retain the power to produce gas from alcohols—e.g., mannite, sorbite, dulcite, and glycerine. B. enteritidis (Gaertner) could be varied under the same conditions so that its gas-producing power in the case of different sugars was abolished. This varied organism produced, however, a good yield of gas from alcohols. This B. coli, which after the above treatment had lost the power to produce gas from glucose, retained the power to produce gas from formates. It gave a full acid reaction in glucose-peptone water overnight. This acid reaction occurred quite well in the anaerobic state. Anaerobic growth in glucose-peptone water did not cause the return of the power to form gas from sugars. Various considerations suggested that three ferments were required to ferment glucose in the case of the B. coli: one to produce formate from the glucose, one to split up the formate to carbonic acid and hydrogen, and one to produce acid from glucose other than formic acid. What this acid was would not be known until the chemical products of the new variety were investigated. It was unlikely to be derived by oxidation of the sugar since it occurred in the anaerobic state. The coli-form organisms isolated from urine seemed frequently to be atypical, and work by Herter, Mair, and Wilson, taken into consideration with the above production of artificial varieties, suggested that they might possibly arise by selective processes occurring in the body.

Dr. H. SEIDELIN, who had worked for some years at Yucatan, Mexico, demonstrated certain Protozoon-like Bodies in the Blood Organs of Yellow Fever Cases. The microscopical specimens showed intra-corpuscular and free forms from blood smears taken during life. Some of the intra-corpuscular forms presented a certain likeness to malarial parasites and the ring-shaped collections of chromatin-points seen in a kidney specimen suggested asexual forms undergoing division.

## LARYNGOLOGICAL SECTION.

*Exhibition of Cases and Specimens.*

A MEETING of this section was held on Jan. 6th, Dr. P. WATSON-WILLIAMS, the President, being in the chair.

The following cases, specimens, &c., were shown:—

Mr. CECIL GRAHAM: 1. Pharyngeal Cancer. 2. Chronic Ulcer of the Nasal Septum. There had been four attacks of nose-bleeding, and the galvano-cautery had been applied to a small ulcer on the right side of the septal cartilage. The ulcer was now seen to be triangular in shape, and the septal cartilage was exposed but not perforated.

Mr. A. J. WRIGHT: A woman, aged 34 years, with Swelling of the Arytenoids, Left Ventricular Band, and Inter-arytenoid Space, apparently tubercular, although van Pirquet reaction was twice negative. There was no pyrexia and no improvement with iodines.

Mr. NORMAN PATTERSON: A Denture removed from the Hypopharynx and Upper Part of the Œsophagus. The tooth-plate had disappeared while the patient was swallowing a piece of bread-and-butter. On examination great swelling and congestion were visible in the arytenoid regions. The tooth-plate was not visible, but was shown by a skiagram to be present. Under an anæsthetic the plate was seized and dragged out of the œsophagus, but was caught in the anterior pillar of the fauces, and had to be divided by means of bone forceps before it could be removed.

Mr. ALEXANDER R. TWEEDIE: Specimen of Deformity of the Palate with swelling shown to be pituitary. The patient died from inanition six months after birth. Median hare-lip existed and cleft of the soft palate, through which a soft swelling protruded springing from the roof of the naso-pharynx.—Dr. A. KEITH gave a very interesting demonstration on this specimen, which was a most important one from a developmental point of view, a mass of smooth muscle fibre being found between the two wings of the developing septum nasi. The soft swelling before mentioned seemed to represent pituitary tissue, and Dr. Keith considered that the growing round of bone and raising up of the pituitary body which normally took place in the development had failed in this case.

Dr. G. WILLIAM HILL: A new pattern Expanding Œsophagoscopic Funnel, and an improved Instrument for Examination of the Œsophagus and Stomach, combining direct and indirect vision. The stomach was brilliantly illuminated by the instrument, and small objects detected with great ease.

Mr. W. STUART LOW: 1. Tumour in the Left Parotid Region diagnosed as Cystic Adenoma. The exhibitor strongly advised early removal of tumours, though apparently innocent, in this region. 2. A man, aged 48 years, with a Hard Swelling in Right Submaxillary Region, considered by members to be probably a salivary calculus.

Mr. C. A. PARKER: Case of Laryngeal Tuberculosis.

Dr. W. H. KELSON: Case of Naso-pharyngeal Polypus in a young man. This had recurred after removal two and a half years ago, and Dr. Kelson proposed now to do a more extensive operation for its complete removal.—The PRESIDENT advised division of the septum nasi in this case in order to increase the accessibility of the tumour.

Dr. G. C. CATHCART: Tumour taking Origin behind the Right Tonsil, thought to be a fibroma; also a case of Ulceration of Left Vocal Cord in a man aged 67 years.—Case considered by members to be one of pachydermia, and Dr. W. JOBSON HORNE accounted for the hoarseness by the fact that the vocal cords were not quite on the same plane.

Dr. LIEVEN (Aix-la-Chapelle) demonstrated Instruments for the Intravenous Injection of "606." He stated that the routine treatment for syphilis should still be by mercury, and that relapses after "606" were considerably more frequent than generally supposed. It was most important in the intravenous injection of "606" that the drug should be introduced directly into the cavity of the vein, and should not get into the subcutaneous tissue at all. To make

certain of this blood was first allowed to flow from the vein into the apparatus, and then saline fluid injected before the "606" was introduced; and after the dose had been given saline fluid was again passed into the vein.

Dr. R. H. SCANES SPICER: Case of Malignant Disease of the Pharynx, with skiagram showing irregularities of the vertebræ, supporting his views as to the bearing of chronic irritation on the causation of cancer.

## MEDICAL SOCIETY OF LONDON.

*Exhibition of Cases.*

A MEETING of this society was held on Jan. 23rd with Mr. CHARTERS J. SYMONDS, the President, in the chair, who announced that the Fothergillian gold medal given triennially had been awarded to Dr. F. W. Mott for his researches on the nervous system, especially in connexion with syphilis.

Dr. WILFRED HARRIS showed a case of Syringomyelia with Total Anæsthesia in certain areas. The patient was a man, aged 35 years, who 12 months ago first noticed commencing numbness of the left hand, with difficulty in using the hand. That had steadily progressed ever since. He had had no pain, and had never noticed any unconscious burns or cuts. There was considerable difficulty in using his left hand owing to loss of sensation in the part. There was no muscular atrophy whatever in the hand or limb, and the muscular strength was normal. Well-marked athetosis of the hand was present, especially if the eyes were closed. Hemiatrophy of the tongue was present, the left half being much wasted. There was no weakness of the palate or eye muscles and no nystagmus. There was no weakness of the lower extremities, and the deep reflexes were normal, with flexor plantars. Arthropathy of the right tarsus had been present since early childhood. There was total anæsthesia to touch, pressure, pain, and heat over the left second, third, and fourth cervical areas, including the back of the head and neck from the lower jaw down to the second rib, ending sharply at the middle line. On the right side of the back of the head and neck there was delayed sensation to pain, and a certain degree of analgesia, but tactile sensation there was good. There was no loss of sensation of any form on the right hand or arm, but the loss to pain and heat on the left upper extremity was almost complete, and on the left hand below the wrist there was total anæsthesia to tactile as well as to painful and thermal sensations. Below the navel on the right side of the abdomen at the eleventh dorsal level an area of analgesia commenced, extending down on to the front of the thigh as far as the knee, fading away gradually, involving the eleventh and twelfth dorsal and the first, second, third, and part of the fourth lumbar areas.

Dr. HARRIS also showed a case of Sclerodermia with Hemiatrophy of the Trunk and Left Lower Extremity. The patient was a boy, aged 17 years, who first noticed about five years ago that the skin on the left leg below the knee became pimply and began to break down into ulcers. The leg gradually began to waste, and the condition of the skin had continued ever since to give trouble, being liable to recurrent ulceration. He had never had any pain, but the alteration of the skin on the left lower limb and trunk below the level of the nipples had gradually become more pronounced. No family history of anything similar was obtained. There was marked general atrophy of the muscles of the left leg and thigh, and also of the tissues of the abdominal wall and lower chest as high as just below the nipples (fifth dorsal level). The left half of the body at the level of the navel measured one inch less than the right. Electrical reactions were normal, though diminished. There were marked chronic inflammatory changes and healed superficial ulceration on the skin of the left lower extremity, the changes diminishing in degree above the knee. On the trunk there were definite patches of sclerodermatous change visible on the left side of the front of the lower part of the chest, with numerous small white areas resembling morphœa surrounded by areas of pigmentation. There was no trace of any anæsthesia or analgesia to pain or to heat. The cutaneous changes were visible only on the front of the chest and abdomen, limited sharply to the left side of the middle line, and ceasing just below the level of the nipples. There were no abnormalities in the upper part of the chest, in the left arm, neck, or face.

Dr. F. J. POYNTON showed a case of Mediastinitis, possibly syphilitic in origin. The patient was a man aged 74 years, who was admitted to University College Hospital on Dec. 30th, 1910, complaining of pains over the front of the chest, going through to the back, and conducting down the left arm. Shortness of breath had been present for six months. The pain was gnawing in character and more or less continuous, having no relation to food. Enlarged veins first appeared about three or four years ago on the upper part of the abdomen, and were preceded by a severe pain in that region. Since then they had been gradually increasing in size and distribution, and over the middle of the anterior aspect of the chest had joined into a "caput Medusæ." Dilated tortuous veins extended over the front of the abdomen and chest, also down the left arm—the flow in those over the chest was from above downwards. In both lower limbs there were well-marked varicose veins. Since admission the patient had been treated with potassium iodide. The pain had disappeared for the last 14 days, but more veins had appeared.

Dr. C. W. CHAPMAN and Dr. F. DE HAVILLAND HALL described similar cases.

Dr. HERBERT FRENCH showed a case of Bilateral Paralysis of the Sixth Cranial Nerve with Optic Neuritis following on fractured base of the skull. The patient was a boy, aged 12 years, who presented himself on account of squinting of the eyes associated with severe headaches. It was found that his motor nervous system was natural as regards his body and limbs; his pupils reacted to light and accommodation, and sometimes the axes of the eyes were parallel, though more often there was convergent strabismus, sometimes one eye, sometimes the other appearing to squint the worse. There was complete paralysis of each sixth cranial nerve, the third and fourth nerves being unaffected. Ophthalmoscopic examination showed well-marked optic neuritis in both eyes; the filling up of the physiological cup, the active hyperæmia of the discs and the blurring of their edges being very much more developed in the left eye than in the right. The boy had a scar over the left fronto-temporal region, and upon inquiry it transpired that he had fallen over some banisters in August, 1910, from a height of 30 feet, striking his head in the region of the scar upon a concrete pavement, after which he developed extravasation of blood beneath both conjunctivæ and had almost certainly fractured the base of his skull. It was always possible that in a case of this kind injury to the bones had led to the development of a neoplasm, but in the present instance it seemed much more likely that the fractured base, having been followed by the formation of extensive callus in the region of the basi-sphenoid bone behind the sella turcica, this callus was now either pressing upon or actually including in its substance the long sixth nerves and was also behaving like any other intracranial tumour and producing both severe headache and optic neuritis. As regards the prognosis, the probability was that in the course of months the natural process of moulding of callus would lead to diminution in its bulk and that the optic neuritis would simultaneously subside. Whether or not the sixth cranial nerves would recover would depend upon whether they were actually included in the callus or merely pressed upon. It was possible for a motor nerve to be sufficiently pressed upon to be unable to transmit impulses to the muscles that it supplied without the axis-cylinders of its nerve fibres becoming actually degenerated, in which case, with diminution in the pressure, complete motor power in the affected muscles readily returned; if, on the other hand, the axis-cylinders had degenerated, it was so difficult to maintain the nutrition of the external rectus muscles which could not be efficiently treated by massage or electricity, owing to the difficulty of treating them by the latter methods, that even though regeneration might subsequently occur from the central ends of the motor nerves paralysis of the muscles would persist. This seemed likely to be the case here; in most cases of cranial nerve paralysis from fracture of the skull, however, the prognosis as regards recovery of motor power was good. Two months ago there was cerebral vomiting which had now ceased and the headaches were less severe than they were, so that the callus had presumably become less bulky than it was. It was worthy of special note that in the above case the optic neuritis was very much more marked upon the side upon which the injury to the head occurred.

Dr. FRENCH also showed a case of Aortic Disease with

unusual features. The diagnosis was (?) congenital coarctation. The patient was a girl, aged 10 years, who was found to have a cardio-vascular lesion in the course of routine examination for symptoms other than cardiac. The impulse of the heart was in its normal position—namely, in the fourth left intercostal space in the left nipple line. Percussion detected cardiac impairment of resonance for about an inch out to the left of the nipple line and also for a finger's-breadth to the right edge of the sternum, but not upwards above the third left rib. Although the cardiac impulse was not situated abnormally, it seemed likely that there was an increased transverse diameter of the heart, due very probably to hypertrophy of the left ventricle. This was confirmed by the X ray appearances of the heart. There was no thrill at the cardiac impulse, but over the base there was an extremely well-marked rumbling one, systolic in time, with its maximum intensity not in the second right intercostal space close to the sternum, as would be expected if there was stenosis of the aortic valves, but in the root of the neck behind the clavicular head of the right sterno-mastoid muscle immediately above the inner end of the right clavicle. This rumbling thrill, though felt here with maximum intensity, could also be felt all over both sides of the neck along the course of each carotid artery as high as the angle of the jaw on the right side, not quite so high on the left; also outwards half way to the point of the right shoulder along the course of the right subclavian artery, and similarly to the left along the course of the left subclavian artery, below the left clavicle, as far as the hollow in front of the left glenoid cavity; downwards the thrill, rapidly decreasing in intensity, could be felt close to the right border of the sternum in the first right intercostal space. Corresponding with the thrill there was a rumbling systolic bruit audible all over the thorax, front and back. The point of maximum intensity of this systolic bruit was precisely that of the maximum intensity of the thrill—namely, the root of the neck immediately above the inner end of the right clavicle; it could be heard all along the course of the right subclavian artery, right axillary artery, and right brachial artery, half-way down the right upper arm; along the left carotid artery, up in front of the left ear, and even in the left temporal artery, the bruit here being transmitted higher on the left side than on the right, though in the case of the thrill it was felt higher up on the right than on the left side. The systolic bruit was also quite loud over the left subclavian artery, getting faint in the left axilla, and disappearing in the upper part of the left arm. The child had never had rheumatic fever; she looked sturdy and well-thriven; there was no history of acute rheumatism in the family. There was neither anæmia nor polycythæmia. As regards the diagnosis, it was easy enough to exclude the three commonest varieties of congenital heart disease; with pulmonary stenosis there would almost certainly be cyanosis and clubbing of the fingers, neither of which was present in this case; in addition to which the bruit with pulmonary stenosis was nearly always louder in the second left intercostal space close to the sternum than anywhere else; and although it might be audible over a wide area of the thorax, it was not transmitted into the carotid arteries in the neck or into the arteries in the axillæ and arms. The same argument would serve to exclude perforated septum ventriculorum, the bruit of which, moreover, was always loudest over the lower half of the sternum, particularly at some point between the fourth right and left ribs. The strictly systolic time of the bruit would exclude patent ductus arteriosus, with which the bruit generally ran through systole and diastole with a maximum intensity near the second sound, in addition to which with patent ductus arteriosus the bruit was heard loudest as a rule in the third left intercostal space, near the sternum, and not above the inner end of the right clavicle, as in the present instance. It was conceivable that the patient might be suffering from acquired aortic stenosis, but two arguments against this were, first, that the left ventricle did not appear to be materially enlarged, as it almost certainly would be if there were sufficient stenosis of the aortic valves to produce so marked and widely transmitted a bruit and thrill; and, secondly, with valvular stenosis both the bruit and the thrill would almost certainly have their point of maximum intensity near the inner end of the second right intercostal space, and not above the right clavicle, as in the present instance; nevertheless, that there was stenosis in the aorta seemed clear, and if it was not at the site of the valves it would seem to be in the aorta just beyond the valves. The physical signs did not suggest that the condition was one of ordinary coarctation of the aorta, for this lesion was usually situated beyond the origin of the left subclavian artery, in which case neither thrill nor bruit would be transmitted, one would expect, so far along the right subclavian, right carotid, left carotid, and left subclavian, as was here the case. It was suggested, however, that there might be coarctation of the aorta between the aortic valves and the origin of the innominate artery, and that this was the lesion in the present instance.

Mr. A. E. J. BARKER showed a case illustrating the use of Bier's Bandage for Ununited Fractures. The patient was a man, aged 21 years, who fell off his bicycle in Suffolk on July 24th, 1910, sustaining a compound transverse fracture of the humerus and an external wound of the soft parts. He was dressed by a medical man and advised to go to London. On admission the next day the bone was wired. There were much laceration of the soft parts and periosteum and extravasated blood to a large amount. The fracture ran across the insertion of the deltoid. The wound was almost completely closed. Stitches had to be removed on the second day, as there were much swelling and a rise in temperature. A large quantity of altered blood clot and turbid fluid was let out. After this the temperature fell to normal until the end of the case. Skiagrams showed perfect coaptation. When Mr. Barker returned from his holiday on Sept. 29th there was still a small sinus, and a skiagram showed the ends necrosing. The sinus was split and a small cap of bad bone removed from each end with the wire. A rod of aluminium was placed in the medullary cavity and the ends were pressed together over it. The sinus now began to contract, but there was no sign of union of the bone. On Oct. 18th Bier's bandage was applied for an hour. On Nov. 1st the sinus was soundly healed, but there was still no repair of bone. The elastic bandage was now applied for two hours morning and evening. On Dec. 17th callus was first seen to be forming, and motion between the bones could not be felt as before. By Jan. 1st there was a well-marked mass of callus and the fracture appeared firm. On the 10th the splint was left off. On the 16th the X rays showed good union and perhaps some rarefaction of the upper part of the humerus from disuse. The patient had been encouraged since then to active use of the limb and had had massage applied.—Mr. V. WARREN LOW described similar cases in which he had successfully applied Bier's method.

Mr. P. MAYNARD HEATH showed a case of marked Hypertrophic Arthritis in the Knee of a man.

Dr. F. S. PALMER showed a case of Traumatic Epilepsy.

Dr. J. WALTER CARR showed a case of Epilepsy with Deformity of the Skull.

Dr. J. L. BUNCH showed a case of Rodent Ulcer.

The PRESIDENT showed a case of Multiple Rodent Ulcer and Multiple Epitheliomata of the Face associated with Epithelioma of the Palate.

## SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

### *Yellow Fever.*

A MEETING of this society was held on Jan. 20th, Professor RONALD ROSS being in the chair.

Dr. H. E. DURHAM, continuing the adjourned discussion on Sir Rubert Boyce's paper on Yellow Fever in West Africa,[1] criticised severely the administration of the colonial service. He considered that a mild case of yellow fever was liable to be diagnosed as bilious remittent fever.

Sir PATRICK MANSON said that he understood Sir Rubert Boyce considered the best way to exterminate yellow fever was to destroy the stegomyia mosquito, and in that conclusion the society agreed. The other conclusion of Sir Rubert Boyce was that yellow fever was endemic on the West Coast of Africa, and by endemic he meant that the disease occurred in all the principal towns of West Africa. Sir Patrick Manson agreed that yellow fever occurred year by year in West Africa, but he entirely disagreed with the view that the disease was endemic in West Africa.

After Dr. J. W. W. STEPHENS had spoken, Dr. G. C. WALKER (Sanitary Officer, Gold Coast) pointed out that a

[1] THE LANCET, Nov. 26th, 1910, p. 1552.

great deal of yellow fever could be checked if the loose scrub around the towns in West Africa was kept down, because the scrub held so many stegomyia mosquitoes.

After Dr. W. CARNEGIE BROWN had spoken on the question of bilious remittent fever, Professor RONALD ROSS said that the stegomyia mosquito was found all over Africa and yet it was contended that yellow fever was endemic only on the West Coast.

Sir RUBERT BOYCE, in reply, said that his conclusions were summed up by stating that he had brought forward a mass of evidence which showed the almost continuous occurrence of well-recognised outbreaks of yellow fever for the past 100 years, and an unbroken record for the last 20 years; that the natives of West Africa had shown an almost inappreciable death-rate from the disease, whereas amongst the whites the death-rate had varied from 70 to 100 per cent.; that with the immense black population and the very scanty white population the death-rate amongst the whites had been vastly greater than amongst the natives, and that this extraordinary difference could only be explained by the hypothesis of immunity; that the West Indian negroes were susceptible just like the white newcomers; that the natives could get yellow fever—in other words, that the black had no natural immunity against yellow fever; that the explanation of yellow fever in West Africa was similar to that adopted for other countries by the Brazilian, Cuban, French, German, and American official commissions—namely, that the native or indigenous races were the source of the virus, and that as in malaria they harboured the disease in some form; and that segregation afforded complete protection against yellow fever.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF SURGERY.

*The Treatment of Laryngeal Stricture.—The Diagnostic Value of the Luys Segregator.—The Treatment of Chronic Urethritis by Ointments, and a New Instrument Therefor.*

A MEETING of this section was held on Dec. 9th, 1910, Mr. R. H. WOODS, the President, being in the chair.

The PRESIDENT reviewed the history and development of the various methods of treating stricture of the larynx. He showed a patient, aged 5 years, on whom he had performed the operation of laryngostomy nearly 12 months previously for complete cicatricial occlusion of the larynx following diphtheria and laryngo-tracheotomy. The patient's larynx was now quite patent and functioned perfectly during swallowing, but he had not yet decided to close the fistula lest recurrence should take place. He also showed a case of extradural cerebellar abscess and lateral sinus thrombosis, where, in addition to the radical operation on the mastoid, he had tied the internal jugular vein.—Dr. P. DEMPSEY said that the strictures, wherever met with, were not easy to deal with, and laryngeal strictures had always been more or less of a bugbear up to the introduction of laryngostomy. The tubes were unsatisfactory, and in very small strictures it was almost impossible to get any kind of dilating apparatus in from above. He would like to know if the tracheal tube was kept in during the operation, and if the anæsthetic was administered through it. Did Mr. Woods think it would be an advantage to administer a vaccine before such an operation? One of the great dangers was that of sepsis within the first week or so, and possibly a vaccine might prove a preventive. He thought that grafting was a new and good plan. Was one satisfied with the mere incision right down through the strictured part? Did one go through the posterior wall of the cartilage, and, if so, was there any danger of wounding the œsophagus in such cases, and might it not be a good thing to pass a bougie? Did Mr. Woods recommend the leaving of a bridge between the tracheal cannula and the laryngostomy opening? Could he give some idea of the mortality of the operation and the average time it would take an ordinary cases of stenosis from beginning to end? He thought a great many such cases were due to faulty tracheotomies performed in a great hurry and in the wrong position.—Dr. W. MURPHY said that the one thing that struck him was that the surgeon must tell the patient what a wearisome time mechanical dilatation would be, and must himself be provided with infinite patience, but it might be well to try dilatation by mechanical means through the mouth before undertaking a rather serious operation. They wished to know how much of the soft parts inside the larynx ought to be removed. The removal of the false vocal cords had been suggested. In Gluck's operation was there not a danger of having hair growing from the inside of the larynx when the skin of the neck was inturned in closing the laryngostomy wound?—Mr. A. J. BLAYNEY had recently made use of a dose of anti-streptococcic serum. He was much pleased with the results subsequent to the operation, and thought it might be of use in laryngeal cases.—Dr. M. HAYES asked if it would be advisable, in malignant disease of the larynx, to perform such an operation as described so as to form a permanent opening in the larynx for applying irradiation.—Dr. STOKES said he had seen cases where the patient could never do without the tracheotomy tube again. Were these usual cases? How did the vocal cords get on in such cases? It seemed rather drastic to have tin tubes and rubber tubes in one's vocal cords for the best part of a year. Were the strictures usually due to diphtheria, and were they localised in any special part of the larynx?—The PRESIDENT, in reply, said the tracheal tube was kept in, and the child was given chloroform through Junker's inhaler. He had used vaccine in a good number of cases, but he thought it gave uncertain results. In a recent case where he extirpated the larynx of a man he used a vaccine grown from the patient's throat. The operation was not performed for six days after inoculation. The man died from profound sepsis within two days. Within the last three weeks he had excised a cancer, taking away the chief portion of the upper jaw and exposing the base of the skull. He did not depend on any vaccine, but applied a solution of chloride of zinc to the raw surface, and the patient's temperature never rose. As to incision of the cicatrix it was said to be quite enough to cut through the cicatrix, and then depend on the dilatation to cause absorption of the tissue. He did not think that as safe a proceeding as to excise all the cicatricial tissue he could find. It then occurred to him to try the grafting. He did not think a bridge between the tracheotomy and laryngostomy wounds would be possible unless the case was one in which a low tracheotomy had been performed. He believed the mortality was 15 per cent. or 20 per cent. The average time was said to be three to six months, but such a period was much too short for his case. It was 12 months since he had done the child exhibited, and if he took out the tube in six days the larynx would show some slight contraction. They had to wait until all tendency of the cicatricial tissue to contract had disappeared. Unless the false vocal cords were included in the scar they should not be touched—the rule should be to preserve everything that could be preserved. As to hair, in a man he would probably turn the flap up from below the wound; it would be most serious to put growing hairs inside the larynx. The kind of cancer that would likely get any good from X rays would necessarily be a superficial one. He did not think the operation would be much use for the treatment of cancer by radium. In the case shown the vocal cords were involved by the cicatrix and were not visible at all. The child, however, had got good substitutes. Looking at it from below they could not tell it from a perfectly normal larynx. In swallowing not a crumb or drop went the wrong way. He thought the operation showed a very distinct advance in the treatment of such hitherto very unsatisfactory cases.

Mr. R. A. STONEY read a paper on the Value of the Luys Segregator.—Mr. L. G. GUNN had used the instrument and found it difficult to insert; it was often very painful on account of the pressure and the uncomfortable position, and he was not satisfied with the accuracy of its results. It was an excellent instrument with a healthy bladder, but they must be certain that the bladder was healthy, otherwise the results would be falsified. It should be used in conjunction with the cystoscope.—Dr. STOKES had formerly spoken against the instrument, but he had since found that his difficulties were due to his own inexperience.—Mr. STONEY, in reply, agreed with Mr. Gunn as to the uselessness of the instrument in disease of the bladder; but in extensive trouble of the kidney without bladder disease he considered it of very considerable use. It was not to be advocated in opposition to other methods. If too much methylene blue was injected it

would fill the pouch and overflow to the other side and so escape on both sides.

Mr. ANDREW CHARLES, in a paper on the Treatment of Chronic Urethritis by Use of Ointments in the Urethra and Presentation of New Instrument for the application of same, said the ordinary routine of patients injecting aqueous solutions was in many instances fraught with failure, due (1) to inability of the patient to inject effectively; (2) to the fact that the injections had not sufficient time to act; (3) to uncertainty that the solutions were brought into contact with the entire inflamed surface of the urethra; and (4) the glandular orifices might be obstructed with plugs of mucus which did not allow the fluids to penetrate. Oleaginous preparations, according to Janet, adhered to the surface of the urethra, were moulded into the folds, and became incorporated with the mucus and entered into contact with the mucosa, thus permitting a prolonged action of the drug. Lanoline was the best basis as it had the power of taking up aqueous secretions and adhered better to the mucous membrane. Urination evacuated the ointment only in small particles for as long as 36 hours (Finger). The instrument which he suggested for the application of ointments combined mechanical effects, and at the same time applied an ointment effectively to the urethral surface. It possessed the following advantages: (1) simplicity; (2) could be easily cleaned; (3) the urethral surface was completely covered with a large quantity of sterile ointment; (4) the urethra could be massaged on the surface of the instrument, so that the ointment could be forced into the folds of the urethra and into the ducts of the gland; and (5) it acted as a dilator.

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UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on Jan. 11th at the Royal Army Medical College, Grosvenor-road, S.W., Colonel Sir David Bruce being in the chair.—Captain W. A. Woodside read a paper on the Training of Territorial Medical Units. He described the general method of training of territorial medical units, dwelling on the various difficulties which were encountered and the methods he had adopted for overcoming them. He strongly advocated that after the first year all privates should devote their chief attention to the special duty for which they were detailed in the duty roster, since there was not sufficient time to teach Territorial privates more than one set of duties. On the other hand, non-commissioned officers should have a general knowledge of all duties. It was very necessary that the adjutant should have a competent knowledge of horse management and he gave illustrations of defective arrangements which had resulted from a lack of this knowledge.—Lieutenant-Colonel C. H. Melville read a paper on the Load of the Infantry Soldier. After a preliminary historical survey of the question he showed that the present weight carried in nearly all armies was too great, the more especially as in war it would have to be carried from the start by reservists out of training. He gave details showing that the limit of weight which could be carried without excessive strain was 22 kilogrammes (48½ lb.), while the British soldier, who was quite lightly loaded compared with the soldier of most other armies, carried 58½ lb. Arms, ammunition, and clothing accounted for 35 lb. of this and could not well be reduced. Any reduction could only be made by lowering the weight of accoutrements, great coat, shelter appliances, and "necessaries." A saving of nearly 2½ lb. could be made by making the water-bottle and mess-tin of aluminium and the straps of thinner material. He considered that a great saving could be made by replacing the great coat (6¾ lb.) by a short pea-jacket and a pair of overalls or by making the coat of lighter material. Of the "necessaries" (9 lb.) he would relegate all the cup, cutlery, and small book (total 400 grammes) along with pack (800 grammes) to the second line transport. Clean shirts, towels, soap, and the like were luxuries on service, and expensive luxuries when they were carried at the expense of the fighting efficiency of the soldier.—Surgeon-General Gubbins (Director-General, A.M.S.), Lieutenant-Colonel R. J. S. Simpson, Lieutenant-Colonel J. B. Wilson, Major W. S. Harrison, Major S. Lyle Cummins, Lieutenant-Colonel C. H. Burtchaell, Surgeon-General W. Babtie, Major W. W. O. Beveridge, and Colonel Sir David Bruce took part in the discussion.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 6th, Dr. Phineas S. Abraham, the President, being in the chair.—The President showed a case of Tylosis, also a case of "Mixed" Leprosy in a male, treated with solid $CO_2$ with excellent results.—In reply to Mr. W. McAdam Eccles the President said that leprosy had been treated with "606" but without effect.—Dr. Seymour Taylor showed a case of Typhoid Fever with two relapses, and a case of Pneumothorax.—Dr. Frederick Palmer: A case of Acromegaly in a female aged 58 years, and a case of Rheumatoid Arthritis.—Mr. L. A. Bidwell: A case of Removal of the Posterior Part of the Tongue and Epiglottis for Carcinoma and Ileosigmoidostomy for Artificial Anus.—Mr. McAdam Eccles: A case of Cystic Swellings of the Forehead and in the Thyroid Region in a male aged 65 years. The swelling on the forehead he considered to be a dermoid cyst, the thyroid swelling either a cyst of the thyroid or a tubular dermoid in connexion with the thyro-glossal tract.—Dr. T. Grainger Stewart: A case of Pseudo-bulbar Paralysis of Doubtful Origin, probably a case of Disseminated Sclerosis.—Dr. Arthur Saunders: A case of Tuberculous Adenitis in a girl aged 17 years. The diagnosis lay between lymph-adenoma and tuberculous glands. Examination of a gland removed for the purpose showed it to be tuberculous.—Mr. N. Bishop Harman: A case of Argyrosis of the Conjunctiva produced in a youth, aged 15 years, by the continuous use of protargol drops over several years; and a case of Tuberculous Kerato-iritis in a woman, aged 21 years, in which injections of tuberculin T.R. were made with most beneficial results; also a case of Posterior Polar Cataract with Persistent Hyaloid Vessels in a youth aged 16 years.—Dr. H. J Davis: A case of Empyema of the Antrum in a boy, aged 7 years, with recovery after three operations; Empyema of the Antrum in a man, aged 71 years, in whom the disease had become malignant and the upper jaw had been excised; a case of Recurrent Post-nasal Growth in a youth, aged 17 years, which occurred after three operations (the growth showed large vascular spaces and adenomatous tissue with small round cells, evidently maligant); a case showing the Stapes in the Oval Window in a woman, aged 25 years, on whom a radical mastoid had been performed for otorrhœa (the malleus and incus were removed, the bone was healed in six weeks, and the patient could hear a watch at six inches).—Dr. Kenneth E. Eckenstein, for Dr. J. F. Halls Dally, gave a demonstration of the Sphygmo-oscillometer, an instrument devised by Dr. Pachon of Paris to estimate the blood pressure.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Jan. 6th, Mr. F. Lace, the President, being in the chair.—Dr. A. J. B. Leckie showed a case of Primary Carcinoma of the Liver in a girl aged 6 years (confirmed post mortem). The weight of the liver was 87 ounces.—Mr. Forbes Fraser showed a specimen of an Ovarian Dermoid which had ruptured into the peritoneum. It was attached to the sigmoid flexure by a tubular connexion about one and a half inches in length. The cyst contained foul-smelling fæcal material and vegetable débris, the remains of fruit skins, seeds, orange-pips, &c., being recognised.—Dr. J. Wigmore read notes of two cases of Cæsarean Section and discussed the indications for craniotomy, symphysiotomy, pubiotomy, and Cæsarean section.—Dr. Charles J. Whitby read a paper on the Cancer Problem in the Light of Recent Research. He said that the importance of the cancer problem was enforced by the estimation of Dr. Bashford that the chance of a man over 35 years of age dying from cancer was 1 in 11, and of a woman 1 in 7. He referred to the results of recent researches which seemed to confirm the rationality of treatment by radium and the X-rays, and remarked that it would be premature to apply the results of experimental immunisation to man until such time as definite effects could be produced in animals upon growing vascularised tumours of spontaneous origin as distinguished from recently introduced transplanted growths.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Jan. 17th, Mr. J. Howson Ray, the President, being in the chair.—An address, entitled "The Life-history, Function, and Inflammation of the Appendix," was delivered by Mr. Edred M. Corner. He dealt in the first instance with the physiology of digestion, and detailed the various steps in the process

until the food arrives in the ileo-cæcal region. He laid stress on the fact that in this region of the alimentary tract bacteria were more numerous than at any other part, and discussed their influence in the production of appendicitis. He also drew attention to the part played by foodstuffs. The function of the appendix he dealt with at some length and gave three examples of those cases which he designates as "unconscious and unrecognisable appendicitis."—Dr. H. R. Hutton proposed, and Mr. A. H. Burgess seconded, a vote of thanks, to which Mr. Corner suitably replied.

# Reviews and Notices of Books.

*The World of Life: A Manifestation of Creative Power, Directive Mind, and Ultimate Purpose.* By ALFRED RUSSEL WALLACE, O.M., D.C.L., F.R.S. London: Chapman and Hall, Limited. 1910. Pp. 408. Price 12*s.* 6*d.* net.

THE name of Alfred Russel Wallace is greeted with affection and respect by all directly interested in the progress of science, though many are at absolute variance with him in some of his views. A large reading public doubtless will hasten to make themselves acquainted with the latest message of this veteran in science who just a few days ago completed his eighty-eighth year, and who happily has proved his vigour and force of intellect by being able to "summarise and complete his half-century of thought and work on the Darwinian theory of evolution," now presented in "The World of Life." He, however, goes far beyond Darwin: in fact, he asserts that he purposely undertook a popular and critical examination of those fundamental problems which Darwin expressly excluded, such as the causes of life itself and its more fundamental and mysterious powers—growth and reproduction.

After painting in picturesque language the structure of a bird's feather, the marvellous transformation of the higher insects, and the elaborate wing-scales of Lepidoptera, he tries to show the absolute necessity for an organising and a directive life-principle in order to account for the very possibility of these complex outgrowths, and contends that they necessarily imply a creative power, next a directive mind, and an ultimate purpose. And what is this purpose? The development of Man, the one crowning product of the whole cosmic process of life-development, the only being which can appreciate the hidden forces and motives everywhere at work, and can deduce from them a supreme and over-ruling Mind as their necessary Cause.

The author sees in the remarkable series of events he records in the process of evolution, a creative effort carried on from the beginning of time by an active, creative, conscious spirit with one object, the perfection of man and his spiritual development—as he puts it, "the earth and organic nature having been designed for the development of the human race." The final outcome of all the marvellous cosmic and other changes in geological time and the purpose of the whole series of living beings were in this view to serve the uses and to add to the enjoyments of man—a doctrine which, he admits, is highly distasteful to a large proportion of scientific workers. It is a strange philosophy: all had but one object—the perfecting of man and his spiritual development. Everything on earth and in the sky, the birds of the air, the beasts of the field, the gorgeous insects and the flowers, the minerals in the earth, and the varied products of the vegetable kingdom, "the earth veil" of Ruskin, that omnipresent clothing of the earth's surface produced by the infinitely varied form of vegetation, all were created for man's profit, use, and delectation, and to provide a spiritual school for man. Man is the centre round which turns the whole of this elaborately evolved universe—"this earth, with its infinitude of life and beauty and mystery, and the universe in the midst of which we are placed, with its overwhelming immensities of suns and nebulæ, of light and motion, are firstly for the development of life culminating in man; secondly, as a vast schoolhouse for the higher education of the human race in preparation for the enduring spiritual life to which it is destined."

Leaving aside these ulterior aims, let us glance at the author's text itself, apart from his views on design and on the present as a preparation for a future spiritual state. He sets forth in charming and picturesque language, with a delight and freshness almost boyish in its earnestness, a popular account of the story of evolution, insisting on the co-relation and co-adaptation between the development of the vegetable and animal life through the whole geological period up to the present. Beginning with the question, What is Life? he gives what he calls a tolerably complete definition of life as "that power" which does certain things. With Haeckel's dislike of the dogmas of theologians, he will, however, have none of the Haeckelian philosophy. About one-quarter of the book is taken up with the consideration of species, their numbers, variety, and distribution, much emphasis being placed on variability, on the detailed distribution of plants—British, temperate, and tropical floras—and the wonderful adaptations of some plants to seasons of drought. When considering the distribution of animals, birds and bird-life seem to fascinate the author. He calls birds the most familiar, most beautiful, and the most wonderful of living things, the most specialised of all the higher animals, and, so far as perfection of organised structure is concerned, considers them to hold a higher place than the mammals themselves.

The story of Darwin's conception of "Natural Selection," dependent on heredity, variation, and enormous power of increase of plants and animals, is told with graphic detail and plentiful illustration, including an account of a flight of pigeons 240 miles in length and composed of 2000 millions of these birds, as narrated by Wilson. A similar story is told of the migrations of the lemmings of Norway. "Mutation" and "Mendelism" are ruled out of court as hopelessly inefficient and ludicrously inadequate as substitutes for the Darwinian factors in the world-wide and ever acting process of the preservation and continuous adaptation of all living things. The author waxes eloquent and writes with zest on the theme that the entire animal world depends absolutely on the equally vast and varied vegetable world for its very existence, and that the variety of insect tribes depends on the overwhelming variety of plant species. At last he finds a use for mosquitoes as the food of birds, especially birds that breed in the Arctic regions. A new significance is also found in the colour of nuts. The wonderful co-adaptation of birds and insects leads to a very interesting account of "recognition marks," which are of great importance—perhaps absolutely essential—in the evolution of new species, and in this he gives us a most interesting review and criticism of colour in all its varied relations. In his "Extensions of Darwinism" he has a good word for Weismann's theory of "Germinal Selection"; but here he runs off at a tangent against certain capitalists and legislators, which he calls "a digression." His general conclusion, reiterated as to life-development, is that "beyond all the phenomena of nature and their immediate causes and laws there is 'Mind and Purpose,' and that the ultimate purpose is (so far as we can discern) the development of mankind for an enduring spiritual existence." Our great cities are the "wens," the disease-products of humanity, and until they are abolished there can be no approach to a true or rational civilisation according to the author's thesis that to explain all the phenomena of the whole world

of life we require to postulate the continuous action and guidance of higher intelligences, and that these have probably worked towards a single end, the development of intellectual, moral, and spiritual beings.

Instead of playing the part of critic, we have let the author speak for himself. If we do not wholly agree with his anthropocentric view of creation, and to many it will appear as if the very essence of the idea of evolution is at least greatly minimised thereby, we are none the less charmed with this very readable and delightful book as a popular account of the course of evolution.

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*Diseases of the Joints and Spine.* By HOWARD MARSH, M.A., M.C. Cantab., F.R.C.S. Eng., Master of Downing College and Professor of Surgery in the University of Cambridge; Consulting Surgeon to St. Bartholomew's Hospital and to the Hospital for Sick Children, Great Ormond-street; Corresponding Member of the Orthopædic Association, New York. Third edition, enlarged and revised by the author and by C. GORDON WATSON, F.R.C.S. Eng., Surgeon to the Metropolitan Hospital; Assistant Surgeon to St. Bartholomew's Hospital and to St. Mark's Hospital for Fistula. With four coloured and eight black and white plates, and over 100 illustrations in the text. London: Cassell and Co., Limited. 1910. Pp. 632. Price 10*s.* 6*d.* net.

SINCE the second edition of this work appeared many advances have taken place in the knowledge and understanding of the various forms of septic arthritis, and in consequence of the application of the X rays to diagnosis and the addition of vaccine therapy to methods of treatment a great deal of new material has accumulated. To make way for the additions and revisions which have been thus called for, without too greatly increasing the size of the volume, some of the case narratives have been omitted. But, as in previous editions, the volume is still a record from the clinical standpoint of the personal experiences of the author, with especial reference to those methods of treatment which in his hands have seemed to be best suited to the various conditions with which he deals.

Within the compass even of 632 pages it is impossible fully to discuss the principles and practice of the treatment of the numerous subjects included, and many excellent methods of treatment are therefore not noticed. The various affections are discussed in the first 15 chapters in a general way, and afterwards in chapters XXIII. to XXX. each joint is considered separately in regard to the affections to which it is most liable. Special chapters on ankylosis, excision of joints for tuberculous disease, interosseous pressure in joint disease, bone-setting, and movements and massage are instructive and interesting, enunciating principles and expressing views of the most approved kind, and full of sound practical suggestion. We would draw attention particularly to the chapter on interosseous pressure in joint disease, where the correct principles of treatment by extension with weight and pulley are laid down in a manner both forcible and convincing. A confusion of terms and ideas has been corrected by the proper and up-to-date classification of the many different pathological states which in the loose phraseology of every-day practice go under such names as rheumatic gout, chronic rheumatic arthritis, &c. The paragraphs on the pathology of some of the secondary forms of arthritis and the chapter on congenital dislocation of the hip-joint cannot be said to be quite up-to-date, and the radiograph of the latter condition on a plate facing page 472 has not been taken with the object of exhibiting the length and direction of the femoral neck, a circumstance which deprives the photograph of some of its practical value. Diseases of the spine are comprised in 74 pages, forming Part II. of the volume, dealing with tuberculous and malignant disease, spondylitis deformans, and neurotic spine. It will therefore be seen that this forms a very small portion of the work.

The book is a record of Professor Howard Marsh's experiences, contains the details of many interesting cases, each with its point of instruction in diagnosis and treatment, and will be found of great practical value to the surgeon.

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*Manual of Diseases of Women.* By W. E. FOTHERGILL, M.A., B.Sc., M.D. Edin., Assistant Gynæcological Surgeon, Royal Infirmary, and the St. Mary's Hospitals, Manchester; Clinical Lecturer in Obstetrics and Gynæcology in the Victoria University of Manchester. With 144 illustrations in the text. London and Edinburgh: William Green and Sons. 1910. Pp. 433.

THE principles upon which the author has written this manual are well stated by him in the preface. "The life-history of the female reproductive organs is characterised by a period of rest following the time of early development, by a second period of development at the commencement of their functional life, and by a period of retrogression at its close. In addition to these developmental crises the organs are the seat of changes occurring in monthly cycles, and generally also of more extensive changes involved in actual reproduction at varying intervals. The border-line between health and disease is crossed in structures that are undergoing rapid tissue change far more often than in those in which construction, destruction, and reconstruction are more slow and gradual."

In every woman of reproductive age tissue changes occur every month which are so extensive and so rapid that they have no parallel in the whole life-history of the male subject. It is this difference which underlies the distinction between "the diseases of women" and all other branches of medicine. In this book, after a preliminary section dealing with methods of examination and diagnosis, the actual diseases are considered under: Errors of Development, Circulatory Changes, Mechanical Conditions and Injuries, Results of Infection, Progressive Changes, and Retrogressive Changes.

The first section on errors of development is illustrated by some good diagrams. In considering circulatory changes and pelvic congestion resulting therefrom Dr. Fothergill lays stress upon the important fact that, by many authors, chronic venous congestion, hypertrophy, and subinvolution are all classed together with chronic infection under the erroneous and misleading term "endometritis." In the same way in many text-books of gynæcology the grave mistake is made of asserting that the pain in the sides due to chronic pelvic congestion is due to ovaritis, a disease much more often talked about than seen. We need not say that the author strongly condemns such errors as these, leading, as they do, to a misconception of the real condition, and often to meddlesome and harmful treatment. Young girls constantly have ovarian pain, but true ovaritis in such patients is almost unknown.

In the chapter dealing with Mechanical Conditions and Injuries Dr. Fothergill supports the view that the firm attachment of the uterus, vagina, and bladder is effected mainly by the connective tissue sheaths surrounding the vessels, nerves, and lymphatics of the pelvis. This hypothesis appears to us to represent only a part of the truth, and we cannot accept the view that any one portion of the pelvic floor plays the only, or indeed the main, part in supporting the pelvic viscera. We see no difficulty in accepting the more general view that all the component parts of the pelvic floor take their share in anchoring the pelvic viscera in their places, and among those structures the connective tissue sheath of the vessels is no doubt of great importance. Is not the fact that women who have the perineum torn right through practically never have uterine prolapse explained not by the reason the author gives—namely, that rupture of

the perineum and levatores ani is not a cause of prolapse—but rather to the fact that when such extensive tears occur the tissues are not only saved thereby from undue stretching, but also such extensive tears are usually sewn up very carefully? In cases of retroversion and prolapse of the ovaries where operative treatment is necessary the operation is described and advised of drawing the folded round ligaments through an opening in the broad ligaments and suturing them in front of the uterus, thus forming a sling to hold up that organ. Dr. Fothergill states that he has had good results from this procedure.

The arrangement of this manual presents a refreshing novelty, and the manner in which the different diseases are treated of is good and interesting. It contains a large amount of sound teaching in a comparatively small compass and is well worth reading. The classification adopted naturally leads to the inclusion of some conditions under headings in which we would not expect to find them; thus, for example, a vascular caruncle is described in the section on retrogressive changes. It is quite true that one form of caruncle owns this origin, but the common form due to gonorrhœa should be found rather in the chapter on diseases due to infection. The illustrations are good and the index fair.

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*The Diseases of the Nose, Mouth, Pharynx, and Larynx: A Text-book for Students and Practicians of Medicine.* By Dr. ALFRED BRUCK (Berlin). Edited and translated by F. W. FORBES-ROSS, M.D. Edin., F.R.C.S. Eng., assisted by FRIEDRICH GANS, M.D. Illustrated. London: Rebman, Limited. 1910. Pp. 615. Price 21*s.* net, cloth.

THE translators of Dr. Bruck's text-book state in their preface that they "have endeavoured as much as possible to closely follow the German text; even at the risk of not producing 'classical English' at the expense of the exact 'shade of meaning' or sense which the author originally endeavoured to convey." Unfortunately, it does not seem to have occurred to them that "to closely follow the German text" would actually run them into the very danger they were so anxious to avoid, and that it is possible to translate so literally as to render an author's original "shade of meaning" hopelessly obscure. Indeed, we regret to say that this is actually what has happened. Take the following as an example: "This" (limitation of the olfactory region in the human nose to a small area) "can be taken as a proof of the little delectable fact that the sense of smell in Homo sapiens is on a retrograde movement, or seems to degenerate entirely, in contradistinction to his animal affinities." From this sentence the reader may learn "the little delectable fact" that the translators have performed their task upon the all-too-familiar lines of the fourth form construing the Commentaries of Julius Cæsar.

It says much for Dr. Bruck's writing that many of its merits have survived this treatment. His arrangement of the subject-matter, for example, is clear and systematic, and much of his description retains its pithy and concise character. We commend, among other admirable features, the decision which led the author to incorporate in his book a section upon diseases of the mouth. In this connexion, however, we were unable to discover any allusion to pyorrhœa alveolaris, a disease which plays a not unimportant rôle in the causation of many disorders of the nose and throat.

In his advocacy of caution in regard to the operative treatment of nasal sinus suppuration Dr. Bruck's teaching is in harmony with the most recent movement of rhinological opinion. But we are constrained to add that in many other directions his views and counsels are not so commendably up to date. It will be noted with surprise, for instance, that not only does he advise the alveolar puncture in maxillary antrum suppuration, but that he actually permits the sacrifice of a sound tooth if necessary for the accomplishment of this measure.

The handling of the details of the etiology, symptomatology, and medical treatment of the various diseases is, in general, careful and complete; but too little space for a volume of this size has been given to the description of operations. Here, also, we are disappointed to find that several recent developments do not receive an amount of attention commensurate with their popularity. Submucous resection of the nasal septum, for example, is dismissed in 21 short lines.

As a suitable anæsthetic in operating for the removal of adenoids Dr. Bruck recommends ethyl bromide, a compound which few English anæsthetists would care to use, for certain good and sufficient reasons.

The volume is well bound and presents a handsome exterior. The illustrations are many and useful, and there is a fair index. So that, on the whole, we may say that if the "practician" is able to ignore the uncouthness of the translation he will find Dr. Bruck's text-book of some value.

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*Dental Surgery and Pathology.* By J. F. COLYER, M.R.C.S. Eng., L.R.C.P. Lond., Dental Surgeon to Charing Cross Hospital and the Royal Dental Hospital. Being the third edition of "Diseases and Injuries of the Teeth," by MORTON SMALE and J. F. COLYER. London, New York, Bombay, and Calcutta: Longmans, Green and Co. 1910. Pp. 1000. Price 25*s.* net.

THE great advances made in the study of general pathology have naturally influenced the study of special departments of medicine and surgery, and the pathology of the teeth has participated in the general progress. The text-book of "Diseases and Injuries of the Teeth," by Mr. Morton Smale and Mr. J. F. Colyer, achieved no small measure of popularity, and now Mr. Colyer has written the work before us which appears practically as the third edition of the book we have mentioned. It has been the aim of the author to describe the most modern aspects of dental pathology and to describe the treatment of the morbid affections of the teeth as based on our present knowledge of the etiology and pathology of dental disease. In this work the author has been fortunate in obtaining skilled assistance in certain special departments; thus Mr. H. S. Clogg has assisted in the preparation of the chapter on tumours of the jaw, a subject too little regarded in many text-books on dentistry. The importance of this matter will only be fully appreciated by considering the fact that the dental surgeon is often the first trained observer who has an opportunity to examine the interior of the mouth soon after the appearance of a new growth, for the patient naturally is inclined to ascribe the pain to some dental condition. Therefore it is essential that every dentist should be capable of recognising and appreciating the importance of the earliest manifestations of new growths. This chapter is well written and should prove of value to the dental student.

Mr. Kenneth W. Goadby has completely rewritten the chapter on the bacteriology of the mouth, and all medical authorities are now agreed as to the immense importance of septic oral conditions on the general health. All morbid processes in the teeth react on the general health, and probably the most important of these is that which is most commonly known amongst medical men as pyorrhœa alveolaris, but Mr. Colyer prefers to call it chronic general periodontitis. He considers that the initial cause in the majority of instances is an injury to the tissues of the interdental stratum by fermenting food and other decomposing débris. Infection with pathogenic organisms rapidly follows, and the author holds that the chronic character of

the process is one of slow tissue necrosis rather than acute inflammation, and that the disappearance of the alveolar margin is due to the action of toxins which are formed in the pockets around the teeth. He believes that the tissues round the alveolar process are unduly liable to attack on account of a lack of functional activity the result of inefficient mastication, and he considers that the calculus on the teeth is a product of the discharge from the teeth sockets, and that it does not affect the disease beyond interfering with the cleansing of the pockets round the teeth.

A list of the papers which have been found useful in the preparation of the work has been added to many of the chapters, in order that anyone desiring to study specially that particular subject might be able to refer easily to the authorities. Many illustrations are supplied, in all nearly 900. They are well selected and clear.

The book is primarily intended for the student and practitioner in dentistry, but there is much in it that should prove of interest and value to the medical practitioner, and, indeed, it would be desirable if practitioners of medicine knew more than they usually do of the affections of the teeth, for they would be in a better position for recommending their patients to apply for the assistance of a dentist when necessary. Only too many members of the public are under the impression that there is nothing the matter with a tooth unless it aches. We can speak with confidence in praise of the book, and we hope that the success which it merits will be attained.

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*Popular Drugs: their Use and Abuse.* By SIDNEY HILLIER, M.D. Edin. London: T. Werner Laurie. Pp. 192. Price 3*s.* 6*d.* net.

WE learn from a note on the loose cover of this work that "it is the object of this book to give in popular form some account of the legitimate sphere of this class of drugs (i.e., those leading to a drug habit) to show the dangers of excess, to point out some of the preventive measures against excess, and the best and most modern methods of treatment." As a rule, we think that popular books on medicine do more harm than good, for they lead the lay reader to put a confidence in his own judgment which is but rarely justifiable. However, if a popular book on medicine or medical matters is to be written, it is better that the author should be a medical man than that the book should be written by a "health lecturer" or a school teacher.

Dr. Hillier deals first with alcohol, and then successively with tea, coffee, cocoa, opium, tobacco, Indian hemp, mescal, cocaine, hypnotics, analgesics, and patent medicines. The remarks on alcohol are in general characterised by soundness, though here and there we note inaccuracies. For instance, we do not think it correct to say "Sherry contains 23 per cent. of alcohol" without some modification, for there are some sherries which do not contain anything like this amount. Neither is any information given as to whether the alcohol is calculated by weight or by volume, and for the purposes of comparison it should be one or the other, not both. On p. 65 we note a dietetic regulation with which we cannot agree, where Dr. Hillier says that for a gouty person well-kept fine quality Bordeaux, freely diluted with an alkaline mineral water, is permissible. The dilution should certainly be done in the stomach and not in the tumbler—that is to say, the water should first be drunk and then the "fine quality Bordeaux" can be enjoyed in the ordinary way. Not enough stress is laid on the difference between the effect of ethylic alcohol and that of the vinous ethers which are found in good wines and brandies. Ethers are valuable as stimulants.

In speaking of tea Dr. Hillier says (p. 102): "Hard water does not make good tea ..... a pinch of bicarbonate of soda should be added before the tea is introduced. Soft water extracts more of the soluble principles of the leaves." If a hard water is used much of the tannin is thrown down in the form of tannate of lime, and probably caffeine is set free from its combination and in the free state it may be mischievous. Bicarbonate of soda may do the same thing.

Dr. Hillier's remarks upon self-drugging, hypnotics and patent medicine are good, but the public at large is so silly as regards its health that so long as hypnotic drugs are allowed to be sold freely over the counter, and so long as every kind of quack remedy is advertised in papers and magazines, for so long will weak-minded persons continue to ruin their health and waste their money. We are in accord with Dr. Hillier's remark that the question as to whether drugs are to be condemned "entirely depends on whether their use is regulated and controlled by knowledge or by ignorance."

Dr. Hillier has approached the various subjects indicated from the excellent standpoint of common sense.

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*Traité Pratique d'Électricité Médicale.* By Dr. J. LARAT. Paris: Vigot Frères. 1910. Pp. 641. Price 10 francs.

THIS is the third edition of a handbook on medical electricity by Dr. Larat of the Hôpital des Enfants Malades of Paris. The chapter on electro-diagnosis is very complete, and is well illustrated by tracings of the actual curves of muscular contraction. The curves of normal faradic and galvanic excitation respectively are of great interest. They are obtained by means of Dr. Larat's apparatus for graphic electro-diagnosis, which consists of a revolving drum, on which are recorded the muscular contractions by means of a tambour as is usually done in the physiological laboratory. This is an ideal method of recording the comparative excitability of the same muscle on the sound and on the affected side, but is too complicated to be used in ordinary hospital routine. Bergonié's charts are commended for registering the results of muscle testing, and if this is done in two colours, red for the make and blue for the break, no better scheme could be devised.

In a later division of the book Dr. Larat has coined a new term, Electro-clinique, which includes all methods of electrical treatment. In the article on uterine fibroma he states that he has totally given up Apostoli's and Tripier's methods in favour of the treatment by Roentgenisation, with which he has obtained encouraging results. As might be expected from a work by the author, it is very much up to date, for Dr. Larat is in the van of modern electrical medicine. For instance, in the article on the treatment of adiposity we find reference to Guilleminot's method by galvanic currents of high intensity and to Bergonié's excellent results by the faradic current, or by rhythmic galvanism. The author is also a great advocate of the hydro-electric bath, which he uses with effect for gout and obesity, while among other therapeutic points we may notice the use of high-frequency sparking in the treatment of varicose ulcer, and the introduction of salicylic ions in rheumatic affections of the joints. The article on paralysis is very long and gives the result of the author's large experience. It is perhaps the section best worth studying of all in the book.

There are a few misprints, but the illustrations are numerous and well chosen, and there is a most excellent index.

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*The Encyclopædia of Sport and Games.* Vol. I. Edited by the Earl of SUFFOLK AND BERKSHIRE London: William Heinemann. 1911. Pp. 496. Price 12*s.* 6*d.*

THE first volume of this admirable encyclopædia covers the space between aeronautics to cricket, and the title of the very first article indicates how wide the meaning of the word "sport" is now to what it was ten years ago, when the original edition of this encyclopædia was

issued. To-day, as the editorial preface says, artificial locomotion on the land and in the air has made such giant strides and become so much a subject of competition and emulation that there cannot be any further doubt of its proper place in an encyclopædia of sport. The article on aeronautics is written by Lord Montagu of Beaulieu, editor of *The Car*, and one of the earliest and most expert motorists in the kingdom. It is a highly interesting and readable summary of aerostatics, to which is appended a bibliography ranging between 1784, the days of the exploits of M. Blanchard and M. Lunardi, to the numerous accounts of flying machines which have appeared recently since M. Santos Dumont's story of his airships was published in 1904. The article is profusely illustrated with reproductions from photographs depicting, for instance, M. Blériot's arrival at Dover on July 25th, 1909; Messrs. Latham and Farman flying at Blackpool; Mr. Wilbur Wright (whom Lord Montagu regards as the first successful inventor of a flying machine fitted with an engine); the Comte de Lambert and M. Gobron; M. Paulhan winning the London to Manchester contest; and all forms of balloons from the Montgolfier machine, which made ascents in August, 1783, to Zeppelin II. in full flight over Lake Constance and the first flight of the new Russian airship Russie. Among other articles there is a symposium upon atheletics, to which past champions like Mr. C. L. Lockton, Mr. C. B. Fry, Mr. M. Shearman, and Mr. H. Wade contribute. Billiards and coursing are the subjects of exhaustive contributions. There is much talk of fishing and shooting under such alphabetical heads as big game, bison, bear, black game, bass, bream, chubb, carp, conger, and River Conservancy. Cricket is dealt with under subheads, which can be easily guessed, by the Jam of Nawanagar, Mr. F. G. J. Ford, Mr. T. Richardson, Mr. B. J. T. Bosanquet, and Mr. M. C. Kemp, Mr. W. J. Ford being general editor. The encyclopædia is profusely illustrated with reproductions from photographs, with line engravings and diagrams, and contains also eight finely coloured prints. The work is sure to appeal to many of our readers; automobilism, fully dealt with here by Lord Montagu of Beaulieu, is now regarded by many medical men as part of their necessary technical education, while there are few of us who have not some form of sporting pursuit.

## LIBRARY TABLE.

*Practical Physiological Chemistry.* By R. H. ADERS PLIMMER, D.Sc., Assistant Professor of Physiological Chemistry, University College, London. With coloured plate and other illustrations in the text. London: Longmans, Green, and Co. 1910. Pp. 270. Price 6*s.* net.—Dr. Plimmer has given us in this book a clear and attractive account of the practical side of physiology. His experience as a physiological teacher has endowed him with the faculty of presenting facts in logical sequence and in simple terms. He knows exactly the essentials of the subject for the student and he has carefully guarded against overloading his account of laboratory applications with general considerations. In a word, he has successfully written of essentials within the due limits of a handbook. The following is worth quoting as a very good example of what the American would call "straight" writing. Under the heading of "Life Cycle of the Elements," the section in which it occurs contains this preliminary paragraph: "During the life processes of animals and plants an interchange of inorganic into organic and of organic into inorganic compounds occurs. The change of inorganic into organic is effected by the plant from the carbon dioxide of the atmosphere, ammonia and salts in the soil. The change of organic into inorganic is effected by the animal. The organic compounds synthesised by the plant enter the animal as food, and are converted into carbon dioxide which leaves the body by the lungs, salts, urea, and other simple organic compounds which leave the body in the urine. The fæces contains matter which has not been utilised by the animal. The urea and the other organic compounds in the excreta are finally broken down into carbon dioxide, ammonia, &c., by bacteria. There is thus a complete life cycle of the elements." What a great and forcible story is indicated here in a few words. The practical directions to the student are excellent throughout and the book altogether may be commended with the greatest confidence.

*Gall-stones and Diseases of the Bile-ducts.* By J. BLAND-SUTTON, F.R.C.S. Eng., Surgeon and Lecturer on Surgery to the Middlesex Hospital, and Member of the Cancer Investigation Committee. New and revised edition. With 53 illustrations. London: James Nisbet and Co., Limited. 1910. Pp. 256. Price 4*s.* 6*d.* net.—We were able to speak favourably of the first issue of this book, and we find that this revised edition presents clearly the advances which have been made during the five years that have elapsed since the first appearance of the work. Mr. Bland-Sutton considers that the opinion which was formerly generally held, and is still held by many, that many diseases associated with gall-stone are due to infections ascending the bile-ducts from the alimentary canal is false, and he maintains that many septic diseases of the bile-duct are caused by infection from organisms eliminated from the blood of the portal circulation and discharged into the outgoing bile; thus, according to his view, most of the disturbances which come under the surgeon's hand in connexion with the biliary passages are "descending infections." This opinion is certainly gaining credence, though perhaps it is expressed a little dogmatically here. Within recent years we have learned that malignant disease of the gall-bladder is more frequent than used to be thought, and the author considers that the association of cancer and gall-stones indicates that these two conditions are manifestations of a common cause, and he believes that this association strengthens the position of those who believe that cancer is due to a micro-parasite, probably taken into the alimentary canal with food and water. The book is very suggestive of the originality of its author and is well worth reading. The illustrations are excellent, as they always are in any work by Mr. Bland-Sutton.

*Hay Fever and Paroxysmal Sneezing (Vasomotor Rhinitis).* By EUGENE S. YONGE, M D. Edin. Edinburgh and London: William Green and Sons. 1910. Pp. 150.—Those who are acquainted with Dr. Yonge's previous publications have learned to expect that whatever comes from his pen will be both scholarly and readable. To expect also novelty when such well-worn subjects as hay fever and its congeners form his theme is, perhaps, to ask too much. Although, however, the author has broken but little new ground, the book, as a handy compendium of views on the whole subject, thoroughly deserves a prominent place in the practitioner's library. There are only two minor details upon which we desire to utter a word of criticism. Dr. Yonge very properly devotes a considerable amount of space to the important matter of the treatment of hay fever, but in our opinion he would have considerably enhanced the value of this section if he had discriminated rather more clearly and emphatically between the less and the more successful methods. The other point is, that his warm support of the treatment of paroxysmal rhinorrhœa by shaving off the septal tubercles does not, as far as we are aware, represent the opinion of rhinologists in

general. The coloured plate which is supplied to illustrate this operation is, by the way, not very educative.

*Indiscriminate Spitting and the Prevention of Consumption.* By C. CONYERS MORRELL, L.R.C.S. Edin. London: W. Speaight and Sons. 1911. Pp. 16, paper. Price 2*d*.—Any paper forcibly and yet sensibly written on this subject for the enlightenment of the public is worthy of commendation. This is such a paper. The author shows a broad grasp of first principles when he writes that it is the unquestionable duty of every priest and minister, of every statesman and every public man, to study and understand the doctrine of infection and proclaim the fundamental principles of prevention and the necessity for their observance.

## JOURNALS AND MAGAZINES.

*The North American Review.*—The January issue contains a plea by Olivia Howard Dunbar for the State acknowledgment and fulfilment of the duty of guardianship to the child. She points out how for the past 25 years or more, whether as scientists, as artists, or as sentimental amateurs, we have been more or less profitably engaged in "studying the child," as a result of which many "wise effective agencies," that will in time be greatly multiplied, are already in operation. The work of the New York City Department of Child Hygiene, under the direction of Dr. Josephine Baker, the child labour committees, the juvenile courts, the tendency to substitute outside family boarding for orphanages and children's homes, are all reviewed, and the article concludes with a statement of the purpose of the Child Welfare Exhibit, being held in New York City during the current month. As a result of an investigation of child-life in New York a display of various conditions affecting child-life and health, with the deductions to be drawn therefrom written very large and conspicuous indeed, in the manner of recent years rendered familiar by the tuberculosis exhibitions, is endeavouring to reach the untrained mind that is too indolent or too weak in its mental digestion to assimilate any but predigested food. A Bill, it appears, is now before Congress recommending the formation of a Federal Children's Bureau under the Department of the Interior. In other articles in the same issue of a magazine that is always interesting, John Brown of American fame is painted respectively as "if no saint, always a hero and a martyr," by W. D. Howells, and as an "assassin" and a "death dealer," "without a gleam of human love or pity for myriads of his own race, his countrymen who happened to have been born and to have lived south of the line of Mason and Dixie," by Henry Watterson; Max Eastman tells us why woman suffrage is important; under the heading of Personalities and Political Forces, Albert Bushnell Hart stumps for Roosevelt in the Presidential campaign of 1912; and "Britannicus," writing in the midst of the battle of the recent British elections, arrives at the sane conclusion "that the tremendous issues now confronting the British people cannot be permanently settled except by consent."

*Edinburgh Medical Journal.*—The January number of this journal opens, so far as original matter is concerned, with a paper by Professor F. M. Caird on Epithelioma of the Tongue, based on a review of 60 hospital cases. Sixteen patients are still alive. The writer recommends local anæsthesia for the first part of the operation. In an opening address before the Edinburgh Obstetrical Society Dr. F. W. N. Haultain discusses the comparative progress of midwifery and of gynæcology, the former remaining almost *in statu quo*, while the latter has made great strides. Mr. David M. Greig writes on Recurrent Enlargement of the Salivary Glands, a condition little noted in text-books. It seems sometimes to be a sequel of mumps and may be due in some cases to obvious affection of the duct, whereas in others its causation remains quite obscure.

*The Dublin Journal of Medical Science.*—A moderate and unbiased discussion of the physiological effects of alcohol is so seldom encountered that one must record the appearance of a paper answering to this description almost with astonishment; yet such seems to be the nature of Dr. W. H. Thompson's contribution on the subject to the December number of this magazine. It is, however, rather short and sketchy. In the same issue is published an interesting address by Professor E. J. McWeeney on Some Tendencies of Modern Research in Veterinary and Human Medicine, in which, among other things, attention is called to the existence of ultra-microscopical infective agents and to Borrel's view that some forms of epithelioma may be due to such a virus, carried perhaps by the parasite Demodex folliculorum.

*The Medical Chronicle.*—In the January issue of this journal Dr. W. B. Warrington discusses the diagnosis and prognosis of traumatic neurosis, and notes the difficulty met with in many cases in which the best form of treatment demands that the patient should occupy his mind with work, whereas he is claiming compensation legally for inability to follow his ordinary occupation. Dr. W. Mair writes on enlarged thymus and records a case in which after death there was found waxy degeneration of the heart muscle; and Dr. Alan McDougall discusses the treatment of status epilepticus, noting the importance of watching for the occurrence of hyperpyrexia and treating it at once when present, and advising the withholding of all food from the patient, but administration of plenty of water.

*The West London Medical Journal.*—Literature is rapidly accumulating on the subject of the Ehrlich-Hata remedy for syphilis, generally known as "606." In the January issue of this journal Mr. J. E. R. McDonagh gives a very interesting account of the steps which led to its introduction and to the experimental work done with it on animals. He also discusses its therapeutic use and notes the fewness of the accidents which have followed its administration. Dr. Reginald Morton writes on X ray examination of the urinary system and describes the technique advisable for the purpose, and Mr. J. D. Mortimer contributes a paper on the selection of anæsthetics for various types of patients and forms of operation.

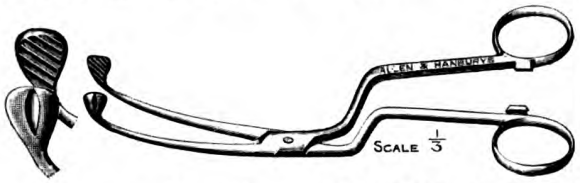
*The Birmingham Medical Review.*—The original matter in the December issue of this review is entirely gynæcological. Sir J. Halliday Croom, in an inaugural address to the Midland Medical Society, deals with the narrow pelvis and lays emphasis on the necessity for maternity homes for the conduct of labour, which differs so little in many cases from a surgical operation. Professor R. F. C. Leith's Ingleby lectures on Tumours of the Body of the Uterus are continued, the present instalment dealing with sarcomatous degeneration of fibroids and with sarcoma and deciduoma malignum of the uterus.—In the January number is contained a paper by Mr. Leonard P. Gamgee on the operation of lymphangioplasty as devised by Mr. W. Sampson Handley and a summary of a post-graduate lecture by Dr. James E. A. Sawyer on Chronic Affections of the Lungs in Children, in which he notes the rarity of any condition resembling adult pulmonary tuberculosis in children under 12 years old.

UNIVERSITY COLLEGE LABORATORIES FUND.—Lord Iveagh has promised to increase the donation of £250, which he has already given to the University College Chemical Laboratories Fund, to £1000. Over £19,000 have been collected for the Fund.

# New Inventions.

## IMPROVED FORCEPS.

THE accompanying illustration shows a forceps made to my design by Messrs. Allen and Hanburys, of 48, Wigmore-street, London, W., to facilitate the performance of Kocher's invagination operation for the radical cure of inguinal hernia. As will be noted, the shaft of the forceps has a gentle curve bringing the head to the level of the handles. The head is bullet-shaped, bearing a slot on either side. The head of the forceps carrying the invaginated sac protrudes the parietal




peritoneum into the opening made by separating the fibres of the internal oblique and transversalis muscles, and here it is secured. Through the button-hole now made in the peritoneum the sac is very readily picked up by inserting the teeth of a tenaculum forceps into the slots in the head of the hernia forceps. The forceps have proved very satisfactory and render the performance of this excellent operation very simple, and if working single-handed or on a muscular subject they are invaluable.

HARRY CRICHTON, M.D., B.S. Durh.,
South Shields. Assistant Surgeon, South Shields Infirmary.

## POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A COUNCIL meeting of this association was held at 34, the Copthall-avenue, London, E.C., on Jan. 20th, and chair was taken by Surgeon-General G. J. H. Evatt, C.B., President of the association. The following matters, among others, came before the council. The honorary secretary submitted a letter from a provincial member asking for advice under the following circumstances. He had been appointed medical officer to a certain district with a permanent tenure of office, but had inadvertently moved out of his district by a few hundred yards. He hoped that he would have no difficulty in getting re-elected periodically when his term of office periodically expired. In this, however, he was disappointed, for he had lately had notice that he would not be re-elected at the expiry of his present term of office. The council were of opinion that it was very unwise to act in this manner. By so doing this officer had placed himself entirely in the hands of the guardians and must lose his office unless he could induce his guardians to re-elect him. It could not be too strongly impressed on district medical officers that they could only have security of tenure in their office throughout the country generally *so long as* they resided in their districts.

A letter was read from another member complaining that his guardians had objected to a surgery he had constructed adjoining his house on the ground that it was not built of brick and roofed with slate, although they had permitted the use of similar surgeries by other medical officers in the union. The council considered that this was a matter for the sanitary authority, and if the latter saw no objection to the construction of the surgery the guardians had no right to object.

Another letter was read from a country member, 65 years of age, who stated that he held a second Poor-law district outside his own union, and after holding it for 11 years he was now called upon to resign it. Could he claim any pension on account of it without resigning his other Poor-law appointments, as he had had deductions from his salary for this appointment? The Council considered that he should resign all his appointments and take his pension on the whole if he wished to insure himself against loss, as he was not entitled to any pension so long as he held any Poor-law appointment.

A letter was also read from another member dealing with the same point, but in this case he had not reached the age for retiring, and had held the outside appointment for 13 years. In this case it appeared that the officer would be bound to forfeit all his deductions of salary under the Superannuation Act unless he could retire within the next four years, as only the average salary during the last *five* years could be estimated in fixing the pension. The Council thought this very inequitable, and that such an appointment ought always to be allowed for in reckoning the retiring pension, or that at least the officer should be entitled to claim a return of all deductions from the salary of that appointment for superannuation purposes.

Another country member wrote that the guardians of his union had sent round a circular stating they had decided that the present salaries of the medical officers should be fixed as a "maximum" for their appointment. Could the guardians fix such a "maximum"? He also asked if it were legal for the district medical officers of a union to contract out of the special fees for operations, &c., laid down by the general order of 1847. The council was of opinion that in neither case would this be legal unless with the consent of the Local Government Board.

The honorary secretary reported that he and the other delegates of the association had been present at the first meeting of the Poor-law Conference held at Norfolk House on Dec. 9th last.

It had there been decided that each section of the Poor-law Service should formulate through its respective association what reforms it considered necessary for the betterment of its particular service. He had forwarded to the conference all the resolutions that had been duly passed up to the present, but he thought it desirable that the various points of medical Poor-law reform should be put forward in more detail, especially as a Departmental Committee had been appointed by the Local Government Board to revise the General Orders.

After a careful consideration the council decided that the following recommendations should be put forward on behalf of the Poor-law medical officers of England and Wales:—

1. That the provisions of the Metropolitan Dispensaries' Order, as far as possible, should be made to apply to the country generally, and that all appliances and drugs for the use of State patients shall in all cases be provided at the expense of the State.
2. That there should be a revision of the scale of payments for operations, and more facilities granted for obtaining assistance, and paying for the same. This specially applied to the provision of an anæsthetist. The medical officer should not be at the mercy of the Poor-law authority with regard to this assistance: it should be left entirely in his hands, with only some reasonable check to prevent abuse.
3. In all cases where called in to attend a confinement in his official capacity he should have an inalienable right to his fee. If the case be an improper one from a Poor-law point of view the authority should be left to recover payment from the husband.
4. The Poor-law authority should be compelled to contract with the workhouse medical officer or superintendent of infirmary to vaccinate all infants in the workhouse or infirmary and to carry out the Vaccination Acts generally.
5. The notification of measles and whooping-cough should be carried out in the same manner as has been recently adopted in the case of tuberculosis of the lungs.
6. The salaries of Poor-law medical officers should be on a more liberal scale, due regard being taken of the average mileage in the case of visits to sick patients. That to meet exigencies of changes of population the medical officer should always have a right to claim a revision of his salary when his work has been greatly increased by such change.
7. That an allowance should be made by the Poor-law authority for the carrying out of the Poor-law work of a medical officer during his annual holiday and during sickness.
8. That length of service, as in other public services, should constitute a ground for increase of salary, apart from other considerations.
9. That a common fund be instituted to receive all payments under the Poor-law Officers' Superannuation Act, so that the expense of pensions should not directly fall on a particular locality.
10. That in all cases where for public reasons the office of a Poor-law medical officer is determined, if he or she be not entitled to a pension, an allowance shall be made of a sum equal to the average emoluments derived from that office during the period of two years. Provided always that such determination be not due to misconduct on the part of the officer.
11. That in no case shall it be lawful for the local Poor-law authority by bargaining with individual medical officers to reduce the amount paid at any time annually in medical salaries for attendance on its poor, unless it can be clearly shown that owing to local changes the sickness claims have very materially diminished in that area.
12. That in all cases where, owing to residence outside his district, a medical officer has only been appointed for a year or a term of years, if the said appointment has been continued for a period of seven or more years the said medical officer shall thereafter be entitled to hold office on the same terms as if he resided in his district.

# THE LANCET.

*LONDON: SATURDAY, JANUARY 28, 1911.*


## Annual Report of the Medical Officer of the Local Government Board.

SHORTLY after Christmas the annual report of the medical officer of the Local Government Board for 1909–1910 was published. As year by year we peruse these valuable volumes we cannot help wondering whether it might not be practicable to issue one annual report, not only upon the British Isles as a whole, but also upon the health conditions of the empire. But we fear that this might prove a difficult matter, and perhaps, after all, the different practices which obtain in Scotland and in Ireland furnish us with comparative studies from which each local government authority selects that which best suits its needs; although, on the other hand, there is in certain directions necessity for more uniform action in the three divisions of the United Kingdom than is at present the case. We must confess, too, that we should like to see the annual report of the English Local Government Board embody some sort of summary or review of the health conditions obtaining in Scotland or in Ireland and in the colonies, and perhaps the best means of accomplishing this end would be to make the President of the Local Government Board Imperial Minister of Health, a step which has been often suggested for many reasons, and one which would tend to centralise all information relative to health matters in one Government office. It must not be inferred that we are in any sense disparaging the work of the Local Government Board; rather must we be understood as implying that the work of the medical department has always been maintained at such a high level of excellence that we should like to see its sphere of influence materially extended.

The report just issued differs but little from its long line of predecessors; it contains an introduction by Dr. ARTHUR NEWSHOLME, the medical officer, reports by the medical inspectors, some of which have been already published and have been reviewed in our columns, memoranda issued by the Board upon various subjects, increasingly depressing figures relative to the administration of vaccination, and, finally, an account of the auxiliary investigations carried out during the year. As it is our intention to deal in one or more special articles with some of the more interesting features of the report we shall here mainly confine ourselves to an indication of the general scope of the volume. The most interesting innovation is a review by Dr. H. FRANKLIN PARSONS, the senior assistant medical officer, upon epidemic diseases in England and Wales during 1909, a contribution which really amounts to a sketch of the behaviour of measles, whooping-cough, scarlet fever, diphtheria, enteric and typhus fevers, small-pox, influenza, and epidemic diarrhœa over the years for which reliable figures are available. Dr. PARSONS, the author of classical works upon disinfection, influenza, and many other subjects, is well qualified for supplying reviews of this character, since his intimate knowledge of epidemiology and cyclical waves of disease enables him to avoid the pitfalls into which more superficial workers are so liable to be precipitated owing to too restricted a review of the past history of disease. It is much to be hoped that these annual reviews will be continued, although we are afraid that Dr. PARSONS, who, we believe, is approaching the age limit of the Civil Service, may not be much longer available for the purpose. But possibly in his well-earned retirement after so many years of silent service he may, unfettered by the exigencies of office, take up his pen and write of epidemiology. Dr. R. BRUCE LOW contributes, as in past years, his useful summaries of the progress of plague and cholera, and his review as to plague progress and prevalence makes especially interesting reading at the present time owing to the tendency of this disease towards general diffusion. Dr. S. W. WHEATON, one of the inspectors, furnishes an interesting report upon enteric fever prevalence in the county of Durham, and this has already, we believe, been published.

Dr. G. S. BUCHANAN reviews the work of the food inspectors, dealing with the action taken under the Public Health (Regulations as to Foods) Act, 1907, the local arrangements made for meat and food inspection, work in relation to the Sale of Food and Drugs Acts, and foreign and colonial food legislation. Dr. BUCHANAN'S report is reviewed in another column of this issue of THE LANCET. Dr. J. C. G. LEDINGHAM'S report on enteric fever carriers is also embodied in the volume before us, and this was fully reviewed in our columns when it was first issued.[1] Amongst what are known as the auxiliary scientific investigations is a report of work carried out by Dr. F. W. ANDREWES upon the behaviour of the leucocytes and the changes in the bone marrow in relation to infection. Numerous organisms were subjected to test during the course of the experiments, and the general conclusions arrived at show that the human economy responds in different fashion according to the nature of the organisms employed—that is to say, that the method of defence depends upon the character of the attack. Dr. W. G. SAVAGE has continued his investigations upon the Gaertner group of bacilli in prepared meats, and the later experiments have tended to emphasise the former conclusions that outbreaks and isolated cases of food-poisoning are due to specific infection of the food and not to non-specific excretal contamination. The important subject of the bacterial measurement of milk-pollution is also dealt with by Dr. SAVAGE, who is of opinion that the most reliable inferences can be drawn by estimating the number of bacillus coli and its near allies, and of the spores of the bacillus enteritidis sporogenes, as well as of a microscopical examination of the centrifugalised deposit. We are glad to see, too, that Dr. SAVAGE advocates that bacteriological examination shall be carried out side by side with inquiries at the sources of the supply of the milk. The chemical aspects of epidemic diarrhœa have been investigated by Dr. H. A. SCHÖLBERG and Mr. MACKENZIE

[1] THE LANCET, Dec. 3rd, 1910, p. 1631.

WALLACE, who have endeavoured to discover in milk chemical substances which, due to bacterial metabolism, are able to stimulate the secretory functions of the gastro-intestinal canal. The authors conclude that the presence of the peptones and peptone-like bodies may explain the reaction of the infants' gastro-intestinal tract to certain microbial infections. They found that during the summer months peptones were present in milk samples in large quantities whenever the samples yielded a higher bacterial count.

The possibility of purifying chalk waters by chemical methods is a very important consideration in view of the growing opportunities for the pollution of these waters which arise in consequence of the extension of human habitations over uncovered chalk areas. It was therefore decided that Mr. C. E. MOORE and Professor HEWLETT should carry out some investigations with respect to the sterilisation of chalk waters, and it was found that such sterilisation could be effected under laboratory conditions by adding 0·25 part per million of bleaching powder and allowing the action to continue over half an hour. But as to this, Dr. NEWSHOLME in his introduction remarks that these experiments in no sense justify sanitary authorities in refraining from every effort "to minimise and remove cesspools and other sources of pollution in their gathering areas, while trusting to treatment by chlorine, ozone, and other chemical means of purification." We are in full agreement with this sentiment, and it is clear that these chemical means of purification must, at any rate for many years to come, be regarded as merely supplementary agencies and not as substitutes for securing the sources of supply against pollution.

Dr. NEWSHOLME reports that up to October, 1910, 51 local authorities had received the sanction of the Local Government Board to add ophthalmia neonatorum to the list of diseases notifiable under the Infectious Diseases (Notification) Act. With respect to preventive measures against tuberculosis the medical officer states, on the basis of the annual reports of medical officers of health, that the order providing for the notification of pulmonary tuberculosis amongst paupers has in several districts been taken advantage of and good work carried out under its provisions, more especially in districts where means exist for helping the patients. Considerable space is devoted in this introduction to the subject of infantile mortality and Dr. NEWSHOLME emphasises the part played by alcoholism in this direction. He also summarises the report upon infantile mortality, which was issued as a separate paper and which we noticed in full in our columns at the time.[2]

## Sir Francis Galton.

THE death of Sir FRANCIS GALTON deprives England of a type of man of science not easily to be replaced. Maternally descended from the DARWIN stock, and hence a conspicuous illustration of a doctrine which he did much to confirm and popularise, he was conspicuous throughout his long life by that habitual preference of truth to system which is characteristic of the philosopher, and by that constant respect for the opinions of those who differed from him which is characteristic of the gentleman. His habitual caution rendered him almost exempt from the errors which are incidental to haste, and his habitual moderation rendered him almost exempt from the errors which are incidental to uninformed and presumptuous judgment. Always kindly, always dignified, always urbane, he received with gracious courtesy the inquirer who would investigate the basic facts of his doctrines; and he was always ready to place the stores of his memory and the fruits of his researches at the service of the genuine student. He met irrelevant criticism with a genial smile; and the infirmity of his later years enabled him, on more than one occasion, to imitate with much effectiveness the example of REYNOLDS:

> "To coxcombs averse, yet most civilly steering,
> When they judged without sense he was still hard of hearing."

The work of the earlier portions of a life which for something like 65 years was mainly devoted to scientific inquiry has, almost of necessity, become enshrined among the accepted truths of to-day, and is now hardly remembered in its detail. There are still a few elderly men who can recall the sensations with which they first read "The Art of Travel," with its infinite variety of devices for warding off the dangers or for obviating the discomforts of the wilderness; and there must be many more who remember the groundwork of modern meteorology which was laid in the years between 1860 and 1870. But the turning points of GALTON'S career, as far as the general public were interested in it, were his studies of finger-prints and of the hereditary character of intellectual ability. The idea once seized, that the papillary ridges of every individual present individual peculiarities, scope was at once given for the exercise of the untiring diligence and the unsleeping caution which were the main elements of the philosophical side of his character, and the whole matter was in due time worked out to its conclusions, and was rendered available for the many practical purposes to which it has since been applied, including, among others, a greatly increased patronage of the glove trade by the professors of the art of burglary. But the question, calculated though it was to arrest attention, was only a by-product of GALTON'S diversified ingenuity. He did not claim to be the originator of finger-print reading and he did not suffer its consideration to occasion any neglect of the main idea to which his thoughts had become directed, the idea which he afterwards expressed in the word "Eugenics," and which might be defined as the belief that the average fitness and capacity of the human race may be improved by the practice of selection in parentage. It was for the support and extension of this belief that GALTON founded the research fellowship on the subject in the University of London, and that the Society of Eugenics has since been established by his friends for the better prosecution of the work. He has shown quite conclusively that the family which has produced one member of conspicuous ability has, in the great majority of instances, produced others of like kind, and although some allowance must be made for the increased opportunities afforded to the younger members of a house when one of the seniors has risen to eminence, it seems

[2] THE LANCET, August 6th, 1910, p. 412.

clear that the influence of this cause is by no means sufficient to explain events which are matters of history. It must be taken as a fact that certain families are of distinctly higher type than others, more perceptive, more intelligent, more determined, more persevering; and that, although these also may produce their weak members, the general average will be superior to that of the community at large. The real problem is to ascertain whether differences of this kind, produced at present we know not how, can be produced artificially by any process of mating; and if this be possible, whether the conditions of mating required are of such a kind as to admit of fulfilment in modern society.

To this question, we apprehend, Sir FRANCIS GALTON was prepared, at all events during his later years, to return an affirmative reply. He believed that it would be possible to bring about a general improvement of the human race by selection in marriage, and he looked forward to a future when such selection "will be required by the national conscience, and will become an orthodox religious tenet." The difficulty, as it presents itself to us, is mainly that of instituting the necessary experiments, and of excluding obvious sources of error. The late Mr. HEPWORTH DIXON published, many years ago, a book descriptive of the tenets, social and religious, of a number of queer sects or communities which were existing in the United States; and among these there was one in which marriage was not permitted as an institution, but in which certain couples were selected by the council of the community for the purpose of producing the children necessary for its continuance. Temporary unions for this purpose were only allowed between the young of either sex and the mature or middle-aged of the other, a young man being first mated with a mature woman, or a young woman with a mature man, and each being provided with younger concubines in subsequent years. All the parties to these transactions were required to be in good health; and it would be highly interesting, if it were possible, to ascertain what had become of their descendants. Short of such evidence as might thus be supplied, the chances of error in selective mating seem insuperable. The departures of children from what appears to be the parental standard, in the direction either of improvement or of deterioration, are sufficiently numerous and sufficiently manifest to require a good deal of explanation, and it is evident that the causes of these departures are to a great extent unknown. The Liturgy defines the objects of marriage to be not only the "procreation of children" but also "the mutual society, help, and comfort that the one ought to have of the other," and it would be curious to inquire whether the ordinary methods of selection are calculated to fulfil both these objects with equal efficiency, or whether one of them may not sometimes be sacrificed to the other. Nothing is more curious to a bystander, few things are less explicable, than the ground of selection which induces some particular man to take some particular woman; and it is at least possible that the impulse to selection may sometimes have as much to do with an expectation of mutual help and comfort as with any real congeniality for the purposes of procreation. In other words, the union best calculated to produce vigorous offspring may not be that which is actually brought about by the instincts of the couple concerned. Each may be attractive to the other, and yet it is conceivable that each might produce better offspring with some other mate. In these considerations we have a difficulty which lies at the root of what may be called applied eugenics; and it is a difficulty to be removed, if at all, only by a much more extended and more careful observation of facts than has been yet carried out. Perhaps the medical inspection of school children, when it has been in progress long enough for the proper systematisation of records, may afford valuable data, especially in the direction of light upon the parentage of children who display any tendency to rise out of the class in which they were born. In the meantime much work is being done by our eugenists, who must not, however, expect us to accept their conclusions as yet with great freedom. The practical science of eugenics is still very young, and eugenists must remember that the master whose loss they and we alike deplore, was an uncompromising enemy of hasty generalisation, and a consistent advocate of the slow and careful building up of truth.

## The Relation of the University to the Hospital.

CENTURIES ago, when most even of the oldest universities were comparatively young, and when the great majority of those now existing had not begun to be, a university was supposed to have fulfilled its duty when it had afforded opportunity for its students to acquire all the theoretical knowledge of the day. The practical application of knowledge, or the study of those subjects which deal with practical utility, was not considered necessary; the learning was there, but the application of that learning to everyday work was wanting, for no one had perceived the need of joining up the two things. When hospitals were first started, in this country at least, they had, of course, no connexion with seats of learning; the idea that the principal part of the pious work designed by the charitable founders might well be carried on by persons in touch with the expansion of knowledge occurred to no one for some time. In London, for example, the medical schools, while developing as outgrowths from the hospitals, were much resented by many of the managers of the hospitals. The delivery of lectures to the students and the admission of them to work in the wards were in some instances carried on against opposition, it not being perceived that in this manner only could there be trained up a class to receive the fruit of the medical experience of their seniors. Of course, this time has completely gone by, and no longer is the value of a medical school to a hospital disputed, but, as everyone knows who follows the public discussions which now take place frequently upon medical affairs, the relations between the hospital as a seat of clinical medicine and the university (or scientific corporation) as a centre of learning, are capable of debate.

Medicine in all its branches has undergone enormous progress of late, as it is necessary to point out perpetually. The subsidiary sciences of bacteriology and pathological

chemistry have assumed an importance undreamed of 30 years ago. There has, indeed, been perceived by some critics a tendency to exalt the bacteriologist to a position above that of the clinician, but this, even if it has occurred, is merely a passing phase—a recognition of the importance of bacteriology in modern medicine. Bacteriology has been unduly depreciated in the past, and therefore it is not strange that now, when its value is universally recognised, there should be a tendency to make up for past neglect, a spirit which must not be interpreted as a desire to undervalue the work of the clinician. Professor OSLER'S address on the Hospital Unit in University Work, which we publish in THE LANCET this week, pleads for the fuller equipment of hospitals on the scientific side, for in only too many cases the application of the latest knowledge to the practical needs of the hospital is hampered by want of money. Again, the hospital physician or surgeon, often an extremely busy man, has not the time to devote himself to the original study of bacteriology and pathological chemistry. He has to carry out his arduous clinical tasks and he has in most instances to earn his living. But his work will be incomplete, will indeed be dead, unless he receives that assistance from the newer branches of science which they are able to give him. It is the function of a university, so far as its medical students are concerned, to train the students and to advance research. It is the function of the hospital, not only to treat the patients who come to it, but also to assist in the training of students. The primary function of the hospital is not to serve as part of a medical school, and medical men have never asserted the dependence of the hospital on the school, though they are constantly accused of taking up this position. The treatment of the patients is the primary purpose for which hospitals have been established, but with this treatment the training of students is now so inextricably bound that the one duty cannot be divorced from the other. The training of students is simply a method of making proper preparation for the treatment in the future of patients both within the hospital and without. Money definitely left to a hospital for medical education must not be employed in supporting the patients, and in the contrary position the same respect of the wishes of the charitable public must be observed; but as the best medical treatment is the result of research carried on in medical schools, and as the charitable public desires, of course, the best medical treatment for the objects of its charity, it is clear that the ward and the laboratory cannot be treated as totally unconnected affairs. And, lastly, the services of the students in the direct treatment of the patients are of vast importance, and effect substantial savings in the funds of the great general hospitals. This point should be remembered by those who look only at the advantages offered by the hospital to the student.

Professor OSLER pleads for the fuller equipment of hospitals on the scientific side. He urges that in many instances universities are so much indebted to hospitals that they should assist financially in providing the equipment required, and he sketches the organisation of what he calls a hospital unit. In an ideal hospital each unit would include only one subject, such as medicine, and for this there would be at least 60 beds and at the head the professor of the subject. To it would be attached an out-patient department, and it would possess its own laboratories, which should form an essential part of the unit, though for the sake of economy its work might be merged with the pathological work of other units. He describes the large number of assistants that would be needed for the due carrying out of his scheme, and considers that adequate funds should be provided for the satisfactory progress of the work. It is impossible to retain good junior men in a hospital and to induce them to devote their time to its work and to the teaching of students unless adequate payment is made for their services. Professor OSLER considers that the arrangement at the Johns Hopkins Medical School is good, the university paying half of the salaries of those members of the staff who are directly engaged in teaching and one half of the laboratory expenses. The public does not recognise its debt both to the hospitals and to the university. To the opportunities for studying which are there provided the public is indebted for most of those great advances in medicine which have revolutionised the treatment of disease within the last half century; and this is a debt which the public should pay both to the hospital and to the university. Professor OSLER'S address should do good service in bringing before the medical profession the vast importance which such reorganisation of hospital administration as he projects would have.

# Annotations.

"Ne quid nimis."

## THE LOCAL GOVERNMENT BOARD AND FOOD INSPECTION.

THE Local Government Board has now issued a reprint of the portion of the medical officers' annual report for 1909–10 which relates to the work of the food inspection branch of the medical department, and includes a report by Dr. G. S. Buchanan on the work of the Board's inspectors of foods during the year. The reprint[1] will be of much value to medical officers of health and sanitary inspectors, and has a wider public interest as a record of the progress which has been made by the Local Government Board during the presidency of Mr. John Burns in reforming the methods by which the purity of our food-supplies is controlled and adulteration prevented. The progress to which we refer has been most marked in the case of imported foods. The regulations issued under the Food Regulations Act of 1907 made the port sanitary authorities responsible for the examination of food-stuffs at the place of landing, so that unsound foods can now be dealt with in bulk and their distribution throughout the country prevented. Since the system was introduced there have been many occurrences which have proved its utility; for example, the importation of frozen carcasses of pigs from China which arrived last year in consignments of several thousand carcasses at a time and needed thorough investigation, and the great increase which has lately taken place in the quantity of butchers' "offal"—livers, sweetbreads, kidneys, and similar articles—which is obtained from foreign sources. Some 150 tons of the latter on arrival in 1909 were condemned as unfit for food. In consequence of the regulations

[1] Report on the Work of Inspectors of Foods for the year 1909–10. London: Wyman and Sons, Fetter-lane, E.C.; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 4d.

the importation of barrels and boxes full of miscellaneous scraps and trimmings of meat, which a few years ago promised to reach formidable dimensions, has virtually ceased. Fats resembling inferior lard were imported during the year which had been obtained from meat condemned at American packing houses as totally unfit for human consumption. By the American law the packages containing these fats were conspicuously marked "inedible," but they were found to have reached lard refiners in this country. Over 6500 barrels were consequently detained in Liverpool until adequate proof was furnished that the material would not be used for food purposes. At the principal ports at which grain, fish, fruit, and canned foods are landed, a system of "sorting" examinations has been developed. When the preliminary examination of the consignment has shown that it contains articles which are unsound, the consignment is only allowed to go forward after a thorough sorting to the satisfaction of the port medical officer of health. In the London port and riparian sanitary districts, and in the ports of Liverpool and Manchester, more than 400 tons of unsound canned food were handed over for destruction under this system in 1909. It is satisfactory to learn from the report that the examinations thus made appear already to have caused greater care to be exercised at the place of preparation, and have enabled importers to exact a higher standard from the foreign packer. Dr. Buchanan's report shows also that the central department, besides making inspections to see that the examination of food at the ports is conducted on uniform lines, has made numerous inquiries as to the conditions under which foods are prepared abroad. The information which we have published from time to time, as a result of the special investigations which have been made in foreign countries by representatives of THE LANCET, makes it unnecessary to dwell on the importance of this matter. The establishment of a mutual understanding between the authorities abroad and at home in regard to the supervision exercised over the preparation of foods which are to be imported into the United Kingdom is in many cases a necessary adjunct to the examination of the finished articles when they arrive. Other sections of the report deal with local arrangements for meat and food inspection, foreign and colonial food legislation, and work in relation to the Sale of Food and Drugs Acts. As Dr. Newsholme observes, the procedure of the Sale of Food and Drugs Acts is such that it is often difficult to stop misleading descriptions and false labelling of foods, and to repress various trade customs which result in debasing the quality and purity of staple articles of food. The inquiries made during the year in connexion with these Acts included the misuse of formaldehyde fumigation in the preservation of meat and other foods; the failure of the Sale of Milk Regulations of 1901 in Middlesbrough and other towns to secure the supply of milk with even an average proportion of fat; the preparation of "reconstructed" milk; the presence of paraffin in margarine and talc in rice; and the contamination of canned foods by metals.

## THE ROYAL SANITARY INSTITUTE.

A COURSE of lectures and demonstrations for sanitary officers will be held from February to May at the offices of the Institute, 90, Buckingham Palace-road. The course is divided into two parts. The first part will commence on Feb. 13th and close on April 12th, and will deal with elementary physics and chemistry, public health and hygiene; and the second part will commence on April 24th, close on May 5th, and will deal with meat and food inspection. Most of the lectures will be given on Mondays, Wednesdays, and Fridays, and the lecturers will include Professor H. R. Kenwood, Dr. E. Petronell Manby, Dr. Charles Porter, and Dr. E. J. Steegmann. Inspections and demonstrations in connexion with disinfecting stations, dairy premises, municipal depôts, artizans' dwellings, offensive trades, waterworks, common lodging-houses, sanitary works, and refuse and sewage disposal works will take place from time to time. The fee for Part 1 is £2 12*s*. 6*d*., for Part 2 £1 1*s*., or for the complete course £3 3*s*. A course of lectures and practical demonstrations on physiology, personal hygiene, and the sanitation of school buildings and dwellings, principally for the purpose of assisting school teachers, women health visitors, and school nurses, will also be held at the Royal Sanitary Institute on Mondays, Wednesdays, and Fridays, commencing on March 3rd and ending on May 1st. The lecturers will include Mrs. Marion Hunter-Vaughan, L.S.A., D.P.H., Professor Kenwood, Dr. A. Beresford Kingsford, Dr. G. Eric C. Pritchard, and Dr. C. J. Thomas. The fee for the course is £1 1*s*. Both courses of lectures will commence at 7 P.M. Full particulars may be obtained from the secretary, Mr. E. White Wallis, 90, Buckingham Palace-road, S.W.

## THE SHADOW OF A DREAM.

Robert Louis Stevenson has admirably described his sensations during the light-headedness of fever. The kind of mental worry, varied by fatuous contentment, induced by the continued effort to effect something in thought or act, or both—the victim does not know which when properly light-headed—are set forth in the inimitable manner so dear to lovers of Stevenson. It is remarkable that the passage has received so little attention, for it leads us to wonder whether Stevenson ever suffered from any other hallucinations than those here adverted to. Did he, as became an imaginative Scot, ever "see a ghost"? Apparitions are the outcome of a morbid condition of the brain—at least, science mainly, if not always, believes them to be so. It is quite possible that something in the nature of light-headedness precedes all hallucinations, and in this connexion we may quote a letter we have received from a well-known man of letters. "The writer," he says, "may perhaps be forgiven for setting on record a queer little grey experience of his own, which happened within the last few days. He had retired to bed, tired, slightly liverish, and worried by fruitless discussions and money matters—the commonest of psycho-physical syndromata—but had determined to sleep and to think no more of his troubles. To this end he read a historical essay about the murder of Escovedo under Philip II. of Spain, and had settled down to sleep at 11.40 P.M. He remained awake with his eyes shut until midnight, the names and ideas in the tiresomely written article he had just been reading 'running in his brain,' to use the common phrase. At midnight he was again broad awake, and saw standing at the foot of his bed, between him and the still brightly burning fire, what shortly became the shadowy figure, life-size, of a little old woman. She wore a grey shawl and black bonnet, and looked for all the world like one of the neighbouring Kensington Workhouse women. Her face was turned away. The figure, be it said, took shape gradually, and the impression at first was that it was nothing, merely fancy. But on opening and shutting his eyes, moving his head sharply and thoroughly recognising where he was—in bed among familiar objects, &c.—the *Geisterseher* was startled for just the fraction of a minute to find that the figure had taken firm shape and did not move. It was apparently objective and outside himself. It faded away very quickly, and it then became apparent that there was a dark shadow in a corner of the ceiling near where it appeared. It was plainly of the family of dreams, 'the children of the night

without a father,' to quote the old Greek poet. Had it not been a dream-fancy, from beyond the threshold of the subconscious, it would have connected itself with old Spain and Escovedo. As it was, it had nothing to do with recent mental preoccupations, although it certainly personified, quietly and surely enough, the grey and prosaic tenour of the middle-aged existence into which it had come for the first time." Mixed offspring of liver, teichopsia, worry, recent insomnia, and ill-health, the little grey woman will remain a mystery to the writer, so he alleges. None the less, he comes of an ultra-sceptical stock, his father having been a quaternionist and a devotee of dry science, and his great-grandfather a French Jacobin of 1794, famous in his day for his scandalous addictment to the worship of the Goddess of Reason! In accordance with such family tradition, ghosts, apparitions, and the rest must have always appeared to the writer as so many manifestations of primitive thought, and as negligible, therefore, as the belief in luck or magic. Most ghost-seers are unwilling to analyse their feelings and are prone to give way to the excitement of the moment. Hence, doubtless, have arisen innumerable "well-authenticated" ghost stories, which, on analysis, should have proved to be the result of indigestion or overstrain. Savages and primitive people generally, such as the old Highlanders and Lowlanders of Scotland, probably have suffered on occasion from epic dyspepsia.

## A NEW DIAGNOSTIC OF MALARIA.

Dr. C. L. Urriola,[1] writing from Panama, describes a sign of malaria which he terms "new and pathognomonic." As he says in his introductory remarks, the discovery of the parasite in the peripheral blood is a means of diagnosis of the greatest possible accuracy, but with the serious drawback that it is inapplicable to many phases of malaria. There are, for instance, the latent forms of the disease, and the malarial cachexia, conditions in which an accurate diagnosis is of the highest importance, but in which the surest diagnostic sign, the discovery of the parasite in the blood, is not available. Certain methods of diagnosis have, it is true, been brought forward for application to these latent types of paludism in which a search for the parasite in the blood is fruitless; of these Dr. Urriola particularly mentions agglutination tests and urobilinuria. These tests have, however, been proved fallacious, since they do not adequately exclude the presence of other disorders than malaria; and Dr. Urriola in his search for a more reliable test fell back on Laveran's statement that the one constant pathological change in malaria is the presence of pigmentary elements in the blood, a change which has the merit, from the diagnostic point of view, of being peculiar to malaria. At the outset of his researches, therefore, he concentrated his attention on an examination of the plasma for the presence of pigment granules; but this was abandoned as soon as he found that an examination of the urine of malarial subjects discovered the presence of pigment with great constancy. The urine is collected carefully and a specimen is centrifugalised; the deposit is examined under a high magnification. The result, according to Dr. Urriola, is that in the urine of every malarial subject granules of pigment are to be found in one or more of four types. First, there are very fine granules massed together in more or less considerable groups; second, there are rather larger grains arranged in similar groups; third, the pigment may be found in larger masses varying in form; and finally the granules of pigment may be included within leucocytes or hyaline casts. Usually the pigment is an intense black of the Chinese ink type; in many cases blue granules are found, though these form but a small fraction of the total pigment present; and in a few cases yellow-ochre granules are discovered. These can, he claims, be readily distinguished from the translucent yellowish masses dotted with black, red, or brown granules which appear in the urine of persons suffering from other febrile disorders, both by differences in quality and by the much greater abundance of pigment in malarial urines. He illustrates the value of his observations by a relation of several cases whose nature, hitherto obscure, was declared by an examination of the urine, which discovered pigment granules. Investigators are warned that the search may need to be prolonged for half an hour, and that it should include more than one drop of the centrifugalised deposit. He concludes with a statement to the effect that the discovery of black pigment in urine is likely to prove more valuable in the diagnosis of malaria than the observation of parasites in the blood because it is applicable to every type and stage of the disease. It is probable that these statements will undergo modification at the hands of future investigators; but Dr. Urriola's claim is one of so much practical importance that it deserves attention and further examination. Whether his claim to be first in this field will be challenged also remains to be seen; the literature of modern medicine is so voluminous that it is difficult to be safe in a claim to priority.

[1] La Semaine Médicale, Jan. 4th, 1911.

## CHAMPAGNE AND ITS SIMILARS.

HOWEVER deplorable and inadvisable in their own interests the methods of seeking redress may have been which the peasants in the Champagne district recently adopted, the agitation conveys some lessons of peculiar importance to both the medical man and the public. The destruction of property, of course, is never a justifiable or satisfactory means of obtaining a remedy, but when the facts of the situation are realised it will be seen that a very real grievance existed which led to violent measures being taken. Disaster has fallen upon the vineyards of the Champagne district, as it has upon so many of the vineyards in France, in consequence of the inclemency of the season. The local *vendangeurs* lost their occupation and their means of livelihood. The proprietors sought to replenish their stocks by importing grape-juice from districts outside Champagne in which some grapes were harvested owing to the better weather conditions that had prevailed there through the season. The peasants lost their work, in spite of which wine was being made. They destroyed a good deal of the stock, protesting that the good name and character of the real Champagne product should not be trifled with or endangered in this way. The view they took is entitled to the greatest sympathy; though the means of redressing the evil was crude and not calculated to help them or to settle the industrial problems. The whole incident seems to us to throw considerable discredit on the Champagne industry. It implies that grape-juice need not necessarily come from the Champagne district in order to produce the esteemed qualities of Champagne wine. We do not believe, however, that manipulation can reproduce the inherent natural qualities of the Champagne grape itself from grapes of outlying districts with, at any rate, a success which will satisfy the connoisseur. It is clearly misleading, at all events, to call such a product champagne, and against this we protest. The fine qualities of true champagne are, after all, a matter purely of æsthetic sense, and it can hardly be disputed that sparkling wines produced in other districts and showing a similar composition and soundness to champagne answer, physiologically speaking, equally well. The high price paid for champagne is the price of its elegance and flavour and not of its composition. To produce sparkling wines by the help of grape-juice from districts

other than the Champagne area, which may successfully masquerade as Champagne, is, of course, an art, but the proceeding tends to discredit the genuine article and to lead us to inquire somewhat pertinently as to what is really being paid for in the extravagant prices commonly demanded for champagne. We are certain that many of the honest sparkling wines which are not champagne, and which are sold in this country at a third the price of champagne, are, physiologically speaking, equally valuable. There is very little difference between the composition of, for example, a sparkling Saumur or Medoc and that of a genuine champagne. They may be obtained equally dry, equally free from acid, and equally pleasing to the palate of many people if they happen to be innocent of the brand. The connoisseur, no doubt, readily detects a difference and can easily pick out the real champagne, but he is not the only consumer of sparkling wines. We have examined a number of sparkling wines of the Saumur and Medoc type, and they have yielded results on analysis which are in practical agreement with those given by a champagne. It seems to us that too little credit is given to the sparkling wines produced outside the immediate area of the Champagne districts on a sort of impression that a sparkling wine to be good and wholesome must necessarily be produced in Champagne. That impression is wrong, and the present attitude of the peasants in the Champagne districts is a striking example of the misjudgment of the public in this matter. The French Government, we suggest, might do well to inaugurate a system of control which shall secure nothing but the bottling of the Champagne-grown product under a Champagne label, and reserve another designation for other wines.

## SAPHENOUS VARIX SIMULATING FEMORAL HERNIA.

IN the *Journal of the American Medical Association* of Dec. 31st, 1910, Dr. A. H. Noehren has reported a remarkable case in which a saphenous varix simulated femoral hernia, and later, as the result of thrombosis, strangulation of the hernia. A woman, aged 37 years, the mother of seven children, of whom the youngest was three years old, complained of crampy pains all over the abdomen, but most severe in the lower part of the left side, with continual rumbling of gas. She had always enjoyed good health and had worked hard all her life. As she had been constipated for a few days she had taken several doses of castor oil, which increased the pain, though they caused a good action of the bowels. The temperature was 98° F., and the pulse was 112. The abdomen was soft and nothing abnormal could be felt in it. Just below the left saphenous opening was a swelling about the size of a walnut. It was not tender, was easily reducible, especially when the patient lay down, and gave a decided impulse on coughing. The patient said that she had noticed this swelling since the birth of her last child, and that it never gave her any trouble. Dr. Noehren diagnosed femoral hernia and recommended operation in view of the danger of strangulation. The pain he attributed to the cathartic. Three days later he was called again. The pains had grown worse, especially on the lower part of the left side, and radiated down the left thigh. Frequent soft stools were passed, and there was marked rumbling of gas. The temperature was 100° F. and the pulse was 124. Peristaltic waves could be seen over the lower left side of the abdomen, which was tender and more resistant than on the right side. The "hernial mass" was a little larger, tender, and no longer reducible. Operation was urgently advised, but was declined. During the day the temperature rose to 102·6°, and an indistinct mass could be felt in the lower left quadrant of the abdomen. On the evening of the next day the bowels acted, but with much difficulty and straining. There was considerable resistance in the lower part of the left side of the abdomen, and the whole abdomen was swollen and tympanitic, especially over the course of the colon. The patient felt nauseated and vomited a little bile. The mass was tense, tender, and dull to percussion. The temperature was 102·2° and the pulse was 124. Operation was now insisted on. An incision was made over the "hernial swelling" sufficient for a radical operation. On dissecting out the mass Dr. Noehren found to his surprise that it did not emanate from the saphenous opening, but was a pouch springing from the anterior wall of the internal saphenous vein just below the saphenous opening. The vein was tied above and below and the mass was removed. On opening it was found to be a dilatation of the vein and to contain unorganised clot. The femoral ring was not unduly large. Nevertheless, Poupart's ligament was sutured to the pectineal fascia to prevent the possibility of a future hernia or the recurrence of one that might have slipped back into the abdomen. The wound was closed with interrupted silkworm gut sutures. Examination now revealed a large infiltrating mass occupying the pouch of Douglas and extending upwards into the left side of the abdomen. It was decided to terminate the operation at this point and await developments. The temperature was irregular for ten days after the operation, after which it suddenly became normal, where it stopped during the following eight days that the patient stayed in hospital. During this time the pelvic mass gradually became smaller and on her discharge could barely be felt. Saphenous varix in the situation described is very rare. According to MacCready's statistics, quoted in Keen's text-book on "Surgery," a saphenous varix, an abscess, and enlarged glands have been mistaken for femoral hernia 9, 47, and 115 times respectively in circumstances that allow comparison. In this connexion we are talking of simple varix, but in the case narrated above the circumstances were different. After three days a tumour with impulse on coughing and easily reducible became no longer reducible and tender, while there were a rising temperature, abdominal pains, a swollen tympanitic abdomen, and the other symptoms mentioned. After the operation the explanation was simple enough. The varix had become thrombosed, and the temperature and abdominal symptoms were due to pelvic exudation.

## RAG FLOCK.

THE representatives of the rag flock trade would be well advised, we think, not to haggle over refinements if they wish to see their manufactures placed on a hygienic basis. There is at present a dissension amongst them; there are those who are in favour of efficient steam sterilisation, while others regard thorough washing coupled with drying by heat as all that is necessary to turn out a clean material. It seems to us that if, as a result of legislation, rag flock used for bedding and upholstery is compelled to undergo a process which is as effectual as the laundry is with soiled linen, the whole business would be freed from reproach. We do not expect our shirts to be completely sterile; we are content if they are clean. It may be suggested, however, that in the laundering process the fabrics are boiled and that thus some amount of sterilisation is effected. While that is probably true, it would not be difficult to insist that washed rag flock should afterwards be dried by heat, a step which, as a matter of fact, is adopted by the manufacturers themselves as a convenient method of finishing off the material. After carefully considering the *pros* and *cons* of the question, it seems to us to be a counsel of perfection to insist upon a degree of sterilisation for rag flock equal to

that required for, say, a surgical dressing. Moreover sterilisation does not necessarily remove filth, and the efficiency of sterilisation cannot be checked in the ready and simple manner that the efficiency of a washing process can. We have known sterilised bedding material to develop an offensive smell after a time, an objectionable quality which would be obviated by efficient washing. It will be a pity if the very desirable legislation on this matter should be delayed by setting up an unnecessary ideal, and on carefully considering both the scientific and economic aspects of the question we think that the majority of those concerned would welcome a Bill from Parliament providing for the cleansing and heat-drying of rag flock on the lines suggested.

## REST IN BED IN ANGINA PECTORIS.

AT a meeting of the Académie de Médecine of Paris on Nov. 29th M. Ch. Fiessinger presented an elaborate study of the effect of rest in bed in angina pectoris due to organic disease (in which the attacks are always produced by exertion). The late M. Huchard has insisted on the value of reducing the blood pressure in angina pectoris, the crises of which are liable to be accompanied by increased blood pressure. M. Fiessinger pointed out that rest in bed not only lowers blood pressure but acts as a tonic to the heart and diminishes its irritability. What part is played by these different factors? In his cases he found four different conditions: 1. The blood pressure during the pain was normal or low and was not modified by rest in bed. 2. The pressure during the attack was raised but was not modified by rest in bed. These two classes formed only a minority of the cases. 3. The pressure was high and was lowered by rest in bed; this held for two-thirds of the cases. 4. In exceptional cases the pressure was not lowered, but even rose, and curiously this was not accompanied by increase of the pain. In the first class three patients were seen. An example was a man, aged 66 years, who had an aortic systolic murmur and showed only slight acceleration of the pulse on walking. An attack of angina pectoris followed the exertion of putting to bed a sick relative. The maximum blood pressure with Pachon's sphygmometer was 17 centimetres of mercury and remained the same after rest in bed, which caused the symptoms to disappear. In the second class three patients in the "sixties" suffering from atheroma with aortic disease were seen. The maximum pressure varied from 24 to 27 and was not modified by rest in bed. Yet the pain was much diminished—a proof that it is not the arterial tension which caused the pain. In the third class 11 patients were seen. Thus a man, aged 64 years, had a maximum pressure of 28 during an attack. Under rest in bed, ice to the præcordium, milk diet, and morphine injections the pressure was reduced to 19. Eight patients showed reduction of pressure of from 2 to 4 centimetres of mercury with great relief. In the fourth class, in which a high blood pressure was not lowered by rest in bed, the effect on the pain was variable; in some cases it was considerably relieved, in others only slightly. M. Fiessinger concludes that the part played by high blood pressure in angina pectoris has been exaggerated, and that this condition no more produces the crises than it does those of biliary colic or puerperal eclampsia. Rest in bed relieves the subjects of angina pectoris, but only partly by its effects on the blood pressure. To give full results rest in bed must be prolonged to six weeks, and even to two months when the patient cannot take a step without provoking pain. A milk diet should be ordered; later, farinaceous food may be added. The usual drugs (theobromine, trinitrine, morphine, and digitalin) are given at the same time. But nothing has such a certain and rapid action as rest in bed. Recourse should be had to it again if after a period of immunity the symptoms recur. The greatest relief is obtained in aged patients or in those who lose flesh during the treatment; the least in patients suffering from concomitant aortic insufficiency.

## TOBACCO SUBSTITUTES FOR CHILDREN.

IF a policeman sees a child in a street or public place smoking a cigarette which proves on inspection to contain tea-leaves or some smokable herb other than tobacco, that child commits an offence under the clauses of the Children Act (1908) dealing with the prohibition of juvenile smoking, for the expression "cigarette" includes cut tobacco rolled up in paper, tobacco leaf, or other material in such form as to be capable of immediate use for smoking. The Act, therefore, does not leave untouched the question of the possibility of tobacco substitutes being as injurious to the child smoker as genuine tobacco. The Act dealing with this part of the subject assumes that not only the smoking of tobacco but of substitutes also is an offence, because all are calculated to injure the health. Nicotine is the substance commonly looked upon as the injurious constituent peculiar to tobacco, but doubt has frequently been expressed as to whether any important amount of the alkaloid is contained in the smoke, and therefore whether nicotine reaches the mouth. Tobacco smoke is a poison apart altogether from the question of its containing nicotine. Amongst other things contained in tobacco smoke are the poisons pyridin and carbon monoxide. The production of carbon monoxide and pyridin are, of course, not peculiar to the smoking or incomplete combustion of tobacco. They are produced in practically all cases where the combustible matter contains carbohydrates and nitrogenous matters. It would be an astonishing fact to find, for instance, in the incomplete combustion of tea-leaves, cane, paper, coltsfoot, or any dried herb that the smoke was free from one or other of these common pyroligneous products, as the chemist calls them. It has come to our knowledge that certain herbal mixtures are made for the express purpose of providing children under 16 years of age with something to smoke, under the idea apparently that the Act applies strictly to tobacco. We can well believe that such mixtures are likely to be just as mischievous as, at any rate, the lighter tobaccos, and if the smoking of these substitutes escapes the vigilance of the police the good intentions of the Children Act may be frustrated. The mixture is clearly sold under a misapprehension on the part of the sellers, as its sale to children should come under the same restrictions as tobacco.

## THE ISOLATION OF EPIDEMIC DISEASES BY THE METROPOLITAN ASYLUMS BOARD IN 1910.

IT is difficult to over-estimate the beneficial effect of the Metropolitan Asylums Board hospitals on the health of London, through the isolation and treatment of epidemic diseases, more especially of scarlet fever, diphtheria, and enteric fever. According to returns furnished to the Registrar-General during the 52 weeks of last year, it appears that 15,053 cases of these three diseases were admitted to the hospitals of this Board—namely, 9682 of scarlet fever, 4698 of diphtheria, and 673 of enteric fever. During the year 10,231 cases of scarlet fever were discharged as recovered, and 206 deaths from this disease occurred in these hospitals; these 206 deaths were equal to 2·0 per cent. of the 10,437 completed cases during the year, and it is interesting to note that in addition to these 206 deaths only eight fatal cases of scarlet fever were registered in London last year (of which two occurred in the London Fever Hospital), and that the 214 total deaths from this disease were considerably less than half the average annual number registered in London during the preceding nine years 1901–09, and were fewer

than in any previous year for which similar information is available. Of diphtheria, 4415 cases were discharged during last year from these isolation hospitals as recovered, and 360 deaths from this disease occurred therein. These 360 deaths from diphtheria were in the proportion of 8·0 per cent. of the 4775 completed cases of this disease. The total deaths from diphtheria registered in London during last year were 434, of which 360, or 83 per cent., occurred in the Metropolitan Asylums hospitals and three in the London Fever Hospital; in the three preceding years the registered deaths from this disease in London were 781, 724, and 605 respectively, showing a steady decline, which was most marked last year. With regard to the isolation of enteric fever, 521 cases of this disease were discharged during last year from these Metropolitan Asylums hospitals as recovered, and 126 deaths therefrom occurred in these hospitals. These 126 deaths showed a proportion of 19·5 per cent of the 647 cases completed during the year. The number of deaths referred to enteric fever in London during the 52 weeks of last year were 198, of which 126, or 64 per cent., occurred in the Metropolitan Asylums hospitals; these 198 deaths were 107 below the average annual number in the nine preceding years 1901–09, but showed an increase of 52 upon the unprecedentedly low number in 1909. With reference to the case-mortality of these three diseases in the Metropolitan Asylums hospitals, it may be noted that the mortality of scarlet fever has shown a marked and continuous decline in recent years, suggesting a considerably milder type of the disease; whereas the case-mortality of diphtheria and of enteric fever have shown no similar steady decline. It is a fact, however, of which the explanation is not obvious, that the case-mortality during last year of both scarlet fever and diphtheria in the Metropolitan Asylums hospitals was considerably higher than among the comparatively small number of cases under treatment in the London Fever Hospital.

## THE DILEMMA OF THE BATTERSEA TOWN COUNCIL.

As will be seen by a note which we publish on p. 279 of our present issue rumblings are still to be heard in Battersea in connexion with the brown dog storm, but the continuance of bad weather predicted by an ex-mayor, who announced that the "memorial would have to be restored by the council before very long," seems likely to be falsified; for an action in the High Court to enforce the contract between members of the International Antivivisection Council and the Mayor, &c., of Battersea with respect to the erection and maintenance of the memorial has resulted in a judgment which enables an alternative weather forecast to be made with confidence. It is, however, unnecessary to devote further space to the matter here. It will be noticed that at the same meeting at which these echoes were heard the subject of supplying the poor of Battersea with diphtheria antitoxin came up for discussion, with the result that the town council, which, be it noted, is the sanitary authority that has charge of the health of the people, postponed for six months the consideration of the opportunities afforded by the recent Order of the Local Government Board which enables diphtheria antitoxin to be supplied and administered gratuitously, though it appears that some of the antivivisectionists and antivaccinationists on the council had misgivings as to whether in the interests of the health of the poor they ought not to take a different view. It would be interesting to know what the intelligent artisans of Battersea think of this act of the council. Although the practice of supplying vaccines and sera through the agency of local authorities is daily increasing, as also is the demand for these substances in relation to numerous diseases, the people of Battersea will be unable to procure them save through private or Poor-law channels. Over and over again have we insisted in these columns upon the enormous importance of the earliest possible employment of the diphtheria antitoxin, and we have drawn attention to the numerous reports of medical officers of health as to the frequency with which diphtheria patients reach the isolation hospital even in advanced disease and no antitoxin has been administered. Our brief report states that two of the medical men on the council were apparently not on the side of the gratuitous supply of antitoxin, and that one of them spoke of the dangers of administering the injection in dirty homes. When the operation is performed carefully this risk cannot be great, not one, we think, that can be considered in any sense commensurate with the dangers of untreated diphtheria.

## A REVIEW OF BACTERIOLOGY AND GENERAL PARASITOLOGY.

OUR contemporary, the *Medical Officer*, is to be congratulated on the new venture which accompanies the first issue of the present year. A supplement to the paper, bearing the title "The Review of Bacteriology, General Parasitology, and Allied Subjects in their Relationship to Pa hology and Hygiene," is henceforth to be published at least once in each month. The numbers of papers which appear annually in contemporary scientific journals at home and abroad render the task of keeping up with recent work a matter of great difficulty. To read the specialist reviews published on the continent, and analyses of recent work in pathology, bacteriology, hygiene, tuberculosis, the *Bulletin* of the Pasteur Institute of Paris, and so on, means the perusal of several large volumes annually and entails a knowledge of the French and German languages at any rate. For this reason a summary of such work concisely worded in the English language should meet with a large measure of success. The *Medical Officer* has been fortunate in securing as editor of its review Mr. A. G. R. Foulerton, and it has been decided to publish the supplements so that they can be bound, if desired, separately from the journal itself. The January Supplement contains reviews of 34 papers. The following subjects are dealt with: tuberculosis (7), leprosy (2), typhoid and paratyphoid fever (3), cholera and diphtheria. The recent work on the bacteriology of cerebro-spinal meningitis, broncho-pneumonia in infants, and non-tuberculous diseases of the lungs is passed in review. Then there is an interesting note of Metchnikoff's observations on the flora of the intestines, and of Wollman's on the action of the small intestine on bacteria. The aerobic and anaerobic bacteria of milk and the preservation of butter receive attention, and the laboratory investigations into the etiology of pleuro-pneumonia of cattle are dealt with. Under the heading of protozoology the review deals with the as yet unfinished works on experimental syphilis in the lower animals and with the recent additions to the study of trypanosomiasis.

THE Rizzoli Institute of Orthopædics, Bologna, announces the award of the Humbert I. Prize in Orthopædics for the second quinquennial period ending Dec. 31st, 1909, to Professor Wilhelm Schulthess of Zürich for the work "Die Pathologie und Therapie der Rückgratsverkrümmungen" (Jena: Fischer, 1906). The judges were Professor A. Codivilla of Bologna, Professor G. Kirmisson of Paris, and Professor O. Vulpius of Heidelberg.

THE Lettsomian lectures on "A Review of the Operations for Stone in the Male Bladder" will be delivered by Mr. William Frederick Haslam on Feb. 6th and 20th, and March 6th, at 9 P.M., at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.

# KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE report of the meeting of the Governors and Council of King Edward's Hospital Fund for London, which was held on Dec. 14th at St. James's Palace under the Presidency of the Duke of TECK, will be found on pp. 1852–53 of THE LANCET, Dec. 24th, 1910. The following is a list of the grants recommended by the Distribution Committee. (*Note*—The absence of a grant does not necessarily imply dissatisfaction.)

Alexandra Hospital for Children, £400.
Beckenham Cottage Hospital, £50, £25 of which to renewal of floors.
Belgrave Hospital, £1000, to reduce building debt.
Blackheath and Charlton Cottage Hospital, £100.
Bolingbroke Hospital, £1500.
British Lying-in Hospital, £400.
Catholic Nursing Institute. No grant.
Central London Ophthalmic Hospital, £1000, to rebuilding in accordance with scheme submitted to the Fund.
*Central London Throat and Ear Hospital.
Charing Cross Hospital, £3000.
Chelsea Hospital for Women, £750.
Cheyne Hospital. No grant.
City of London Hospital for Diseases of the Chest, Victoria-park, £4000.
City of London Lying-in Hospital, £500.
Clapham Maternity Hospital, £200.
Dreadnought Hospital, £4000, £1000 of which to reduce debt.
Ealing Cottage Hospital, £500, to rebuilding in accordance with scheme submitted to the Fund.
East End Mothers' Lying-in Home, £500, £250 of which to reduce debt.
East London Hospital for Children, £2000, £250 of which to improvements.
Eltham and Mottingham Cottage Hospital, £100.
Evelina Hospital, £150.
French Hospital, £200.
Friedenheim Hospital, £50.
General Lying-in Hospital, £250.
German Hospital, £200.
Gordon Hospital for Fistula, &c., £25.
Great Northern Central Hospital, £4000, £1000 of which to reduce debt.
Grosvenor Hospital for Women, £350.
Guy's Hospital, £7500, £1500 of which to building improvements in accordance with scheme submitted to the Fund.
Hampstead General Hospital, £3150, £1500 of which to reduce debt and £1650 on account of maintenance and rent, as agreed upon amalgamation with North-West London Hospital.
Home and Infirmary for Sick Children, £250, £50 of which to outside staircase.
Home for Mothers and Babies, Woolwich, £100.
Hospital and Home for Incurable Children, Hampstead, £100, £75 of which to improvements.
Hospital for Consumption, Brompton (including Sanatorium at Frimley), £3000.
*Hospital for Diseases of the Throat.
Hospital for Epilepsy and Paralysis, £750.
Hospital for Invalid Gentlewomen, £200.
Hospital for Sick Children, £4000, £1500 of which to recent improvements in accordance with scheme submitted to the Fund.
Hospital for Women, Soho square, £1000.
Hospital of St. John and St. Elizabeth, £350.
Infants Hospital, £25.
Italian Hospital, £500.
Kensington and Fulham General Hospital (late Queen's Jubilee Hospital). No grant.
Kensington Dispensary and Children's Hospital, £25.
King's College Hospital, £7000, £5000 of which to removal fund.
Leyton, Walthamstow, and Wanstead Children's and General Hospital, £250.
London Fever Hospital, £250.
London Homœopathic Hospital, £500, to rebuilding of Nursing Home in accordance with scheme submitted to the Fund.
London Hospital, £12,000.
London Lock Hospital, £1500, to the Harrow Road Hospital, £1000 of which to reduce debt.
London Temperance Hospital, £1500.
*London Throat Hospital.
Maternity Charity and District Nurses' Home, Plaistow, £100.
Medical Mission Hospital, Balaam-street, Plaistow, £35.
Memorial Hospital, Mildmay Park, £50.
Metropolitan Hospital, £3500, £1000 of which to reduce debt on structural improvements carried out in accordance with scheme submitted to the Fund.
Middlesex Hospital, £4000.
Middlesex Hospital Cancer Charity. No grant. The Committee are glad to see that no assistance from the Fund is required this year.
Mildmay Mission Hospital, £400.
Miller General Hospital for South-East London, £1500, £750 of which to extension, subject to scheme being approved.
Mount Vernon Hospital for Consumption (including Sanatorium at Northwood), £1500.
National Anti-Vivisection Hospital. No grant.
National Dental Hospital, £400, £150 of which to improvements in accordance with scheme submitted to the Fund.
National Hospital for Diseases of the Heart. No grant.
National Hospital for the Paralysed and Epileptic, £1000.
New Hospital for Women, £1500, £750 of which to building improvements in accordance with scheme submitted to the Fund.
Norwood Cottage Hospital, £100.
Paddington Green Children's Hospital, £1750, £1000 of which to reconstruction of Out-patient Department, subject to approval of scheme.
Passmore Edwards Acton Cottage Hospital, £75.
Passmore Edwards East Ham Hospital, £50.
Passmore Edwards Hospital for Willesden, £25.
Passmore Edwards Cottage Hospital, Wood Green, £25.
Poplar Hospital, £400.
Prince of Wales's General Hospital, £4000, £2000 of which to reduce debt.
Queen Charlotte's Lying-in Hospital, £1500, £500 of which to improvements.
Queen's Hospital for Children, £3000, £1250 of which to reduce building debt.
Royal Dental Hospital of London, £1250, £250 of which to recent improvements.
*Royal Ear Hospital.
Royal Eye Hospital, £1000, £250 of which to reduce debt.
Royal Free Hospital, £4000.
Royal Hospital for Diseases of the Chest, City-road, £1250, £250 of which to reduce debt.
Royal Hospital, Richmond, £200, £50 of which to fire-escape balconies.
Royal London Ophthalmic Hospital, £2500.
Royal National Orthopædic Hospital, £7000, £250 of which as agreed upon amalgamation.
Royal Waterloo Hospital for Children and Women, £1500.
St. George's Hospital, £2000. To be retained until the Fund is satisfied that the relations between hospital and medical school are in accordance with the principles intimated by the Fund in March, 1909
St. John's Hospital for Diseases of the Skin, £600, £500 of which to reduce building debt.
St. John's Hospital, Lewisham, £300.
St. Luke's House, £50.
St. Mark's Hospital, £400, £300 of which to improvements in nursing accommodation in accordance with scheme submitted to the Fund.
St. Mary's Hospital, £6500, of which £2500 to reduce debt.
St. Mary's Hospital for Women and Children, Plaistow, £1500, £1000 of which to enable the new building to be furnished and opened free of debt.
St. Monica's Hospital, £100.
St. Peter's Hospital for Stone, £150.
St. Saviour's Hospital, Osnaburgh-street, £200.
St. Vincent's Home for Crippled Boys. No grant.
Samaritan Free Hospital, £1000.
Santa Claus Home, £25.
South Wimbledon, Merton and District Cottage Hospital, £1000, to the rebuilding of the hospital under the name of the Wimbledon and Merton Hospital, in accordance with scheme submitted to the Fund.
University College Hospital, £5500, £1500 of which to reduce debt.
Victoria Hospital for Children, £1000.
West-End Hospital for Diseases of the Nervous System, £250.
Western Ophthalmic Hospital, £275, to reduction of debt on rebuilding of out-patient department.
West Ham and East London Hospital, £5500, £5000 of which to building fund to enable the new building to be opened free of debt.
West London Hospital, £5000, £2000 of which to reduce debt, on the understanding that special efforts are made to obtain increased support from the public.
Westminster Hospital, £3000.
Wimbledon Cottage Hospital, £550, £500 of which to rebuilding in accordance with scheme submitted to the Fund.
Total of grants to hospitals for the year 1910, including £2000 set aside for amalgamation of throat and ear hospitals, £150,000.

The grants recommended by the Convalescent Homes Committee are as follows:—

### *Consumption Sanatoriums.*

Children's Sanatorium, Holt, Norfolk. No grant. The Committee are glad to see that the balance of the building fund for a permanent sanatorium has been provided by a private donor.
Devon and Cornwall Sanatorium, Didworthy, South Brent, £875, in consideration of the reservation of ten beds during 1911 for the use of certain London hospitals.
Fairlight Sanatorium, Hastings. No grant.
Kelling Sanatorium, Holt, Norfolk, £175, in consideration of the reservation of two beds during 1911 for the use of certain London hospitals.
Maitland Sanatorium, Peppard, Oxon. No grant.
National Association for the Establishment and Maintenance of Sanatoria for Workers, Benenden, Kent, £250 to reduce building debt.
Northampton Sanatorium, Creaton, Northants, £525, in consideration of the reservation of six beds during 1911 for the use of certain London hospitals.
Royal National Hospital for Consumption, Ventnor. No grant.
Total of grants to consumption sanatoriums, £1825.

### *Convalescent Homes.*

Alexandra Hospital for Children, Painswick, £25.
All Saints' Convalescent Home for Children, Highgate, £25.
Baldwin Brown Home for Convalescent Poor, Herne Bay, £25.
Brentwood Convalescent Home for London Children, Brentwood, £25.
Charing Cross Hospital, Limpsfield, £200, £100 of which to reduce debt and £100 maintenance grant with a view to encouraging the admission without payment of patients direct from the hospital.
Chelsea Hospital for Women, St. Leonards, £50, with a view to encouraging the admission without payment of patients direct from the hospital.
Children's Cottage Hospital, Cold Ash, Newbury, £25, in consideration of convalescent cases.
Children's Home Hospital, Barnet, £25, in consideration of convalescent cases.
Convalescent Police Seaside Home, Hove, £50.
Deptford Medical Mission, Bexhill, £25.
East London Hospital for Children, Bognor, £250.
Erskine House, Hampstead Heath, £25.
Great Northern Central Hospital, Clacton-on-Sea, £100.

Home and Infirmary for Sick Children, Sydenham, Broadstairs, £50.
Hospital for Sick Children, Great Ormond-street, Highgate, £225.
King's College Hospital, Hemel Hempstead, £100.
London Hospital, Tankerton, £50.
Mary Wardell Convalescent Home for Scarlet Fever, Stanmore, £25.
Metropolitan Convalescent Institution (Children), Broadstairs, £150.
Metropolitan Convalescent Institution, Walton, £200.
Metropolitan Hospital, Cranbrook, £50.
Middlesex Hospital, Clacton, £400.
Mildmay Mission Hospital, Hendon, £100.
Mrs. Kitto's Free Convalescent Home, Reigate, £50.
National Hospital for the Paralysed, Finchley, £100, with a view to facilitating the admission of patients without payment.
Paddington Green Children's Hospital, Slough, £100.
Poplar Hospital, Walton-on-Naze, £50.
Queen Charlotte's Lying-in Hospital, Kilburn, £50.
St. Andrew's Convalescent Home, Folkestone, £100.
St. Andrew's Convalescent Hospital, Clewer, £50.
St. Mary's Home for Children, Broadstairs, £50, in consideration of convalescent cases.
St. Michael's Home for Men and Women, Westgate-on-Sea, £25.
Sunshine Home of Recovery, Hurstpierpoint, £25.
Surgical Home for Boys, Banstead, £25.
Victoria Home for Invalid Children, Margate, £100 to building, in consideration of convalescent cases.
Victoria Hospital for Children, Chelsea, Broadstairs, £225.
Winifred House Invalid Children's Convalescent Hospital Home, Tollington Park, £25.
Total of grants to convalescent homes, £3175.

* With regard to the throat, nose, and ear hospitals, the committee recommend that the policy of setting aside grants towards amalgamation in place of separate awards to any of the four institutions concerned should still be continued, and they have voted £2000 this year to this purpose.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the December meeting of the committee 27 cases were considered and grants amounting to £220 made to 25 of the applicants. Appended is an abstract of the cases relieved.

L.S.A., aged 60 years. Is temporarily incapacitated, and when helped earlier in the year was given leave to apply again in six months' time. Relieved once, £10. Voted £5.

M.R.C.S., L.R.C.P., aged 42 years. Is in ill-health and dependent on help from friends. Wife gives music lessons. One child, aged 8. Voted £5.

M.R.C.S., L.R.C.P., aged 47 years. Quite incapacitated and dependent on friends. No children. Voted £10.

Widow, aged 50 years, of M.R.C.S., L.S.A. Unprovided for at death of husband six months ago and has been obliged to give up a post as companion on account of a nervous breakdown. No children. Voted £5.

Widow, aged 61 years, of M.R.C.S., L.S.A. Husband's savings were exhausted by a three years' illness preceding death, and applicant endeavours to support herself by taking boarders. Seven children, but one an invalid and the others only just self-supporting. Voted £12.

Widow, aged 53 years, of L.R.C.P., L.R.C.S. Edin. No income; no children; lets lodgings. Voted £5.

Widow, aged 64 years, of M.R.C.S., L.S.A. Lost her husband a few months ago after a long illness and is endeavouring to obtain resident patients or paying guests. Voted £6.

Daughter, aged 55 years, of late M.D. Aberd. Has supported herself until recently, but is now broken down in health. Voted £10.

Widow, aged 70 years, of M.R.C.S., L.R.C.P. Slight provision made by husband has to be supplemented by gifts from friends and is quite inadequate for present unavoidable expenses due to illness. Voted £5.

Widow, aged 59 years, of M.R.C.S., L.S.A. No income and has exhausted the proceeds of the sale of her furniture. Health very feeble. Relieved once, £16. Voted £10.

Widow, aged 75 years, of M.R.C.S. Dependent on an Old Age Pension and occasional gifts from friends. Relieved twice, £24. Voted £12.

Widow, aged 69 years, of M.R.C.S. No income and dependent for a home on a son-in-law, who can ill afford to assist. Relieved once, £10. Voted £10.

Widow, aged 49 years, of M.R.C.S. Husband's means exhausted by a long illness ending in death, and applicant is endeavouring to establish a boarding-house. Relieved once, £10. Voted £10.

Widow, aged 52 years, of M.R.C.S. Nursed her husband for several years before his death, and is now herself incapacitated and a candidate for a pension from a Home for Incurables. Dependent on two sons whose earnings are very small. Relieved seven times, £92. Voted £10.

Widow, aged 51 years, of L.S.A. No income and health too uncertain to attempt regular employment. Two daughters, aged 18 and 16, the latter having just obtained a post as governess. Relieved five times, £46. Voted £12.

Widow, aged 66 years, of L.R.C.P. Only income a few shillings a week from a house, if let. No children. Relieved 11 times, £126. Voted £12.

Widow, aged 75 years, of M.D. Glasg. Endeavours to support herself by taking lodgers, but is unable to pay her rent which is considerably overdue. Relieved seven times, £36. Voted £5.

Daughter, aged 64 years, of late M.D. Edin. Has supported herself for many years as a companion, but is now dependent on this Fund and another charitable society. Relieved six times, £72. Voted £12.

Daughter, aged 70 years, of late L.R.C.S., L.S.A. Takes boarders but finds it impossible to make both ends meet and is in arrears with her rent. Relieved three times, £20. Voted £10.

Widow, aged 54 years, of L.R.C.P., L.R.C.S. Edin. No income and is in very bad health. Children only able to give slight help. Relieved four times, £48. Voted £12.

Widow, aged 66 years, of M.R.C.S. Receives a pension from Epsom College and requires a little help in consequence of the unavoidable withdrawal of assistance by friends. Relieved six times, £54. Voted £10.

Widow, aged 65 years, of M.R.C.S. Dependent on the help of two relations and small profits from a boarder, if able to obtain one. No children. Relieved once, £6. Voted £6.

Widow, aged 65 years, of L.R.C.P., L.R.C.S. Edin. Has supported herself since husband's death several years ago, but is now crippled by rheumatoid arthritis and dependent on a sister who is a teacher. Relieved once, £12. Voted £12.

Daughter, aged 63 years, of late M.D. Edin. Gave up a post as companion to nurse an elder sister who is a permanent invalid and is dependent on this Fund and a small yearly grant from an old friend. Relieved five times, £60. Voted £12.

Daughter, aged 40 years, of late F.R.C.S. No income and unable to follow any regular occupation on account of ill-health. Relieved ten times, £96. Voted £2 and case to be reconsidered in a month's time.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, Jan. 26th, 1833.

### ARTIFICIAL MODE OF INDUCING PARTURITION.

IN the annual statements just published by Professor Ciniselli of Pavia, regarding the clinical events in the obstetric establishment of that university, there is a case of artificial delivery at the eighth month, successfully induced by the introduction of a sponge dilator into the mouth of the uterus. The sponge first employed was about an inch long, and the thickness of a quill. When its increase of size had dilated the orifice to a certain extent, another, a little larger, was substituted for the first, and with the same effect. In the course of forty-eight hours four sponges were employed, when the delivery was accomplished by the natural contractions of the uterus, and with safety to mother and child.

PERSIAN OPIUM.—Dr. EPPS has sent to our office a specimen of a new kind of opium, adding a fifth,—the Persian,—to the four which we already possess, the Turkey, the East Indian, the Egyptian, and the European. "It has been imported into this country," he observes, "only very lately, and the specimen is one of the first parcel imported. It comes from Trebizond, in Persia, and was obtained from Messrs. Yeatman and Linn, chemists, of Fore-street, City. It is in small cylindrical pieces, rolled in polished paper, at one end closed with cotton, at the other partially open. Its colour is *reddish-brown*, and in this character it approaches to the best opium, though much lighter in colour than the Turkey. It has a very fetid, heavy smell, and a bitter, acrid taste. It would appear from its sensible qualities to be very valuable and active, and, it is to be remembered, that a great part of the 'Turkey opium,' as it is called, comes from Persia."

## VITAL STATISTICS.

### VITAL STATISTICS FOR 1910.

THE following are the provisional figures showing the birth-rates and death-rates in England and Wales in the year 1910:—

| — | Annual rates per 1000 living. | | | | Deaths under one year to 1000 births. |
|---|---|---|---|---|---|
| | Births. | Deaths. | | Principal epidemic diseases. | |
| | | Crude. | Corrected.* | | |
| England and Wales | 24·8 | 13·4 | 13·4 | 0·99 | 106 |
| 77 great towns ... | 25·0 | 13·4 | 14·3 | 1·23 | 115 |
| 136 smaller towns | 23·7 | 12·4 | 12·9 | 0·88 | 104 |
| England and Wales less the 213 towns | 25·0 | 13·6 | 12·8 | 0·74 | 96 |

* The corrected death-rates are the rates which would have been recorded had the age and sex constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

### HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8374 births and 5411 deaths were registered during the week ending Jan. 21st. The annual rate of mortality in these towns, which had been equal to 14·3 and 15·5 per 1000 in the two preceding weeks, further rose to 16·4 in the week under notice. During the first three weeks of the current quarter the death-rate in these towns averaged 15·4 per 1000. In London

the mean death-rate during the same period was equal to 15 5. The annual death-rates in the 77 towns during last week ranged from 7·1 in King's Norton, 7·7 in Handsworth, 9·3 in West Hartlepool, and 9 9 in Gateshead, to 21·0 in Bury, 21·4 in Coventry, 23·0 in Middlesbrough, and 25·1 in Stockton on-Tees. The 5411 deaths from all causes in the 77 towns last week showed a further increase of 308 on the numbers returned in the three preceding weeks, and included 455 which were referred to the principal epidemic diseases, against 392 and 448 in the two preceding weeks; of these 455 deaths from epidemic diseases, 204 resulted from measles, 85 from whooping-cough, 68 (of infants under two years of age) from diarrhœa and enteritis, 63 from diphtheria, 20 from scarlet fever, and 15 from enteric fever, but not one from small-pox. The fatal cases of measles, which had been 160 and 191 in the two preceding weeks, further rose last week to 204, and caused the highest annual rates, 1 9 in Tottenham, Coventry, and Middlesbrough, 2·2 in Oldham, and 2·6 in Sheffield. The 85 deaths from whooping-cough were within two of the number in the previous week, and caused rates equal to 1·1 in Leyton, and 1·2 in Willesden, in Reading, and in York. The 68 deaths of infants under two years from diarrhœa and enteritis showed an increase of 12 upon the number returned in the previous week. The fatal cases of diphtheria, which had been 76 and 63 in the two previous weeks, were again 63 last week, of which 20 occurred in London and its suburban districts, 4 in Birmingham, 5 in Manchester and Salford, and 3 each in Portsmouth, Leeds, Cardiff, and Swansea The 20 fatal cases of scarlet fever showed a decline of 11 from the number in the previous week; they included 5 in London, 4 in Liverpool, and 3 in Stoke-on-Trent. The deaths referred to enteric fever, which had been 24 and 20 in the two preceding weeks, further declined last week to 15; 2 each were returned in London, Stoke-on-Trent, and Liverpool. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the ten preceding weeks from 1882 to 1410, had further fallen to 1349 on Saturday last; 126 new cases of this disease were admitted to these hospitals during the week, against 154 and 135 in the two preceding weeks. These hospitals also contained on Saturday last 834 cases of diphtheria, 271 of measles, 118 of whooping-cough, and 72 of enteric fever. The 1613 deaths from all causes in London last week (showing a further increase of 177 upon recent weekly numbers) included 366 which were referred to diseases of the respiratory system, against 263, 289, and 292 in the three preceding weeks. In the 77 towns 169 deaths resulted from different forms of violence, against 180 in each of the two previous weeks; and 433 inquest cases were registered. The causes of 37, or 0·7 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Stoke-on-Trent, Salford, and in 51 other smaller towns; the 37 uncertified causes of death in the 77 towns last week included 9 in Liverpool, 5 in Birmingham, 3 in Barrow-in-Furness, and 2 each in Reading, Rochdale, Burnley, Sheffield, and South Shields.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 836 births and 544 deaths were registered during the week ending Jan. 21st. The annual rate of mortality in these towns, which had been equal to 14·3 and 16 6 per 1000 in the two previous weeks, declined again to 14·8 in the week under notice. During the first three weeks of the current quarter the death-rate in these towns averaged 15·2 per 1000, and was 0·2 below the mean rate during the same period in the 77 English towns. The annual death-rates during last week in the eight Scotch towns ranged from 11·1 and 11·5 in Perth and Paisley to 17·6 in Greenock and 17·7 in Dundee. The 544 deaths from all causes in the eight towns last week showed a decline of 67 from the number returned in the previous week, and included 43 which were referred to the principal epidemic diseases, against 56 and 51 in the two previous weeks; these 43 deaths were equal to an annual rate of 1·2 per 1000, the highest epidemic rates being 1·5 in Glasgow and 3·6 in Leith. Of these 43 deaths from the principal epidemic diseases, 20 resulted from whooping-cough, 13 from diarrhœa, 6 from diphtheria, and 2 each from scarlet fever and enteric fever, but not one either from measles or from small-pox. The fatal cases of whooping-cough, which had been 20 and 18 in the two previous weeks, increased again to 20 last week, of which 12 occurred in Glasgow, 4 in Leith, and 2 in Edinburgh. The 13 deaths attributed to diarrhœa corresponded with the number in the previous week, and included 10 of infants under two years of age; 6 deaths from this cause occurred in Glasgow, and 2 both in Dundee and Leith. The deaths referred to diphtheria, which had been 14 and 9 in the two previous weeks, further declined to 6 last week, of which 4 were returned in Glasgow and 2 in Dundee. The 2 fatal cases of scarlet fever and the 2 deaths referred to enteric fever all occurred in Glasgow; the fatal cases of scarlet fever showed a further decline from the numbers in recent weeks. The deaths in the eight towns referred to diseases of the respiratory system, which had been 92, 98, and 130 in the three preceding weeks, declined again to 121 last week, but exceeded by 20 the number in the corresponding week of last year. The deaths resulting from different forms of violence in the eight towns declined to 15 last week, from 19 and 26 in the two previous weeks; and 161, or 30 per cent., of the deaths occurred in public institutions. The causes of 15, or 2·8 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent.

### HEALTH OF IRISH TOWNS.

In Dublin 238 births and 183 deaths were registered during the week ending Jan. 21st. The annual rate of mortality in the city, which had been equal to 21·5 and 21·4 per 1000 in the two preceding weeks, increased to 23 4 in the week under notice. During the first three weeks of the current quarter the annual death-rate in the city averaged 22·1 per 1000, whereas in London the mean death-rate during the same period did not exceed 15·5 per 1000. The 183 deaths from all causes in Dublin last week showed an increase of 16 upon the number in the previous week, and included 18 which were referred to the principal epidemic diseases, of which 6 resulted from whooping-cough, 5 from measles, 4 from diphtheria, and 3 (of infants aged under two years) from diarrhœa and enteritis, but not one from small-pox, scarlet fever, or enteric fever. The fatal cases of whooping-cough, measles, and diphtheria somewhat exceeded the numbers in the previous week. The deaths from all causes included 36 of infants under one year of age, and 43 of persons aged upwards of 65 years; 70, or 38 per cent., of the deaths were recorded in public institutions. The causes of 7, or 3 8 per cent., of the deaths in the city during the week were not certified either by a registered medical practitioner or by a coroner. In Belfast 233 births and 118 deaths were registered during last week. The 118 deaths in this city were equal to an annual rate of 15·4 per 1000, against 16·0 and 19·8 in the two preceding weeks. During the first three weeks of the current quarter the annual death-rate in Belfast averaged 17 1 per 1000, against 22·1 in Dublin during the same period. The 118 deaths from all causes in this city during last week showed a decline of 33 from the number in the previous week, and included 4 which were referred to the principal epidemic diseases, of which 1 each resulted from measles, scarlet fever, whooping-cough, and diphtheria; no fatal case of enteric fever, diarrhœa, or small-pox was registered. One death was referred to violence and 2 were registered on the information of the coroner; 27, or 23 per cent., of the deaths occurred in public institutions. The causes of all but one of the 118 deaths in the city last week were duly certified either by a registered medical practitioner or by the coroner.

### VITAL STATISTICS OF LONDON DURING DECEMBER, 1910.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·3 per 1000 of the population, estimated at 4,872,702 persons in the middle of last year. In the three preceding months the rates

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1910.

*(Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1910. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | |
| LONDON | 4,872,702 | — | 691 | 432 | — | 96 | — | 27 | 354 | 7 | 1607 | 4·3 | — | 322 | 6 | 56 | 55 | — | 18 | — | 75 | 532 | 1·4 | 5592 | 15·8 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington | 153,004 | — | 13 | 6 | — | 5 | — | — | 12 | — | 36 | 3·1 | — | 6 | — | 2 | 3 | — | — | — | 3 | 14 | 1·2 | 181 | 16·4 |
| Kensington | 184,635 | — | 10 | 17 | — | 2 | — | 1 | 13 | — | 43 | 3·0 | — | 18 | — | 2 | 4 | — | — | — | 3 | 27 | 1·9 | 235 | 17·9 |
| Hammersmith | 127,413 | — | 13 | 17 | — | 4 | — | 1 | 1 | — | 36 | 3·7 | — | 13 | — | 6 | 2 | — | 1 | — | 3 | 25 | 2·6 | 160 | 17·1 |
| Fulham | 181,282 | — | 30 | 11 | — | 1 | — | — | 5 | — | 47 | 3·4 | — | 8 | — | — | 1 | — | — | — | 2 | 11 | 0·8 | 156 | 11·7 |
| Chelsea | 75,457 | — | 6 | 3 | — | — | — | — | 2 | — | 11 | 1·9 | — | — | — | 1 | — | — | — | — | — | 1 | 0·2 | 91 | 16·3 |
| City of Westminster | 167,233 | — | 6 | 7 | — | 1 | — | 1 | 7 | — | 22 | 1·7 | — | 4 | — | 1 | 1 | — | — | — | — | 6 | 0·5 | 193 | 16·8 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone | 125,195 | — | 23 | 13 | — | — | — | 1 | 10 | — | 47 | 4·9 | — | 8 | — | — | — | — | — | — | 3 | 11 | 1·1 | 137 | 15·2 |
| Hampstead | 95,729 | — | 6 | 10 | — | 1 | — | — | 3 | — | 20 | 2·7 | — | 1 | — | 1 | 2 | — | 1 | — | 2 | 7 | 1·0 | 88 | 13·5 |
| St. Pancras | 237,792 | — | 29 | 17 | — | 7 | — | 4 | 18 | 1 | 76 | 4·2 | — | 17 | 1 | 5 | 2 | — | — | — | 4 | 29 | 1·6 | 279 | 16·0 |
| Islington | 353,356 | — | 57 | 47 | — | 3 | — | 2 | 21 | 1 | 131 | 4·8 | — | 55 | 1 | 4 | 6 | — | 2 | — | 5 | 73 | 2·7 | 429 | 16·4 |
| Stoke Newington | 54,838 | — | 6 | 3 | — | — | — | 2 | 8 | — | 19 | 4·5 | — | 3 | — | 1 | 1 | — | — | — | — | 5 | 1·2 | 52 | 12·9 |
| Hackney | 239,979 | — | 45 | 25 | — | 7 | — | — | 32 | 1 | 110 | 6·0 | — | 5 | — | 2 | 3 | — | 2 | — | 5 | 17 | 0·9 | 245 | 13·9 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn | 53,142 | — | 5 | 3 | — | 3 | — | — | 8 | — | 19 | 4·7 | — | 4 | — | — | — | — | 1 | — | 1 | 6 | 1·5 | 75 | 19·8 |
| Finsbury | 94,578 | — | 13 | 21 | — | — | — | 2 | 13 | — | 49 | 6·8 | — | 26 | — | 6 | 2 | — | — | — | 3 | 37 | 5·1 | 161 | 23·0 |
| City of London | 17,132 | — | 4 | — | — | — | — | 1 | 3 | — | 8 | 6·1 | — | — | — | — | — | — | — | — | — | — | — | 21 | 17·6 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch | 114,387 | — | 9 | 10 | — | 3 | — | — | 10 | 1 | 33 | 3·8 | — | 8 | — | 2 | 3 | — | — | — | 3 | 16 | 1·8 | 172 | 20·6 |
| Bethnal Green | 131,579 | — | 6 | 16 | — | 12 | — | — | 20 | — | 54 | 5·3 | — | 2 | — | 4 | 2 | — | 3 | — | 3 | 14 | 1·4 | 180 | 18·0 |
| Stepney | 314,379 | — | 42 | 32 | — | 6 | — | 2 | 42 | — | 124 | 5·1 | — | 14 | — | 3 | — | — | 1 | — | 6 | 24 | 1·0 | 348 | 15·0 |
| Poplar | 172,432 | — | 37 | 14 | — | 8 | — | 1 | 16 | — | 76 | 5·7 | — | 5 | 2 | 2 | 2 | — | — | — | 4 | 15 | 1·1 | 208 | 16·2 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark | 211,832 | — | 35 | 21 | — | 5 | — | — | 19 | — | 80 | 4·9 | — | 27 | — | 4 | 3 | — | 1 | — | 4 | 39 | 2·4 | 309 | 19·9 |
| Bermondsey | 127,238 | — | 23 | 17 | — | 1 | — | — | 11 | — | 52 | 5·3 | — | 22 | — | 1 | 3 | — | — | — | 2 | 28 | 2·9 | 188 | 19·8 |
| Lambeth | 327,074 | — | 46 | 23 | — | 5 | — | 3 | 16 | 1 | 94 | 3·7 | — | 26 | — | 4 | 6 | — | 3 | — | — | 39 | 1·6 | 355 | 14·6 |
| Battersea | 188,222 | — | 20 | 19 | — | 1 | — | 3 | 13 | — | 56 | 3·9 | — | 19 | — | — | 1 | — | — | — | 4 | 24 | 1·7 | 224 | 16·6 |
| Wandsworth | 305,838 | — | 42 | 25 | — | 5 | — | 1 | 16 | 2 | 91 | 3·9 | — | 8 | 1 | 2 | 4 | — | 1 | — | 2 | 18 | 0·8 | 305 | 13·7 |
| Camberwell | 286,058 | — | 53 | 21 | — | 10 | — | — | 13 | — | 97 | 4·4 | — | 18 | — | 1 | 3 | — | 2 | — | 5 | 29 | 1·3 | 287 | 13·6 |
| Deptford | 119,642 | — | 13 | 8 | — | — | — | — | 10 | — | 31 | 3·4 | — | 3 | — | — | — | — | — | — | 1 | 4 | 0·4 | 113 | 12·9 |
| Greenwich | 112,935 | — | 15 | 5 | — | 1 | — | 1 | 1 | — | 23 | 2·7 | — | — | 1 | 2 | — | — | — | — | 2 | 5 | 0·6 | 101 | 11·9 |
| Lewisham | 164,899 | — | 39 | 15 | — | 2 | — | 1 | 2 | — | 59 | 4·7 | — | — | — | — | 1 | — | — | — | 1 | 2 | 0·2 | 153 | 12·6 |
| Woolwich | 135,422 | — | 45 | 6 | — | 2 | — | — | 8 | — | 61 | 5·9 | — | 2 | — | — | — | — | — | — | 4 | 6 | 0·6 | 146 | 15·1 |
| Port of London | — | — | — | — | — | 1 | — | — | 1 | — | 2 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

were 5·3, 5·9, and 5·0 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, Chelsea, the City of Westminster, Hampstead, and Greenwich; and the highest rates in Hackney, Finsbury, the City of London, Bethnal Green, Stepney, Poplar, Bermondsey, and Woolwich. Scarlet fever again showed a declining prevalence last month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in St. Marylebone, Hackney, the City of London, Poplar, Bermondsey, Camberwell, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 1574 scarlet fever patients at the end of December, against 1825 and 1727 at the end of the two preceding months; the weekly admissions averaged 155, against 229, and 183 in the two preceding months. Diphtheria also was less prevalent than it had been in any of the three preceding months; this disease was proportionally most prevalent last month in Finsbury, Hammersmith, Islington, Bethnal Green, and Bermondsey. There were 827 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 852 and 866 at the end of the two preceding months; the weekly admissions averaged 95, against 120 and 106 in the two preceding months. The prevalence of enteric fever showed a slight decline from that recorded in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Paddington, Hammersmith, St. Pancras, Hackney, Holborn, Bethnal Green, Poplar, and Camberwell. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 169 and 134 at the end of the two preceding months, had declined to 88 at the end of last month; the weekly admissions averaged 11, against 25 and 16 in the two preceding months. Erysipelas was proportionally most prevalent in the City of London, Holborn, Finsbury, Bethnal Green, and Stepney. The 27 cases of puerperal fever notified during the month included 4 in St. Pancras, 3 in Lambeth, 3 in Battersea, and 2 each in Islington, Stoke Newington, Finsbury, and Stepney. The 7 cases of cerebro-spinal meningitis included 2 in Wandsworth, and 1 each in St. Pancras, Islington, Hackney, Shoreditch, and Lambeth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the populations. During the four weeks ending Dec. 31st the deaths of 5592 persons belonging to London were registered, equal to a corrected annual rate of 15·8 per 1000, the rates in the three preceding months having been 11·9, 12·6, and 17·4 respectively. The death-rates last month ranged from 11·7 in Fulham, 11·9 in Greenwich, 12·6 in Lewisham, and 12·9 in Stoke Newington and in Deptford, to 18·0 in Bethnal Green, 19·8 in Holborn and in Bermondsey, 19·9 in Southwark, 20·6 in Shoreditch, and 23·0 in Finsbury. The 5592 deaths from all causes included 532 which were attributed to the principal infectious diseases; of these, 322 resulted from measles, 6 from scarlet fever, 56 from diphtheria, 55 from whooping-cough, 18 from enteric fever, and 75 from diarrhœa. No death from any of these infectious diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, City of Westminster, Deptford, Greenwich, Lewisham, and Woolwich; and the highest rates in Hammersmith, Islington, Finsbury, Southwark, and Bermondsey. The 322 deaths from measles were 187 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Kensington, Hammersmith, Islington, Finsbury, Southwark, Bermondsey, Lambeth, and Battersea. The fatal cases of scarlet fever numbered 6 last month, the average number being 49; of these 6 deaths, 2 belonged to Poplar, and 1 each to St. Pancras, Islington, Wandsworth, and Greenwich. The 56 deaths from diphtheria were 8 fewer than the corrected average number; the greatest proportional mortality from this disease was recorded in Hammersmith, St. Pancras, Finsbury, Bethnal Green, and Southwark. The 55 fatal cases of whooping-cough showed a decline of 30 from the corrected average number; this disease was proportionally most fatal in Paddington, Kensington, Hampstead, Finsbury, Shoreditch, and Bermondsey. The 18 deaths from enteric fever were 2 below the average for the corresponding period of the five preceding years; these 18 deaths included 3 belonging to Bethnal Green, 3 to Lambeth, and 2 each to Islington, Hackney, and Camberwell. The 75 fatal cases of diarrhœa were 20 in excess of the corrected average number; this disease was proportionally most fatal in Hammersmith, St. Marylebone, Finsbury, Shoreditch, Poplar, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 30·9 per cent. above the average.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: E. H. Meaden to the *Orontes;* F. Fedarb to the *Hecla;* and N. L. Richards to the *Mars.* Staff-Surgeon: A. J. Hewitt to the *Blake.* Surgeon: A. S. Paterson to the *Jupiter*, additional.

### ROYAL ARMY MEDICAL CORPS.

Colonel S. C. B. Robinson, from Jubbulpore, has taken over duty as Principal Medical Officer of the First (Peshawar) Division. Lieutenant-Colonel R. R. H. Moore has been transferred from the Southern Command to the Irish Command and appointed Administrative Medical Officer at Belfast in succession to Lieutenant-Colonel E. J. R. Risk. Lieutenant-Colonel A. E. Tate, from Kasauli, has taken over command of the station hospital at Ambala Cantonment. Lieutenant-Colonel T. E. Noding, in charge of the Military Hospital at Cork, has been placed under orders for duty in the Southern Command, joining about March 1st next. Major J. H. Campbell, D.S.O., on arrival home from Mauritius, has been appointed to the London District. Major G. H. Goddard, from Alderney, has been posted to the Eastern Command and appointed medical officer in charge of the Military Families Hospital at Shorncliffe. Major W. W. O. Beveridge, D.S.O., on completion of the tenure of his appointment as medical officer in charge of the Royal Army Clothing Factory at Pimlico, has been appointed Specialist in Sanitation, London District, for duty in connexion with food inspection and analysis. Major W. J. Taylor, at present serving at Holywood, has been placed under orders to embark for service in Sierra Leone. Major G. A. T. Bray, from Southampton, has taken up duty at Maidstone. Captain W. D. C. Kelly has succeeded Captain J. W. West as Specialist in Advanced Operative Surgery, Dublin District, on the latter's departure for India. Captain J. W. Langstaff has been granted four weeks' leave of absence. Captain R. N. Hunt, from Borden, has been placed under orders for duty in Egypt. Captain H. W. Farebrother, from Malapuram, Madras Presidency, has taken up duty at Bangalore. Captain J. P. Lynch, on completion of a tour of service in India, has been posted to the Eastern Command. Captain E. J. Elliot, on return from Tientsin, North China, has been posted to the Northern Command. Captain P. J. Marett has arrived home on leave from Malta. Captain B. S. Bartlett, from Colchester, has been appointed to the station hospital at Multan for duty. Captain A. M. MacLaughlin, sanitary officer of the Scottish Command, has been appointed to officiate as Medical Inspector of Recruits during the absence on leave of Lieutenant-Colonel M. T. Yarr. Captain S. M. Adye-Curran and Captain J. G. Foster have embarked for a tour of service in India. Captain T. S. Coates has been transferred from Queenstown to Woolwich. Captain G. E. Cathcart, from Lancaster, has taken up duty at Warrington. Captain D. C. O'Grady has been appointed specialist in dermatology and venereal diseases to the Second (Rawalpindi) Division. Lieutenant J. B. Jones from Londonderry, has on arrival in India been posted to the station hospital at Lucknow. Lieutenant S. McK. Saunders, from Woolwich, has joined for duty at Cairo. Lieutenant W. W. Treves and Lieutenant R. F. Bridges have been posted to the Eastern Command. Lieutenant C. K. H. Harold has been appointed for duty in the London District from the Aldershot Command.

### INDIAN MEDICAL SERVICE.

Colonel F. C. Reeves has been appointed by the Commander-in-Chief in India to be Principal Medical Officer of the Secunderabad Brigade, in succession to Colonel H. St. Clair Carruthers, transferred to the Civil Medical Department. Lieutenant-Colonel E. W. Thurston, Bombay Presidency, has arrived home on leave. Lieutenant-Colonel F. J. Drury, Principal of the Medical College at Calcutta, has been deputed for special duty with the Principal Medical Officer of the Eighth (Lucknow) Division. Lieutenant-Colonel E. R. W. C. Carroll has taken up duty as Civil Surgeon at Lakhimpur, Eastern Bengal, in succession to Major A. Leventon, appointed civil surgeon at Darrang. Major W. D. Hayward, civil surgeon at Jaipajuri, has been appointed Medical Storekeeper to the Government of India, vice Lieutenant-Colonel E. Dobson. Major E. H. Sharman, on return from leave, has taken over duty as staff officer for Medical Mobilisation Stores Fourth (Quetta) Division from Lieutenant-Colonel C. M. C. Wimberly. Major S. Evans has been selected to officiate as Obstetric Physician to the Parsi Hospital at Bombay. Major M. Dick, civil surgeon, Burma, has been appointed to officiate as a First-class Civil Surgeon. The Governor of Bombay has appointed Major T. S. Novis to act as Professor of Anatomy and Curator of the Museum, Grant Medical College, Bombay, vice Captain L. P. Stephen, pending further orders. Captain S. B. Mehta, district plague medical officer, Lyallpur, has been transferred to Rohtak. The services of Captain R. A. Chambers have been replaced at the disposal of the Home Department of the Government of India. Captain G. Fowler, civil surgeon of Akola, has been appoined to the executive and medical charge of the Akola District Jail. Captain A. H. Proctor, Captain H. Falk, and Captain K. W. Mackenzie have embarked for India in the transport ss. *Rewa* from Southampton. Lieutenant L. H. L. Mackenzie has been attached as medical officer to the 72nd Punjabis at Dera Ismail Khan. Lieutenant A. C. Munro has taken over duty as Specialist in Ophthalmology to the Seventh (Meerut) Division.

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

3rd Northumbrian Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains: Lieutenant Oswald L. Appleton (dated August 9th, 1910). Lieutenant Percy R. Ash (dated August 19th, 1910).

*Attached to Units other than Medical Units.*—Captain John Paton resigns his commission (dated Jan. 21st, 1911).

### DEATHS IN THE SERVICES.

Colonel J. A. Cunningham, I.M.S. (on Dec. 31st, 1910), who was only recently appointed Inspector-General of Civil Hospitals in the Central Provinces. He was appointed surgeon in 1881 and lieutenant-colonel in 1901. Colonel Cunningham arrived at Calcutta from Nagpur on Dec. 24th for the Christmas holidays, and was seized with cholera two days later, the disease being probably contracted on the railway journey. He failed to rally, and his death occurred in the General Hospital at Calcutta. His personality had won for himself a wide circle of friends both in India and at home. Before his recent appointment he filled the important post of civil surgeon at Lahore, where his loss will also be deeply mourned.

### THE HEALTH OF THE ARMY.

At a meeting of the National Service League held at Hale, near Farnham, on Jan. 18th, Sir Thomas Gallwey, K.C.M.G., A.M.S., principal medical officer of the Aldershot Command, said that he had recently drawn up a report on the health of the army for 1910. The making of that report had forcibly impressed upon him the fact that the present excellent health, both physical and mental, was due to the physical training and discipline which had been introduced since the South African war. The British soldier of the present day was more intelligent and active and better in every way than in the old days. Last year the men admitted to hospital were only half in number in comparison with those admitted in the previous five years. The waste of the army also showed a striking decrease. This last year when he made up the returns he found a reduction of nearly two-thirds, the actual rate being 9 per 1000.

### THE ROYAL NAVY LIST.

Among the books of reference which have earned for themselves the title of indispensable a place must be found for the Royal Navy List, published by Messrs. Witherby and Co., the 113th quarterly volume of which has just been issued. The information given in this book concerning the Royal Navy and its *personnel*, both active and retired, and the ships of the fleet, is arranged in a manner at once concise and easy for immediate reference, while the current history of the Royal Navy, a summary of the commissions of ships, and a naval bibliography considerably enhance the value of the List. An addendum corrects the list of officers and their services up to the middle of January. The war and meritorious service section deals with the careers of over 14,500 officers, the information for the most part being contributed by the officers themselves. The publishers are to be congratulated upon the accuracy and arrangement of the book.

### ANNUAL REPORT OF THE SURGEON-GENERAL OF U.S. NAVY.

The annual reports of the Surgeons-General of the three Government services of the United States—the Army, the Navy, and the Marine Hospital Service—always teem with varied and interesting information, of value, partly substantive, partly for comparison, far beyond the confines of the Government to which they are rendered. The annual report of the Surgeon-General of the U.S. Navy for the fiscal year 1910 well repays perusal. The improvement that is taking place all the world over in the care bestowed on those who risk their lives and limbs in the service of their country, as well as in the attention devoted to keeping them in the most effective condition for the purpose for which they exist, is well mirrored therein. We note first a generally diminished damage ratio, as compared with that of the preceding year and of the average of the preceding ten years. The death-rate of 5 per 1000 is lower than has ever been previously recorded. Deaths from drowning appear to be too numerous, and call forth a suggestion that after enlistment, warrant, or commission each man shall be required to demonstrate his ability to swim a substantial distance and to keep his head above water for 15 minutes in the presence of a light breeze. The necessity for "study appointments" to naval hospitals and in civil communities is insisted on, and the encouragement of specialism along certain lines is justified. The establishment of assistant surgeons in the U.S. navy is still undermanned, this fact being attributed, in considerable part at least, to the pay of that rank being below that of officers of equal rank in other services. The difficulty that besets the amateurish system of keeping down the enrolled strength by relying on the power to fill up the establishment with civil practitioners in times of emergency—a practice with respect to Government medical services which a false economy renders tempting to politicians in countries other than the United States—is well illustrated by Surgeon-General Stokes, when he says that it seems to require a considerable number of years for officers to appreciate the fact that a medical officer's rightful duties are manifold, and that administrative, executive, and recruiting activities are quite as much functions of the medical corps as are those of the sick-room and the clinical laboratory. Much attention, apparently, is paid in the U.S. navy to venereal prophylaxis, and the dental work done is also considerable—matters the importance of which to an efficient *personnel* can hardly be denied. Stress is laid on the value of the services that can be rendered by the naval medical corps in times of national emergency other than warfare, and on the aid capable of being given by them to the elucidation of many problems in tropical medicine. Of the prominent hygienic problems of the service importance is attached to the increase in physical training, and the Surgeon-General recommends the adoption of the Swedish system as at present in use in the British navy. With regard to athletics, the conclusion is advanced, as a result of data obtained by both American and European authorities, that not only is participation in the customary athletic contests unnecessary for the development of the best physique, but that the average man, who is more rationally and evenly developed by conservative and recreative gymnastics, without the undue enlargement of the heart muscle that commonly follows specialism in football and rowing, will live longer and be more resistant to disease and will thereby be enabled to render better service. In view of the high admission rate from typhoid fever in the U.S. navy the experience of English, German, and American statistics is adduced in favour of as much typhoid preventive inoculation as can be

effected, at first without compulsion. The special diseases demanding watchfulness in the navy are divided for purposes of consideration into—(1) affections dependent on probable predisposition; (2) those dependent on environment of recruits; (3) those dependent on ship life; (4) those dependent on exotic exposure; and (5) those dependent on special conditions of service. In Group 1 are named hernia, hæmorrhoids and varicocele, astigmatism, enlarged tonsils, flat-foot, epilepsy, middle-ear disease, tuberculosis, potential insanity, incontinence of urine, and previous appendicitis; in Group 2, contagious diseases; in Group 3, epidemic catarrh, acute bronchitis, influenza, tonsillitis, mumps, diphtheria, cerebro-spinal meningitis, pulmonary tuberculosis, heat exhaustion, and thermic fever; in Group 4, typhoid, malaria, dysentery, and skin diseases, especially scabies; and in Group 5, various forms of mental derangement, appendicitis and peritonitis, acute and chronic nephritis, and various infectious and contagious diseases. Among the recommendations made are the establishment of a naval medical reserve corps, the adoption of a readily washable texture and colour for all service uniforms for officers and men, and the search in recruiting for histories of prior appendicitis, urinary incontinence, and a family history of nervous and mental disease. The services rendered by the improvised naval hospital ships *Relief* and *Solace* have, in the Surgeon-General's opinion, demonstrated their great usefulness in times of peace and their close relationship to preparedness for war. Specially built hospital ships, containing 500 beds each, and having oil burners, turbine engines, a cruising speed of the fastest battle-ship, and a wide steaming radius, are called for. Such ships should be commissioned in time of peace, not only to provide drill in organisation, equipment, provisioning, signals, &c., but, above all, clearly to establish a condition of unblemished neutrality according to the Geneva Convention. The Surgeon-General, when Surgeon Stokes, amply demonstrated in the case of the *Relief* the wisdom of vesting the command of such ships in the medical officer, with an expert navigator as his assistant, instead of subordinating the medical officer to a lay commander.

### THE INDIAN AMBULANCE GAZETTE.

The Indian branch of the St. John Ambulance Association, the excellence of whose work has received the cordial approval of Surgeon-General Lukis, the Director-General of the Indian Medical Service, has now its own official *Gazette*, the first number of which, dated January, 1911, now lies before us. It will be published quarterly, and it is hoped will be the means of facilitating the extension of the St. John Ambulance movement in India by serving as an instrument of communication between the various ambulance centres in that country. The first number, which is of quarto size and consists of 40 pages excellently printed, contains reports of meetings at various centres and much information of general interest with regard to ambulance work in other countries. We wish the venture every success.

### BRITISH RED CROSS NOTES.

Lord Cheylesmore presided on Jan. 20th at a meeting held at the Middlesex Guildhall for the purpose of starting a voluntary aid ambulance scheme in connexion with the Middlesex Territorial Force. A proposal to create 11 districts or sections in Middlesex, with centres at Uxbridge, Staines, Hornsey, Brentford, Finchley, Hampton, Harrow, Ealing, Edmonton, Willesden, and Enfield was adopted, and a general committee of the Middlesex County Section, Territorial Branch, St. John Ambulance Association, was formed.

The first annual meeting of the Essex branch of the British Red Cross Society was held in London at the Liverpool-street Hotel on Jan. 18th, when the Countess of Warwick presided. It was reported that 23 detachments had been formed in the county—namely, 15 for women and 8 for men.

A branch of the British Red Cross Society has been formed at Bristol and 253 members and associates have been enrolled.

### PERSONAL STAFF OF HIS EXCELLENCY THE VICEROY AND GOVERNOR GENERAL.

Major F. O'Kinealy, I.M.S., has been appointed Surgeon (dated Nov. 23rd, 1910).

### THE ROYAL VICTORIAN ORDER.

Captain E. S. Worthington, R.A.M.C., who accompanied H R H. the Duke of Connaught, K.P., in his recent tour to South Africa, has been appointed a Member of the Royal Victorian Order (Fourth Class).

### A STAFF TOUR FOR MEDICAL SERVICES.

Lieutenant-General Sir Horace Smith-Dorrien, K.C.B., D.S O., has issued instructions for the collective training to be carried out by the troops of the Aldershot Command during the coming training season. A staff tour for medical services is to be held in March, and divisional and brigade staff tours between the beginning of April and the middle of June.

# Correspondence.

"Audi alteram partem."

## CONTINUOUS INHALATION IN PULMONARY TUBERCULOSIS.

*To the Editor of* THE LANCET.

SIR,—Dr. Burney Yeo's paper in your issue of Jan. 7th inst., ought to have made an impression on all those who are on the look-out for practical methods of affording relief or effecting cures without criticising too closely the *rationale* of the means employed. It may be doubted whether a few drops of creasote under the nose give off sufficient antiseptic vapour to reach the bacilli carrying on their activity in the depths of the pulmonary tissue, and the too-rigid scientist may feel inclined to discard this simple and efficacious method of treatment. His half-hearted recommendation may therefore fail to overcome the fastidious patient's objections to the "nasty stuff." This would be most regrettable, as the method, whether it be the main factor or merely an adjuvant, has proved itself of the greatest value.

In many of the cases of tuberculosis under my sole care or referred to me by my colleagues I have for some time been prescribing it, and I must admit that at first I was actuated by the "ut aliquid fiat" principle. I found, however, that one patient after another obtained relief dating from the time of the continuous inhalation. To many of us the smell of creasote is unpleasant and to the other inhabitants of the dwelling it is often almost unbearable. I have therefore been endeavouring to find a combination which will be as little unpleasant and as much efficacious as possible. The following (dubbed "gutt. cinnam. co.") will be found to combine these qualifications to a considerable extent:—

℞ Creasoti, ʒii.
Ol. Pin. Sylvest., Spirit. Chloroformi, āā ʒiss.
Menthol, gr. x.
Ol. Cinnam., m.v.

The sponge in the respirator (Dr. Burney Yeo's) is kept moist with this mixture.

To most people this is by no means unpleasant, but a few have an intense dislike to the smell and flavour of cinnamon, and in their case oil of citronella may be substituted. The most conspicuous result is the extraordinary diminution of the cough, and apart from any antiseptic or bactericidal effect I consider this a very important factor in the production of the subjective as well as of the objective improvement observable in the larynx. There is probably nothing more disturbing and injurious to the larynx than frequent or continuous coughing, and nothing more certain to induce repeated "auto-inoculation" than the muscular strain which it involves. The "rest" induced by this simple remedy is therefore beyond all price, whatever its *modus operandi*, and I am sure that those who introduce it whole-heartedly into their practice will receive the thanks of many sufferers. It has none of the objections attaching to those remedies which paralyse the coughing-centre as it only checks the useless and not the useful coughs.

Several of my colleagues prescribe the continuous antiseptic inhalation with great frequency and apparently find i beneficial in tuberculosis of the lungs. I can answer for it,

however, in relation to the larynx and recommend it with the utmost confidence.

I am, Sir, yours faithfully,

Cavendish-square, W., Jan. 21st, 1911. DUNDAS GRANT.

*To the Editor of* THE LANCET.

SIR,—The medical profession is greatly indebted to Dr. Burney Yeo and other early pioneers like the late Dr. Sinclair Coghill of Ventnor for their persistent advocacy of continuous inhalation in pulmonary tuberculosis. It was about 20 years ago, while a student at King's College Hospital, when Dr. Yeo was a physician there, that my attention was called in one of his clinical lectures to his antiseptic vapour treatment in pulmonary consumption. Soon after being qualified I put into practice the inhalation treatment when called upon to treat some bad cases of consumption. Ever since I have been an enthusiastic advocate of this method of treatment in pulmonary tuberculosis. When I began the open-air treatment about 12 years ago the sanatorium presented many opportunities of carrying out the inhalation treatment more systematically and persistently. I made very many trials on the volatility of antiseptic drugs and on the efficiency of inhalers. I found that the success of introducing the inhalant into the small bronchial tubes and air-passages was proportionate to the degree of diffusibility of the antiseptic mixture used. I found also that an inhalant consisting of formaldehyde, menthol, pumiline pine, and chloroform with rectified spirit gave the most satisfactory results. Hence I use most commonly the following formula:—

℞ Formalin (40 per cent.), mxxx. (2½ per cent. strength).
Chloroform, ʒi.
Menthol, gr. xv.
Ol. Pin. Pumil., mxv.
Spt. Vin. Rect. ad ʒi.
Ten drops to be sprinkled every half hour.

N.B.—The formalin solution is made by conveying the formaldehyde into the rectified spirit solution, thus making the preparation more volatile.

After one or two weeks when formalin is more tolerated it can be increased to 5 per cent. Also creasote to the extent of 3 to 5 per cent. may be added to this mixture if desired.

As for an inhaler, I have devised one after the model of Dr. Yeo and Dr. Ruata of Perugia. My formaldehyde inhaler is made somewhat larger than Dr. Yeo's (and a little smaller than Dr. Ruata's), to take in more fully the nose and mouth, is more substantially made so as to bear the wear and tear of continuous use for many hours a day, is nickel-plated within and without to give smoothness and durability, and is curved to fit the chin. The inhaler is manufactured by Messrs. Oppenheimers, London.

In our sanatorium the beneficial effect of the inhalation treatment has been so marked and so uniform that during the last few years it has formed a part of the daily routine of the patients. In fact, my experience is that continuous inhalation, when combined with fresh-air treatment and manual exercise, gives better results than any other method of treatment that has been advocated so far by the medical profession. Consumptive patients are apt to get tired of carrying out the treatment at home after awhile unless they are very enthusiastic. The secret of success depends upon the persistent use of the inhaler for many hours a day with deep breathing, combined with open-air living and daily manual exercise. I warmly endorse Dr. Yeo's experience of inhalation treatment and would strongly advocate its administration both in an open-air sanatorium and outside.

I am, Sir, yours faithfully,

C. MUTHU.

Mendip Hills Sanatorium, Wells, Jan. 9th, 1911.

## TUBERCULOSIS AND STATE INTERVENTION.

*To the Editor of* THE LANCET.

SIR,—In your issue of Jan. 21st, the joint honorary secretaries of the Conference on Tuberculosis, recently held at Edinburgh, charge us with making ambiguous and misleading references, in the preface of the second edition of the "Conquest of Consumption," to what took place at the Conference. They give the actual terms of the resolution to which we referred. It was as follows:—

That the special attention of the Chancellor of the Exchequer, Government, and Parliament be called to the great importance of giving the prevention and treatment of tuberculosis a prominent place in the proposed scheme of invalid insurance.

A conference of experts considers the question of the working man in relation to tuberculosis. It decides to ask the Government to consider the *great importance* of dealing in a *prominent* manner with not only the prevention but the treatment of tuberculosis in a State insurance scheme. When we draw the deduction that the Conference could not have decided to take such a step without meaning that some form of State intervention in regard to tuberculosis is necessary, we are accused of saying what is not the fact. For some reason the joint honorary secretaries contented themselves in their letter with a portion of a sentence from our preface. What we wrote was as follows:—

The representative Conference held in Edinburgh, in connection with the annual meeting of the National Association for the Prevention of Consumption, in July, 1910, although divided as to the form which State intervention should take, was practically unanimous in the opinion that some form of such intervention was necessary, and the proposition was supported by leading administrative officers in some of the largest cities in the Kingdom.

Is this comment either ambiguous or misleading? If so, then the Special Sanitary Commissioner of THE LANCET was also in error in his account (July 9th, 1910, p. 120) of the debate on this question at the Conference. He wrote:—

The Conference was unanimous as to the issue, the only difference being whether the desired legislation should be part of a general scheme or a law dealing only with tuberculosis.

We are, Sir, yours faithfully,

ARTHUR LATHAM.

Portland-place, W., Jan. 24th, 1911. CHAS. H. GARLAND.

## RESEARCH DEFENCE SOCIETY.

*To the Editor of* THE LANCET.

SIR,—As it is just three years since the Research Defence Society was formed (Jan. 27th, 1908), we hope that you will kindly find room for a short account of its work during the past year. The number of members, which was about 2800 a year ago, is now 3770; and the number of associates, which was 130, is now 230. Six new branch societies have been formed, making 19 in all. Since January last the following have consented to be Vice-Presidents of the society: The Bishop of St. Asaph, Miss Balfour, Sir George Beatson, Dr. M. G. Biggs, Sir John Carrington, Lord Hugh Cecil, the Bishop of Chichester, the Earl of Durham, the Bishop of Ely, Sir David Gill, Sir Archibald Hepburn, Lord Kenyon, Professor Leith, the Duke of Norfolk, the Bishop of Nyasaland, Mrs. Henry Sidgwick, the Bishop of Stepney, and Archdeacon Watkins.

Since January last the following pamphlets and leaflets have been published by the society:—(1) "Pasteur, Science, and Medicine"; (2) "The Nation and the Tropics"; (3) "Plague in India, Past and Present"; (4) "The Helpfulness of Physiological Experiments to the General Practitioner"; (5) "Report of Annual General Meeting"; (6) "Diphtheria and Antitoxin"; (7) "Inoculations"; (8) "Experiments during 1909"; (9) "Charges of Cruelty against the Rockefeller Institute"; (10) "Fighting the Invisible"; (11) What the Doctor Says"; (12) "The National Welfare"; (13) "The Brown Dog"; (14) "A Question of Religion"; (15) "The Research Defence Society"; (16) "Sleeping Sickness": (17) "Malta Fever"; (18) "Experiments on Dogs"; (19) "In Memoriam, Louis Pasteur"; (20) "Humanity and Science"; (21) "Friends of Animals."

There has been a very great increase, during the past year, in the quantity of pamphlets and leaflets distributed, and in the number of addresses and popular lectures and lantern lectures given by members of the society in all parts of the country. Many debates also have been attended, in London or elsewhere, by the society's representatives with excellent results. We are constantly finding that the great majority of the audience on these occasions, after hearing both sides, is strongly in favour of the views of our society. A large quantity of our publications has been distributed among public libraries and similar institutes; a large quantity also is sold in the ordinary way of publication. During the past few months the society has been represented by stalls held at the following exhibitions: the Church Congress, the annual meeting of the British Medical Association, the Kennel Club Show, and the Birmingham Dog Show.

The Research Defence Society has nothing to do with the actual making of experiments on animals, nor with the administration of the Act; nor does it desire to see the

abolition of restrictions on experiments on animals in this country. It keeps itself to the work for which it was formed three years ago—that is, to make generally known the facts as to experiments on animals in this country and the regulations under which they are conducted; the immense importance of such experiments to the welfare of mankind; and the great saving of human and animal life and health which is already due to them.

We hope that many of your readers will become members or associates of the society, and will help to extend its educational work.—We remain, Sir, yours faithfully,

CROMER,
President.
SYDNEY HOLLAND,
Chairman of Committee.
F. M. SANDWITH,
Honorary Treasurer.
STEPHEN PAGET,
Honorary Secretary.

21, Ladbroke-square, London, W., Jan. 25th, 1911.

## REBATES ON PETROL TAX FOR MEDICAL MEN.

*To the Editor of* THE LANCET.

SIR,—Everyone who has had extended experience of recovering rebates on petrol duty will sympathise sincerely with the complaint of Dr. J. S. MacDonagh in your issue of Jan. 14th. The difficulty appears to be that his retailer could not produce the certificates which, had it been duty paid spirit he sold, he should have been in possession of, or could easily have procured. In all such cases the retailer himself is liable to refund the amount he has charged for duty, and he in turn will readily obtain the same from the original vendor. Very large stocks of spirit were already in the country when the duty first became operative, and the difficulty experienced in sorting deliveries into duty-paid and unpaid was great. This state of affairs has now ceased to exist and the system is worked by the Excise officers most admirably. Indeed, of late it has been marvellous to see how speedily and satisfactorily claims under such a complicated and absurd tax are dealt with.

In view of the dates mentioned in Dr. R W. C. Pierce's letter, may I remind all your readers that claims *must* now be made before the expiry of six months from the date of purchase?—I am, Sir, yours faithfully,

J. EDWARD DAVIES,
Honorary secretary, the Motor Cab Owner-Drivers Association.

Willow-walk, Highgate-road, N.W., Jan. 18th, 1911.

## THE NOMENCLATURE OF THE SUPRARENAL PRINCIPLE.

*To the Editor of* THE LANCET.

SIR,—As in the issue of THE LANCET for Jan. 7th, p. 73, you allude to the use of the word "adrenine" as a synonym for "adrenalin" and question its accuracy, as it occurs in a note in the "Year Book of Pharmacy," 1910, p. 177, dealing with an abstract appearing in THE LANCET of Oct. 2nd, 1909, of a paper by Mr. J. L. Jona, published in Australia, on "Adrenalin as an Emergency Treatment in Cases of Non-corrosive Poisoning," perhaps you will allow me to endeavour to justify its use on the following grounds.

In his original patent (1901, No. 1467) Jokichi Takamine expressly states that "this is an invention to procure the active principle of suprarenal glands ..... named adrenalin or *adrenin* (the italics are mine) in a pure condition." In view of the number of diverse trade names applied to what is, or should be, a definite chemical substance of an alkaloidal nature, the committee of publication of the "British Pharmaceutical Codex" have adopted Takamine's alternative synonym, with the addition of "e" to denote its basic nature, and have used the word "adrenine" in this sense. As tending to lessen confusion and to increase accuracy I have in the "Year Book of Pharmacy" adhered to this nomenclature. The necessity for the adoption of this common denominator is well illustrated in the case of two abstracts appearing in the current issue of the *Journal de Pharmacie et de Chimie*, 1911, vol. iii., pp. 78, 79. Here the word "suprarenine" is used in the first article by O. Gros, and "adrenaline" in the second by A. Lawen, although the latter paper is complementary to the former, and both authors evidently allude to the same substance. If these papers are abstracted in the "Year Book of Pharmacy" it will certainly be under the title "adrenine."

The inference in your note that the word "adrenalin" is a proprietary word is hardly tenable. It is stated by T. Maben, in a paper on "Adrenalin, the Active Principle of Suprarenal Gland" (*Pharmaceutical Journal*, 1907, vol. lxxviii., pp. 388–390) that "adrenalin is not a registered trade-mark nor a fancy name. It is a truly descriptive word, meaning the active principle of the adrenal structure ..... while the manufacturers ..... claim no proprietary rights over the name." Therefore, the injustice done to a "preparation" by the use of one or other of Takamine's synonyms is not very apparent. The injustice, if any, arises entirely from the loose manner in which trade names and proprietary euphemisms are applied to these newer remedies. This has caused them as a class to fall into disrepute, and has reflected hardly on the few more valuable therapeutic articles among them.

The "belief" expressed in your note that the word adrenine has been submitted to, and rejected by, the General Medical Council is groundless. That body has never considered the question. But had it done so that would have proved very little. It is evident, therefore, that most of the grounds on which your note appears to be based can hardly be considered accurate.

Moreover, it is no function of the "Year Book of Pharmacy" in its abstracts to advertise either "preparations" or persons. These abstracts are intended solely to record scientific facts or practical details of use to pharmacists in their calling, or to those who are interested in the subjects with which they deal.

I am, Sir, yours faithfully,

J. O. BRAITHWAITE,
Editor of the "Year Book of Pharmacy."

Chingford, Jan. 18th, 1911.

## INOPERABLE CANCER.

*To the Editor of* THE LANCET.

SIR,—I was much interested to see from a letter in THE LANCET of Jan. 14th from Dr. Alexander Haig, asking that inoperable cases of cancer might be sent to him, that he has met with the same difficulty as others in obtaining such cases for the purpose of testing a theory or new form of treatment. As I have been on the outlook for such cases for a number of years I can heartily sympathise with Dr. Haig, and at the same time can, I think, point out how the difficulty arises. It is in this way—we have been brought up to believe that a case of cancer beyond the operative stage must of necessity die, with the very rarest exceptions, and where such a case is met with the doctor naturally says incurable, and that is practically the end of it. One has this feeling one's self, for when a case is, or at least appears to be, cured, one begins to have doubts of the diagnosis and to wonder if, after all, the patient ever had malignant disease.

Another reason is that it has become the fashion to say that we must know the cause before we can expect to find a cure, though this is against all medical history. We require to persuade medical men to send at least their poor inoperable cases to anyone who is working on new and what he believes to be hopeful lines, and not stick to the old groove of "try nothing." I am, Sir, yours faithfully,

Upper Berkeley-street, W., Jan. 19th, 1911. SKENE KEITH.

## THE INFLUENCE OF TOBACCO ON DIGESTION.

*To the Editor of* THE LANCET.

SIR,—THE LANCET in an annotation in its issue of Dec. 31st, 1910, gave its readers interesting information anent the dangers of tobacco smoking to sufferers from hyperacidosis; and I agree with much that you stated. I think, however, that there are one or two other contributory causes of this syndrome than those mentioned, which, with your permission, I shall here point out. My experience as a pipe-smoker, which extends over half a century, during much of which time I have also had occasional attacks of hyperacidosis, confirms my belief that these contributory causes

are mainly three: first, constipation; secondly, nervous excitement, such as may be caused by reading after a full meal an interesting novel, or maybe a somewhat controversial article in THE LANCET; and thirdly, as a result and meanwhile, the rapid suction of the pipe's mouth-piece. This quick puffing of the smouldering pipe is in my opinion the real cause of the trouble. It is well known that any action which promotes the flow of saliva will probably stimulate the peptic glands also. In my own case the rapid suction of an empty pipe, if other symptoms are favourable, will bring about these untoward results as readily as will one too tightly packed with alien tobacco from a friend's pouch (I am partly Scot by descent). Briefly, I may sum up my experience of this slow (very slow) poison in the following doggerel:—

Learn to smoke slowly. No pipes that draw
Will injure your over-acid maw;
'Tis violent suction starts the bane
Bequeathed to smokers as gastric pain!

I am, Sir, yours faithfully,

Hove, Jan. 14th, 1911. W. A. H.

# THE HOUSING PROBLEM IN SOUTH WALES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Continued from p. 194.*)

### *A Bad Slum on a Choice Site.*

OF the various slums for which Merthyr Tydfil has acquired an unenviable reputation perhaps Company-row is the most notorious. This may be due to the fact that it was specially denounced in Dr. J. Spencer Low's report to the Local Government Board or because it is on the main road between Merthyr and Dowlais and is easily found. The sanitary authorities, however, seemed inclined to challenge the claim made that Company-row was the worst place, so that its inhabitants are even denied the melancholy privilege of being the most to be pitied. In fairness I must say that on visiting the place it soon became evident that the tenants remaining in Company-row were enjoying a far more liberal share of open space and invigorating mountain air than generally befall the lot of the submerged in large industrial communities. Facing this row of one-storey cottages is a wide open space that only needs to be paved and kept tidy. The soil has been converted into black mud consisting of a mixture of soot and coal dust—not unhealthy substances in themselves as part of the soil, but they help to make the people and surroundings look dirty and grimy. A few flagstones were placed in front of the cottages and here also were gullies leading to drains for the slop water. These slop drains in front of the cottages were ventilated, and so were the closet drains, which are all at the back of the cottages. When I entered one of the cottages it seemed very miserable. There was no wooden or even tile flooring, but flagstones such as are used for a street causeway. This must be very cold in winter. Fortunately, coals are cheap, and in all the houses, however poor, I noticed there was a bright, glowing fire. These cottages are dirty, overcrowded, and miserable; but with a glorious look-out at the back. There were no houses blocking out light and air. A deep descent to a mountain torrent rendered building operations difficult. Thus a wide space is kept open, and the waters, as they rush along below, help to stir and cool the air, so that for hot, sultry, summer days this spot might be made the site of pleasant residences. It is true that the steep hill on the other side of the torrent could be sneeringly described as a sham mountain, for it was not made by nature, but is one of the numerous "tip" hills that arise as the result of tipping the refuse from the mines and foundries. There is, however, nothing unwholesome about these modern and manufactured mountains, though it must be confessed that the grass which strives to grow upon them looks very yellow and unhealthy.

### *German Slum Children: a Contrast.*

With this splendid expanse of valley, hills, and uninhabited country at the back, and a wide open space in front, with both slop and soil drains situated outside the cottage walls, and no soil pipes under the cottages, it has rarely been my lot to visit slum property so fortunately situated. When I recalled the sight of the children in, for instance, the cholera districts of Hamburg, living in courts so narrow that it is possible to shake hands with the person looking out of the window opposite, and where the houses were at least five storeys high, I could not but think that these Welsh children were to be envied their air-supply. But when I examined the children themselves and saw that evidently there was no housewife to look after them, that there was no one to wash them, or brush them, or mend their clothes, then it was the children of the cholera slums of Hamburg that were to be envied.[1] Indeed, what I said of the slum-dwellers in Hamburg is the one great lesson that has to be conveyed to the British poor, not only in South Wales, but in many other parts of the country. In visiting three years ago one of the worst cholera slums of Hamburg which were still intact I said, speaking of its poor inhabitants:—

> On them at least the lessons of the great cholera epidemic have not been lost. They have learnt that cleanliness and plenty of air were the best of preventives. My photographs testify by the numbers of windows that are open how these poor people are striving to make the most of what little air is able to penetrate the narrow courts in which they are compelled to dwell. As for the cleanliness, the best evidence was the appearance of the children. Some looked poor and pinched and anæmic, but out of some hundred or more children whom we saw and carefully observed in these courts not one was untidy or dirty. Their clothes might be made of poor materials, they might be patched or darned, but not in one instance were they torn or disorderly. As for the little girls, it was simply beautiful to note how carefully their hair had been combed, brushed, and dressed, and clustered round their clean and well-washed faces. Yet these were the slum children of Hamburg, bred and born in those very slums, unaltered and even still more overcrowded, where the inhabitants had been decimated by the terrible cholera epidemic of 1892. M. Rey, like myself, was deeply impressed, and he kept saying, "See, see, what a brave fight they are making for existence even here, where everything is against them." If in spite of the continued existence of such slums and of the neglect of the interest of the poor, the death-rate of Hamburg is falling and there has not been another great epidemic, the honour is due to the Hamburg housewife. By keeping her children clean she has proved herself the most practical of all the sanitary reformers.

At Merthyr the verdict must be the exact opposite. If the death-rate is falling, this is due to administrative measures rather than to any special care or concern displayed by the poorer class of housewives. Instead of making a brave fight for existence the poor here fall into a state of general apathy; they no longer care how dirty and ill-kept their homes become. Cottages that might be quite pleasant habitations become dilapidated, dirty, and overcrowded. The inhabitants rarely wash and never mend their clothes. They have no pride, the women are slatterns, there seems no discipline at home, and the pressure exercised by the medical examination of the children at school is not yet sufficient to keep them clean and tidy. It would appear as if no one cared, neither the parents, the children, nor the community at large. No one seems ashamed. Amidst picturesque scenery and hills, where there is the purest mountain air and all that is required to make life beautiful and exceptionally healthy, a hideous town has been built and a large mixed population allowed to gather together without any thought of the degradation likely to ensue, for at first there were no regulations, no restraints, and no educational influences of a practical nature. While the main streets were built without any plan leading to architectural developments and harmonious combinations, the slum dwellings erected immediately behind them were constructed in defiance of laws of health or decency. Thus a beautiful country has been rendered hideous and unhealthy. The very hills that should contribute most effectively to the beauty of the district and to the health of its inhabitants have been disfigured by squalid people, living in ugly and unwholesome dwellings. Everyone knows that by building on the hillsides rows of houses one above the other the direct rays of the sun can reach and purify each house. In the same way the passing winds help to destroy and carry off all impurities. The difficulty of building healthy houses in the great centres of population is due to the impossibility of securing sufficient open space around them. But here, on these Welsh mountains, the houses can be built one above the other, and thus cannot cast each other in the shade. Will it be believed that, instead of profiting to the full from this inestimable advantage and securing for every house all the air possible, both back and front, holes have been dug into the mountain side and semi-cave dwellings artificially created?

### *The "Over and Under" Houses.*

These "over and under" houses constitute the special grievance of South Wales. Company-row is an example of

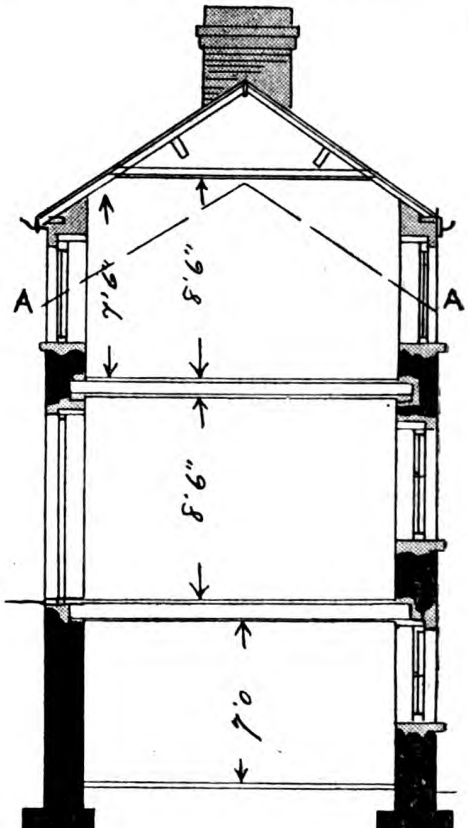
[1] See THE LANCET, Dec. 14th, 1907, p. 1728.

this abomination. The house that is "over" is fortunate, because it rests on another house, and therefore on a dry foundation, and it has open space both back and front. But the "under" house has no back space at all. The back is close upon the mountain side. The wall of the back room is built up against the bare earth, and, of course, the damp comes through. In some cases these "under" houses are of two storeys. Here and there an attempt has been made to separate the backs from the mountain side by cutting a trench down and making a sort of area a few feet wide and two storeys deep. This certainly does mitigate the dampness, but it provides very little air and no light whatsoever. Just below and at the back of Company-row is an old road on which the "under" dwellings give. It is an historical road, for here it was that Trevethick, the precursor of Stephenson, drove his traction engine. This primitive locomotive was provided with a brick-built chimney or funnel. Trevethick had a wager that he would draw a load of ore along at the rate of eight miles an hour. This he did easily, but the shaking was too much for the chimney and it fell clattering on the road which passes under the cottages of Company-row. The spot should be the pride of the town, and here some of the worst slums have been allowed to come into existence. But these are the sins of days gone by. Nothing of the sort could be done now. There are severe by-laws governing the construction of new dwellings. The difficulty is to efface the ugly traces left of the ignorance and indifference of past generations. This work of obliteration and reconstruction never seems to proceed fast enough. In any case, Company-row has been dealt with in a most summary and radical fashion. All the "under" houses are closed. Strong planks are nailed over the doors and windows. There is no admission possible, not a soul is living in them. Indeed, it is only necessary to look down the long list annually published of houses condemned to see that it is these "over and under" dwellings which are the most energetically attacked. Yet there are still some remaining if only to bear witness to the abominations that prevailed in the past. This is notably the case at Merthyr Vale where some of the under houses are two storeys high. Viewed from below, these houses appear four storeys high. But while the two lower floors are fronts of houses, the two upper floors are backs of houses which have their frontages and entrances on a street behind and on a higher level. In many cases where such dwellings have not been altogether abolished, the lower portions have been condemned, at least as sleeping apartments, a staircase to the upper portion built, and the two separate houses thus connected. The accompanying drawing of a section illustrates such a transformation. The A line indicates where the roof used to be; but now the walls have been raised and new and better roofs put on, so that, instead of sleeping in a low garret, the inhabitants have a fairly lofty bedroom with a ceiling and thorough ventilation. The thick, black vertical line to the left shows the level of the earth on the higher road. To the right at the lower level is the lower road, where are one-roomed tenements only seven feet high built with their backs to the earth of the mountain side. These as separate tenements and dwellings have been abolished altogether and converted into sculleries, washhouses, cellars, or lumber rooms for the house above.

*A By-law Enforcing Cleanliness.*

There were also a large number of back-to-back houses, and these have been dealt with in many cases by cutting through the partition walls and throwing two houses into one. By thus making two houses into one not only can a through draught be established, but in several cases the number of inhabitants became sufficient to enable the authorities to register the dwelling as a house let in lodgings. It then comes under a very useful and stringent by-law enacted on Oct. 21st, 1907. This must not be confused with the old Common Lodging Houses Act of 1851. The new by-law applies to private lodgings in private houses where the rent is under 5*s.* a week for unfurnished and under 7*s.* 6*d.* a week for furnished lodgings. Then it stipulates that each adult shall have 400 cubic feet of space and each child under 12 years 200 cubic feet. The sexes are to be separated. The sanitary inspectors have the right of entry both day and night. There must be one closet for every 12 inhabitants. The whole of the premises must be kept thoroughly clean. All the floors must be swept every day and scrubbed every week. All slops and refuse must be removed from within the house every day. All the windows must be fully opened for at least one hour every morning and every afternoon. Immediate notice of any illness has to be given to the authorities. It will be admitted that to bring some of the worst property and the most careless and dirty of the inhabitants of Merthyr under such a law as this is no slight achievement.

In spite of all these efforts much remains to be done, and there are yet many deplorable places to be seen. Some are closed up like Crystal Palace-court and other and smaller courts, all neighbours of Company-row. Others are condemned but not yet vacated. Some of these houses have been allowed to fall into a very dilapidated condition. Of 300 to 350 little cottage houses at Old Dowlais, about 135 are inhabited by two or more families, and yet these houses have rarely more than four rooms. There




An "under and over" house transformed. The thick black line is the portion of the wall touching the mountain side against which the "under" house is built. This is a one room tenement giving on to a road to the right. The "over" house gives on a road to the left and at a higher level. The line A A indicates the roof of the former garret bedroom.

is here one celebrated slum named, perhaps out of a spirit of derision, Garden-row. It consists of a row of little yellow-coloured cottages with no backs, and in front the upper windows are about 23 by 19 inches. In many cases there is no ceiling upstairs. The beds are under the bare rickety tile roof. The rafters are rotten, the rain passes through easily, and the whole structure threatens to fall in. The chimney stacks are also a menace; they have completely lost their original shape as so many bricks have been detached and blown off. One of the upper rooms which I visited measured 3 feet 6 inches in height by the eaves and 7 feet at the apex. Naturally, there was no ceiling. The windows for the bed-rooms thus situated were 18 inches square, including the framework; the actual opening for the passage of air was only 16 by 14 inches. There is also in this district a terrible little

court off Wild-street which abuts against a high building that very effectually helps to keep out the air. Here are old back-to-back houses where doors have been cut through the partition walls, but as the doors are generally, and carefully, closed the houses become in effect back-to-back houses once more. Some of these, though back-to-back houses, have in front of them only very narrow and dark courts. Naturally, this greatly accentuates the evil. Finally, such doors and windows as exist are very small. In Garden-row, in Tissington-court, and other thoroughfares and courts of this neighbourhood several houses have been closed altogether, but many more remain which do not deserve better treatment.

*(To be continued.)*

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *The Health of the City.*

IN the quarterly report to the health committee the medical officer of health, Dr. J. Robertson, gives a brief summary of the statistics for last year. The figures are subject to revision, but accepting them as approximately accurate I find that the death-rate for 1910 was the lowest on record, 13·7, as compared with 15·5 in 1909. The zymotic rate is also the lowest recorded, 1·1, 1907 coming next with 1·8. The infant mortality, 130 per 1000 births, was again a satisfactory record and an improvement upon 1909 with 135. Phthisis is steadily upon the decline, the death-rate from this disease being 1·15 last year. The cases of typhoid fever notified were also fewer than ever before—73. The birth-rate last year was 26·2, smaller than in any previous year.

### *Midland Counties Home for Incurables.*

The annual report of the committee of the above home stated that the receipts for 1910 were £7513, compared with £7663 in 1909. Subscriptions were £46 less, donations £103 less, and patients' payments had fallen from £3019 to £2949. This last decrease was due to the fact that the committee had felt able during the year to create four additional free beds, and to reduce the charges for the partially paying patients when temporarily absent from the home. Every additional privilege of this nature made a fresh demand upon the income derived from endowments, subscriptions, and donations, and it was therefore regrettable that these should have diminished. To help in obtaining fresh sources of income, the committee was trying to obtain the services of honorary local correspondents in the various districts served by the home. During the year £3000 had been added to the invested funds.

### *Gas Lighting in Relation to Public Health and Smoke Abatement.*

At a meeting of the Midland Association of Local Government Officers, Mr. R. J. Rogers, lighting superintendent of the Birmingham Gas Department, read a paper on the Use of Gas in Relation to Public Health, with special reference to Smoke Abatement. Mr. Rogers said that with regard to the ventilation of a room, not only was the use of gas economical, but it was hygienically superior to any other system of artificial illumination. The advocates of electric light contended that electric light was superior to gas because it did not consume or vitiate the air, that it created no heat, and did not damage decorations. He quoted opinions of authorities in support of his argument that the use of gas-lighting of high candle-power had been proved to be conducive to a healthy atmosphere and to the well-being of the public who frequented the rooms in which it was used. Theatres and music-halls were generally provided with a large central sun-burner fitted with flat-flame gas-burners. The primary use of this sun-burner was for ventilation, but with the more general use of electric lighting in theatres these sun-burners had been more or less neglected, and were not sufficiently used considering their very efficient action in drawing the vitiated air out of the theatre. With regard to smoke abatement, Mr. Rogers said much had been achieved, but it was necessary for the interest of the citizens generally to be aroused. The Birmingham town-hall and council house showed unmistakeable signs of the disintegration caused by smoke. The gas-engine had done much to lessen the amount of factory smoke. London, Glasgow, Sheffield, Leeds, Manchester, and other industrial centres had their own smoke abatement societies, but in Birmingham there was no such society, and he urged the formation of one.

Jan. 24th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

### *Liverpool School of Tropical Medicine: Expedition against Sleeping Sickness.*

ON Jan. 19th at the Adelphi Hotel, Mr. W. H. Lever (the chairman of the school) entertained at dinner a large gathering of gentlemen interested in the work of the School of Tropical Medicine, or connected by business ties with those tropical regions in which the good results of that work have already been seen, in order to bid *bon voyage* to Professor J. L. Todd, Dr. Wolbach, and Mr. Ernest D. Todd, who proceeded to Gambia and Senegal on Jan. 21st to investigate sleeping sickness. The chairman was supported by Professor Todd, Dr. Wolbach, Mr. Ernest Todd, Sir Owen Phillips, K.C.M.G. (Vice-President of the school), Sir William Bowring, Bart., Sir Edward Russell, Sir Alfred Haslam, Professor Sir Rubert W. Boyce (dean of the school), Professor Ronald Ross, C.B., Professor H. E. Annett, and others. The loyal toasts having been duly honoured, the chairman proposed "Our Founder of Revered Memory," and asked the company to turn down their glasses in remembrance of Sir Alfred Jones. The toast was acknowledged in solemn silence. The chairman then submitted the toast of "The Twenty-seventh Expedition of the Liverpool School of Tropical Medicine," and said that they had every reason to feel proud of what the Liverpool School had done in regard to tropical disease. The present King of the Belgians took a great interest in the movement and recognised its paramount importance. The school was greatly encouraged and stimulated by the progress it had made, despite the fact that the Government had rather turned its back on them. It would interest them to know that the Liverpool School had raised nearly £100,000 for the investigation of tropical disease. But the Government had been lax in dealing with those diseases. It was necessary that something should be done if we were to retain our tropical possessions. Many of these at present were the happy hunting ground of the mosquito and other pests of tropical life. They advocated such measures being taken as would not only prevent epidemics breaking out, but make the tropics the healthiest part of the world. Well, he believed that they were gradually doing it. The methods by which the Government approached this subject did not commend itself to any who gave scientific attention to this matter. The Liverpool School was advocating measures to prevent disease and to make the tropics habitable for the white man. It was a greater thing for the governor of a tropical state to look after the cleanliness of the town in which he was stationed than to lead a punitive expedition to butcher niggers in the bush. Professor Todd, in reply, said that the study of tropical medicine was not only important to Great Britain but to the world. They should endeavour through the press to stimulate public opinion and keep alive interest in the great work that was being done. Dr. Wolbach also replied, and said that he desired to pay a tribute from Harvard University as to the work the school was doing in the way of tropical research. His university recognised that there was no better school than that of Liverpool. The aim of the present expedition was either to verify or disprove the at present accepted theory with regard to sleeping sickness. Sir Edward Russell proposed the toast of "Commerce and Medical Science," which was replied to by Sir Owen Phillips, Sir Rubert Boyce, and Professor Ronald Ross.

### *The Medical Society of Liverpool.*

At the annual meeting of the Liverpool Medical Institution held on Jan. 19th Dr. T. R. Bradshaw, the President, moved on behalf of the council, the following resolution:—

That the name "The Liverpool Medical Institution" be changed to "The Medical Society of Liverpool."

The necessary two-thirds majority of those present and voting having been secured, the motion was carried. Professor C. S. Sherrington, F.R.S., was elected a vice-president of the society.

*New Accident Hospital at Garston.*

The finance committee of the city council has had under consideration the advisability of giving financial aid towards the erection of a hospital at Garston, the most southern district of the municipality. A special subcommittee has made a report to the effect that an offer be made, without admitting liability, to the committee of the proposed accident and emergency hospital at Garston and district to contribute £5000 towards the erection of this hospital. The original proposal of the finance committee was to grant a sum of £4000, but by the casting vote of the chairman the increased amount of £5000 was carried.

Jan. 24th.

## WALES.

(FROM OUR OWN CORRESPONDENT.)

*Cardiff Water-supply.*

THE heavy rainfall of last year has increased the amount of water in the Cardiff reservoirs very considerably. The average rainfall for the past 26 years on the gathering grounds which serve the Brecknockshire reservoirs was 79 inches, and in 1910 it was 92 inches. The amount of water now in store in the corporation reservoirs is equal to about five months consumption, based upon an average per head daily of 27 gallons. In spite of this satisfactory condition and in view of the anticipated growth of the borough the corporation has begun the construction of the third and last reservoir in Brecknockshire. It is expected that the completion of the undertaking will not be attained until about six years hence, when there will be a total storage capacity of 2265 million gallons.

*Scarcity of Houses in Swansea.*

It was anticipated that the exhibition of workmen's dwellings, erected on land owned by the Swansea corporation, which was held last year, would have led to the erection by private enterprise of an increasing number of working-class dwellings. This anticipation has not been altogether realised, though the corporation has decided to add to the number of cottages it already possesses by erecting several hundred more. The scarcity of such dwellings is indicated by the statement of the corporation rent-collector that for one empty house he had received 98 applications and that 560 persons had applied for some of the new houses.

*Swansea Hospital.*

The board of management of the Swansea Hospital has decided to appoint a fourth out-patient medical officer and to create a new appointment of assistant ophthalmic surgeon. To the latter position Mr. H. E. Quick, a former house surgeon of the hospital, has been elected. A proposal has been made that the hospital management and the corporation should coöperate in the establishment of a pathological and bacteriological department, and that in association with it the vaccine-therapy department of the hospital should be carried on under the supervision of an honorary medical officer.

Jan. 24th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Edinburgh School of Medicine for Women.*

AT the Edinburgh School of Medicine for Women, in which the lecturers are recognised as giving qualifying courses for graduation in the University of Edinburgh, 74 students have been enrolled during the winter. Of these, 64 are working with a view to University graduation and 9 for the triple qualification.

*Annual Report of Chalmers' Hospital, Edinburgh.*

At the anniversary meeting of the Faculty of Advocates, held on Jan. 18th, the directors of the Chalmers' Hospital reported that the number of patients treated during the year was 602 in all—373 of those having been treated in the free wards and 229 in the private wards, paying board. Of the 602 cases, 345 were surgical and 257 medical. Operations numbered 380. The out-patients numbered 3214, of whom 2835 were surgical and 379 medical. Operations under general anæsthesia in the out-patient department numbered 188 and dressings 17,236. The ordinary income for the year amounted to £4073 7*s.* 9*d.* and the ordinary expenditure to £3564 7*s.* 9*d.*, leaving a surplus of £508 10*s.* 3*d.* This surplus, increased by the accumulated surpluses of previous years, amounts to £1473 5*s.* 3*d.* The directors are considering alterations and extensions to the accommodation of the hospital, but could not yet submit any definite scheme to the Faculty. A lady, who wished to remain anonymous, has offered to defray the cost of erecting a covered verandah outside the female private ward. The offer has been accepted, and the verandah, which cost £200, has proved a great boon to convalescent patients.

*School for Cripple and Invalid Children in Edinburgh.*

The Edinburgh school board has recently purchased three small villas in Duncan-street and South Gray-street which are to be used as schools for mentally deficient and cripple and invalid children. One of the houses has already been altered and is in use as a school for mentally deficient children, and warrant was granted this week by the Dean of Guild Court to make alterations in the other two. Accommodation for cripple children will be on the ground floor, and will consist of three class-rooms, each holding classes of 20, a large dining-room, and a new entrance hall. On the upper storey there will be class-room accommodation for invalid children and a large hall. On the south side of the building there will be large verandahs where classes will be taught in fine weather, and on to which the class-rooms will open by means of folding doors. Hot-water pipes will be used for supplementary heating, but the class-rooms will be provided with open fire-places.

*Appointments in the University of Edinburgh.*

Dr. A. H. F. Barbour has been reappointed Lecturer on Gynæcology, and Mr. J. W. Dowden has been appointed an Examiner in Surgery and Practical Surgery.

*Epidemic of Diphtheria in Arbroath.*

An epidemic of diphtheria has broken out in Arbroath and district. Since the middle of December 49 cases have been admitted to the hospital.

*Medical Inspection of School Children in Aberdeen.*

In connexion with the question of treating and cleaning verminous school children the public health committee of the Aberdeen town council has now presented its report. It will be remembered that the communications from the school board requesting the coöperation and assistance of the sanitary authority in this matter were remitted by the council to the public health committee. The committee is of opinion that the town council should coöperate with the board in any practicable measures suggested for the purpose. It recognises that the presence of body vermin in a family is nearly always associated with a lack of personal cleanliness, and indeed with cases that would justify active interference by the public health department. The committee is not sanguine that permanent results will follow from any system of dealing with the verminous condition until a higher standard of cleanliness is reached in the affected households, and it is therefore disposed to believe that the most valuable effect from any measures that might be taken would be the stimulation of a stronger sense of cleanliness. It believes that, except in the case of parents who are altogether lost to a sense of shame in having their children sent home from school as filthy and verminous, the work of the medical inspectors of the board will probably in course of time appreciably raise the standard of family cleanliness, and thereby lead to a corresponding decrease in vermin. It is satisfied that the public health department has so far done all that can be done in present circumstances, and has indeed attempted more than in almost any other town regarding which it has information. Without venturing on an opinion as to what degree of permanent benefit may result from the application of radical measures in a large proportion of the cases of verminous households, the subcommittee recommends that as soon and as far as may be practicable a combined effort by the school board and the town council should be made to bring such measures into operation and to give them a fair trial. The annual cost of carrying out the proposal would amount to about £655, which would be borne by the town council and school board equally. If special premises have to be erected for dealing with verminous persons the total annual cost would be increased to not less

than £800. It would be desirable, in order to estimate the effective value of the whole work and to enable both the board and the council to ascertain whether they would be justified in undertaking it on the radical and somewhat expensive plan suggested, that all the children should be inspected for body vermin, say, every two or three months, and that, if desired, facilities should be given to the public health department for being represented at the inspections. The subcommittee has not in its estimate of expenses made any allowance for the cleaning of houses and the washing of clothing and bedding, and if such were undertaken the expenditure would be increased by £200 or £300 annually. With the view of carrying out the suggested arrangement an agreement between the council and the school board has been prepared.

*Medical Inspection of Schools in Caithness and Sutherland.*

A meeting of the Caithness Secondary Education Committee was held at Wick on Jan. 21st, when an important letter was submitted from the Education Department as to the appointing of a school medical inspector for Caithness. At present Dr. G. Dick of Wick is joint medical officer of Caithness and Sutherland, and the Department recommended that the two counties should be separated for public health purposes and an officer appointed to look after public health and school medical inspection in each county. After some discussion, it was agreed to offer the appointment of school medical inspector for Caithness to Dr. Dick, on condition that he gives up the medical officership of Sutherlandshire, the salary to be not less than his present emoluments. The county council subsequently fell in with the arrangement, and it was remitted to a committee with powers to approach Dr. Dick.

*Complimentary Dinner to Sir David C. McVail.*

Last week Sir David McVail was entertained at dinner by a large gathering of lay and professional friends in recognition of the honour of knighthood recently conferred upon him. Dr. D. N. Knox, President of the Royal Faculty of Physicians and Surgeons, Glasgow, occupied the chair and proposed the toast of the evening. After a tribute to his work as professor of physiology in Anderson's College, Dr. Knox said that their guest there joined Dr. Ebenezer Duncan, Dr. Reid, and himself in forming the Western Medical School in Glasgow. There he taught systematic medicine until he was transferred to the Royal Infirmary and became the professor of clinical medicine in St. Mungo's College. All this time Dr. McVail was thinking over the great question of medical reform, and the first intimation he gave on the subject was an introductory lecture he delivered in the Western Medical School on the teaching of medicine in Glasgow. It created considerable talk at the time, and immediately thereafter, in the early "eighties," the great question of medical reform came before the Scottish Universities. When the Bill of 1889 became a statute there was no doubt that it was to the skill, determination, and generalship of Dr. McVail that any benefit they had received from the Act was due. The affiliation clause was directly due to his efforts. The chairman also referred to their guest's services as a member of the University Court, and to the honour conferred on him 15 years ago by his appointment as Crown representative for Scotland on the General Medical Council. Sir David McVail, in acknowledging the toast, gave many interesting reminiscences of olden times in the Royal Infirmary, dealing more especially with the work of Lord Lister and Sir William Gairdner. At a later period of the evening Dr. John Patrick, on behalf of his old house physicians and students, presented Sir David McVail with a silver salver, candlestick, and flower vases, in recognition of their high regard and to mark the honour conferred upon him.

*Scottish Poor-law Medical Officers' Association.*

The report of the committee of this association for 1910 says that during the past year much correspondence has taken place with outgoing medical officers of over 25 parishes, all but two of whom courteously supplied on request detailed information regarding the appointments. The committee has obtained authoritative information, where necessary, and given advice in the matter of several problems submitted; for instance, appointments are absolutely at the discretion of the parish council, so that a non-resident appointment made thereby holds good even though there be a medical man resident in the parish. The Secretary for Scotland, Mr. J. Cathcart Wason, M.P., has replied to a query that he sees no chance of the Parochial Medical Officers (Scotland) Bill being considered in Parliament in view of the report of the Royal Commission on Poor-law, until the Government shall attempt legislation on the lines of the report. When that takes place Mr. Wason will have an opportunity to get the grievances of the Scottish Poor-law medical officers remedied. The secretary announces that he will always welcome communications from the members, which will, on request, be held as private and confidential, unless from the members of the committee. The annual meeting for 1911 takes place at the St. Enoch Station Hotel, Glasgow, this week, when the report will be submitted and new officers will be elected. Owing to deaths and resignations the numbers of the society are diminished, and new members are urgently asked for. The subscription is 5*s.* per annum. The financial report for 1910 shows assets £185 14*s.* 4*d.*, expenses £23 6*s.* 11*d.*, balance £162 7*s.* 5*d.* The present secretary is Mr. W. L. Muir, 1, Seton-terrace, Glasgow.

Jan. 24th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Insanitary Primary Schools.*

ON many occasions in the past few years attention has been drawn to the insanitary conditions of the Irish primary schools and to the neglect of hygienic considerations shown in the conduct of the schools. The Dublin Sanitary Association has recently had the subject under investigation and has published an important report thereon. The report quotes from Mr. Strong, an inspector of schools, who, in speaking of the schools in his district, says: "There are many of these unsuitable houses in the city of Dublin—one in the crypt of a church—badly lighted, heated, and ventilated; and another in an old dwelling-house, whose former drawing-room is the school-room." It is, of course, the fact that the Board of National Education has no direct control over school administration, but it has the very important power of withholding the grant in aid unless the school is "conducted in accordance with the regulations of the Commissioners." It is therefore well within the power of the Board to refuse the grant unless the schools are conducted in accordance with the demands of hygiene, but it cannot be discovered that they have generally exercised pressure in such a direction. Moreover, since 1892 attendance at school has been compulsory in cities and corporate towns as well as in many rural and suburban districts, and therefore parents have no option but to send children to what are often insanitary dens. On this point the report of the Dublin Sanitary Association remarks: "It would seem that the Commissioners consider the attendance of the children as the essential thing; that, if convenient, this attendance should be in properly equipped schools; but if such schools are not provided, still the children must attend at any school, no matter how unsuitable it may be. We should rather interpret their duty to prohibit, as far as lies in their power, the attendance of children at any school which is not properly equipped." Not only, however, have parents to send children to unhealthy buildings, but they are bound, in case of the child's absence through illness, to produce a medical certificate of the cause. In cases of mild disorder, it is, of course, easier to send the child than to obtain the certificate, and in consequence children with various contagious diseases are found mixing with healthy children in the school-room and play-ground. There is no system of medical inspection of schools in Ireland, and the evils resulting from this indiscriminate mingling of the infective with the healthy consequently go unchecked.

*Infant Mortality in Dublin.*

A conference was held in the Mansion House, Dublin, last week to discuss the problem of infant mortality. The death-rate of infants under one year has been, on an average for the past five years, 146 per 1000, this being the highest rate in Ireland. The corporation has recently adopted the Early Notification of Births Act, and it is now proposed by the Women's National Health Association to organise a band of voluntary workers, who, under the control of the city health

department, are to visit the homes of the young mothers and offer advice as to the care of the babies. It is essential that these workers should be trained and efficient, and a committee of medical men, nurses, and others is already at work arranging a course of instruction. The movement has the support of the heads of the various maternity hospitals of the city.

*Dr. Macnaughton-Jones's Museum.*

With patriotic spirit Dr. Macnaughton-Jones has presented to the Royal College of Surgeons in Ireland his gynæcological museum. Though the collection is small—about 100 specimens—it is interesting, for Dr. Macnaughton-Jones preserved only objects of special pathological or surgical value. Moreover, the specimens are mounted so as readily to show these points of interest; they strengthen the museum of the College in a point where it was weak.

*The Royal Sanitary Institute.*

His Excellency the Earl of Aberdeen has consented to act as patron, and Lord Dunleath is to be the President, of the Twenty-sixth Congress of the Royal Sanitary Institute, which is to meet in Belfast, on the invitation of the city council, from July 24th to 29th.

*The Belfast Hospital for Sick Children.*

At the thirty-eighth annual meeting of the supporters of the Belfast Hospital for Sick Children (incorporated), held on Jan. 20th, the new president, Captain the Hon. Arthur O'Neill, M.P., occupying the chair, it was reported that during the past year 564 patients (261 medical and 303 surgical) had been treated in the wards, while in the out-patient department there had been 10,864 attendances. Financially, the expenditure for the year amounted to £1910 10*s.* 9*d.*, which was in excess of the income by £251. Dr. P. T. Crymble and Dr. W. McCready have been appointed members of the medical staff in place of Dr. B. O'Brien (resigned) and Dr. Joseph Nelson (deceased). The present class of students is larger than has been the case for several years.

Jan. 23rd.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Medical Treatment of Accidents to Workmen.*

THE *juge de paix* of the eighteenth *arrondissement* of Paris has recently decided a point of law which has remained uncertain until now, the question at issue being the payment of certain medical fees by the employer of an individual who had been injured in the course of his work. The point has now been decided in favour of the medical attendant. Some insurance companies had argued that fees for dressings, massage, and similar details of treatment were not due to the medical attendant unless the latter had personally carried out these procedures. The medical men, on the other hand, put forward the plea that these parts of the treatment, although not applied by them personally, were nevertheless conducted in their hospitals, under their direct supervision and on their responsibility, by the agency of nurses and other persons in their service, and that they were entitled to remuneration for these duties. As above mentioned, a decision was given in favour of the medical men.

*The Question of the Abortive Treatment of Syphilis.*

At a meeting of the Société de Médecine de Paris held on Jan. 13th, after a discussion in which M. Cayla, M. Gaston, and M. Leredde took part, a resolution, proposed by M. Druelle, was carried unanimously to the effect that the society, while fully recognising the meritorious endeavours which had been made to discover an abortive treatment of syphilis, was of opinion that this object had not yet been accomplished. At a recent meeting of the Société de Pathologie Exotique M. Nicolle and M. Conseil described some cases of malaria treated by "No. 606." They said that it produced a well-marked good effect very rapidly, causing an almost immediate improvement in the general symptoms, a fall of temperature, and a diminution in the number of the hæmatozoa. On the other hand, this action was neither complete nor of long duration. The remedy was indicated as the first step in the treatment of serious cases and ought to be followed by injections of quinine. The doses of "No. 606" administered under these circumstances were from 30 to 40 centigrammes.

*Seaside Bathing Resorts.*

At a meeting of the Société de Médecine de Paris held on Jan. 13th M. Levassort emphasised the importance of situation and the direction of exposure in connexion with sea-bathing quarters, saying that Brittany was the part of France which offered the most ample choice of bathing-places, according as a stimulant or a sedative effect was desired. By analogy with the methods followed at inland balneary resorts, he showed the advantage of immersing the legs, and spoke of the benefit which children derived from playing on the sand, although they also spent a portion of the day in the water. M. Froussard mentioned that in some mineral-water stations, especially at Plombières, foot-baths, leg-baths, and local douching of the lower extremities were employed every day for the relief of sanguineous congestion of the intestines and uterine appendages.

*Determination of the Freshness of Milk.*

The following method of determining the freshness or otherwise of milk was described by M. Bertin-Sans and M. Gaujoux at a meeting of the Pediatric Society held on Jan. 17th. The sample of milk contained in a test-tube had first added to it some drops of a red solution consisting of 0·25 part of fuchsine, 50 parts of alcohol, and 100 parts of water; some drops were then added of a blue solution consisting of 0·25 part of methylene blue and 1000 parts of water. The result was a violet colour which in fresh milk persisted for at least 24 hours, but in milk which was not fresh the colour turned to red with a rapidity proportionate to the change which the milk had undergone.

*The Association of Medical Students.*

At the general meeting which took place recently the Association of Medical Students approved the action of the committee with respect to questions of medical teaching. The association resolved to continue its efforts for the improvement of the professional education of students, and expressed regret that no reform had as yet been introduced by the public authorities. The association desires the creation of a superior medical council composed half of professors of the faculty and half of nominees of the medical syndicates, with the conferment of voting powers on medical students' associations. On the ground that the organisation of medical education requires a reform in the system of hospital attendance, the association also asks for an inquiry having for its object a modification of the appointment of *externe*, for which there ought to be an examination open to all students. The association considers that all medical students ought to have held this appointment for at least two years preparatory to obtaining the diploma of Doctor of Medicine.

Jan. 23rd.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

*Honours to Augusto Murri.*

THE Italian record in commemorative celebrations is a brilliant one, and yesterday's "Onoranze ad Augusto Murri" at Bologna more than maintained the national tradition. The occasion was the thirty-fifth anniversary of that distinguished consultant's lectures from the chair of clinical medicine, and it filled the theatre of the Ospedale di Sant' Orsola with an imposing audience, in which all the students of the present year and scores of old pupils, now professors or practitioners, were reinforced by the teaching staff of the University and by many citizens of both sexes. The proceedings opened with a few words of congratulation addressed to the master by one of the students, words full of the loyalty and affection which Professor Murri never failed to inspire; and then followed Dr. Floriano Brazzola, the lecturer on pathological anatomy, who, speaking for the Società Medica over which he presides, dwelt on the gratitude he and other old pupils felt towards their teacher, to whom they owed obligations which seemed to them to increase with advancing years. Professor Brazzola concluded by announcing the publication of a "Festschrift," to which he and others of the older "Murriani" will contribute in honour of their chief. After him came the President of the Association of the Medici Condotti (divisional or communal practitioners), who indicated the value

of teaching like Murri's in a *métier* such as theirs, where individual resource still responded to the lessons which at once moulded and inspired the *mens medica*. A touching tribute from Dr. Vitali, a colleague in the Senatus Academicus of Bologna, to the "twice-blest" teaching of the master, "happy for the giver as well as for the receiver," closed the official addresses, in acknowledgment of which Professor Murri, visibly affected, rose to reply. A rapid survey of the medical field as he found it and as he had helped to leave it led up to a loyal appreciation of his own masters, respect for whom was best shown, he said, by research and observation carried on in their spirit with all the improved aids that science and invention, checked by experience, were pressing into the service. The "metodo sperimentale," of which Bacon and Galileo were the pioneers, was at once the agency and the guarantee of sound thinking and sound practice, constituting the lines of a progress without limit, insomuch (he added, with a touch of humour and pathos) that the young minds he was addressing might, another 35 years hence, recall the celebration of to-day with the remark, "Come il nostro vecchio insegnante sapeva poco!" (How little our old teacher knew!) And so, amid repeated rounds of applause, the veteran clinician and consultant sat down, to receive, later in the day and at his own house, messages of congratulation, by post and telegraph, from correspondents grateful to him on various grounds, not only as a master of the healing art, but as a contributor to medical literature at home and abroad.

*The "Causa Causans" of Pellagra.*

Presiding to-day at the first meeting of the commission instituted by himself on the cause or causes of pellagra—a commission composed of Professor Lustig, its working president, with Dr. Alessandrini, Dr. Antonini, Dr. Bertarelli, Dr. Giannelli, Dr. Gosio, Dr. Sclavo, Dr. Tizzoni, and the Hon. Signor Caetani, as assessors—Signor Luzzatti, the Prime Minister, opened the proceedings with a retrospect of the findings of previous workers in that field. Lombroso's theory as to its cause residing in unsound maize is now abandoned, but on the strength of that theory greater attention was paid to the conditions, dietetic and other, under which the agricultural labourer lived, and the result was, undoubtedly, a marked decrease in the mortality, particularly in the cases of lunacy due to pellagra—7·9 per cent., the proportion of such patients in asylums in 1898, having sunk to 3·5 per cent. in 1908. Tizzoni, holding Lombroso's theory to be untenable, ascribed the disease to a specific bacillus which he called the "strepto-bacillus pellagræ." This did not satisfy Alessandrini, who found the cause in a parasite infecting the surface of the potable water drunk in the fields, while Sambon traced it to the puncture of a minute insect which he designated the Simulium reptans. This finding seems to command pretty general favour, in accordance with which the commission is prosecuting its researches into the required prophylaxis and cure. Meanwhile it maintains the subsidiary measures introduced by Lombroso (the improved alimentation secured by "cucine economiche," *inter alia*) and the general amelioration of the conditions under which the rural population lives and labours.

Jan. 20th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*The Reward of Medical Honesty.*

A FEW months ago an unexpected result followed the notification of a case of typhoid fever by a country practitioner acting also as district medical officer in a village near Linz, Hungary. On discovering the patient he at once notified the disease, as he was, in fact, bound to do, and in this case the duty of notification was exceptionally imperative as military manœuvres were about to take place in the district and a camp was to be formed in the village in question. In consequence, however, of the presence of the disease being notified to the military headquarters the camp was not formed there and the inhabitants lost the opportunity of selling articles of various kinds to the officers and soldiers. It could not be proved that they had sustained any actual financial loss because they had not made any special provision for the occasion, but nevertheless there was general indignation against the district medical officer, and this feeling was fostered until he was practically boycotted by the population. He and his household were even refused food and clothing in the village and the lives of the members of his family were endangered. Protests made by him were useless; he not only received no protection from the local authorities, who felt themselves aggrieved by the notification of the infectious case, but he was even dismissed from his appointment as district medical officer. In vain all the medical corporations tried to induce the population to take a reasonable view of the circumstances, but nothing would satisfy them short of the expulsion of the unfortunate man from the place. The medical organisation then issued a warning to prevent any other practitioner from settling there, as it was hoped that after some time the animosity of the villagers would subside, and in the meantime all endeavours were made to induce the Government to give an authoritative decision to the effect that the medical officer could not be blamed for having done his duty. But the worries and excitement of such a complicated situation, and the dread of losing his only means of livelihood, proved too much for the victim of this persecution, who was suddenly cut off by an attack of cardiac paralysis. The affair, however, is not at an end, because in medical circles an endeavour will be made to obtain substantial damages for the family of the wronged medical officer.

*Midwives in Vienna.*

The unsatisfactory position of the midwives in this city has for a long time been a burning problem for the sanitary authorities. One of the most frequent complaints is that overcrowding of this particular occupation is nowhere so manifest as here. For instance, whilst in Berlin with its larger population there are only 800 authorised midwives, in Vienna there are over 2000. This was pointed out a few years ago in a mass meeting of midwives, in which the speakers demanded the institution of a *numerus clausus* for their occupation, for under the present conditions there were many trained midwives in the city who had not one case of labour to conduct in a year. In the country districts the rate of payment was so bad that no woman of the better class cared to undertake the duties. The "midwife tariff," as it is called, stipulates a fee of approximately half a sovereign for an attendance of 10 days, including the delivery; this tariff has existed since the year 1845 and urgently requires revision. The insufficiency of the earnings of the city midwives naturally prompts many of them to undertake procedures of a criminal nature. As a rule, the poor women in this city prefer to go to one of the numerous hospitals for their lying-in, whilst the middle and upper classes always require the presence and active help of a gynæcologist and afterwards that of a surgical nurse. The total number of births is also steadily diminishing, whilst the number of midwives is increasing. This question therefore calls for reform.

*Health of Vienna Labourers.*

In the winter months there is usually an increase of illness among special sections of the population, and principally among the poorer members of the working-classes, a circumstance which is plainly shown by the report of the Krankencassa (sick club) of labourers, dealing with the health of its 310,000 members. In November and December, 1910, there were respectively 8995 and 8886 cases of illness incapacitating for work. Of these there were in November 793 and December 760 cases of illness caused by tuberculosis of the respiratory organs, whilst other diseases of these organs numbered 1364 in November and 1479 in December. In November there were among club patients 427 cases of tonsillitis, 312 cases of influenza, 287 cases of disorder of the circulatory organs, 522 cases of severe gastro-intestinal diseases, 803 cases of rheumatism, and 1766 cases of accident or injury. In December there were 327 cases of tonsillitis, 349 of influenza, 292 of disorder of the circulatory organs, 629 of severe gastro-intestinal disease, 793 of rheumatism, and 1908 of accident or injury. All the cases included in these returns were sufficiently severe to confine the patient to bed for at least three days. The mortality was nearly 3 per cent. of the patients, which compares well with the mortality in our general hospitals, where it is from 8 to 10 per cent. of the inmates, whilst the general mortality for Vienna

is 15 per 1000. Fully one-third of all deaths were due to tuberculosis of the lungs or larynx, whilst the other deaths due to disease of the respiratory organs only amounted to 6 per cent. The mortality due to circulatory disease was also high, being 22 per cent., whilst neoplasmata claimed 8 per cent. of the deaths. Of the cases of accident or injury 3 proved fatal in November and 7 in December, the aggregate mortality under this heading being about 0·33 per cent.

Jan. 20th.

## NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

*The Indian National Congress and Medical Problems.*

THE Indian Medical Service came in for discussion at the Indian National Congress on Dec. 28th. Sir Balchandra Krishna moved a resolution requesting the Government of India to take early action in the direction pointed out by the Secretary of State regarding the employment of independent medical practitioners in the superior posts of the civil branch of the Indian Medical Service. The resolution also urged the constitution of a distinct Indian civil medical service wholly independent of the Indian Military Medical Service. The Indian Medical Service was created for the Indian army was the view forcibly brought to the notice of the members of that service by its Director-General. In the same speech the Director-General reminded the Indian Medical Service officers of the necessity of creating a better feeling between themselves and the officers of the Royal Army Medical Corps, and also between themselves and the general practitioners. Such words from one in his position go far to suggest that the time is approaching when an Imperial Army Medical Service may be organised, whose officers will do duty only in connexion with the army, a civil medical service as well as a separate sanitary service being also instituted.

*A Sanatorium for Consumptives in the United Provinces.*

A sanatorium for consumptives was the form decided upon for the United Provinces memorial to His late Majesty the King-Emperor at a representative meeting of official and non-official gentlemen at Allahabad held recently, presided over by the Lieutenant-Governor. This scheme, which is favoured by Sir John Hewett, is likely to receive very general support. A technological institute and a provincial orphanage have been mentioned as two alternative schemes, but owing to various difficulties that might arise in attempting to execute them they received no support at the meeting, which unanimously agreed to the sanatorium for consumptives. An influential committee was appointed to collect subscriptions and carry out the arrangements.

*Courses of Instruction for Indian Medical Service Officers.*

The Government of India has concurred in a proposal of its Sanitary Commissioner that the course of training in clinical bacteriology and technique at the Central Research Institute, Kasauli, for officers belonging to the Indian Medical Service (but not serving under the bacteriological department) should last for four weeks. Officers selected to attend this course will be permitted to be absent from their stations for this period, in addition to the actual time occupied by the journey to and from Kasauli and one day for preparation for each journey. The classes of instruction will in future assemble in the months of January, March, May, July, September, and November each year. No officer drawing allowances from local funds will, however, be allowed to proceed to Kasauli for a course of training in clinical bacteriology and technique unless he is prepared to forego those allowances or unless the local fund authorities agree to pay these allowances both to the officers permitted to go to Kasauli and to the officers appointed to act for them. In all other cases he will be entitled to retain any local allowance drawn by him immediately before he proceeded to Kasauli without prejudice to the claims to such allowance of the officers acting for him.

*Medical Students at Lahore.*

Among the colleges in Lahore, and affiliated to the Punjab University, the Medical College is the only one which is unprovided with a hostel or boarding-house. The Syndicate of the Punjab University considered recently a letter on this subject from the Inspector-General of Civil Hospitals, who had suggested that the University should insist either upon all medical students who could be accommodated living in hostels, or upon first- and second-year students doing so. The Syndicate was of opinion that any such rule should be made by the College rather than by the University, that the charge proposed was higher than in any other college in Lahore, and that in view of the changes to be made in connexion with the King-Emperor Edward VII. memorial scheme the question of hostel accommodation might stand over for the present.

*The Status of Assistant Surgeons and Sub-Assistant Surgeons.*

Mr. Robertson, Secretary to the Government of Bombay, replying to the resolutions regarding the registration of medical practitioners in India, which have been laid before Government, states:—

With reference to the opinion that military assistant surgeons and civil medical assistants (now styled sub-assistant surgeons) should not be classed as duly qualified medical practitioners for purposes of medical registration, I am to observe that Government have for many years educated two classes of medical practitioners, primarily for their own departments, and have received them into their service as military assistant surgeons and civil medical assistants on their undergoing a fixed course of training under competent teachers at certain medical schools and colleges. No "licence" or "diploma" has been granted to these men, but they have been given by Government all the privileges of qualified medical practitioners and have performed, as part of their routine work, all duties which could have been demanded of them had their qualifications been of the highest. The Governor in Council therefore does not agree in the opinion expressed by the meeting that members of both these classes, who have received regular training on Western lines and passed the recognised tests, should be regarded as "unqualified," and classed with vaids, hakims, Ayur Vedic doctors, apothecaries, &c. Government is not aware how far the views communicated by you are shared by the rest of the medical profession in the city of Bombay, but the fact that these two classes of men were included by the Bombay branch of the British Medical Association in the committee appointed by that body to consider the question of registration appears to be a strong evidence that the most influential medical men of Bombay are not in sympathy with the opinion expressed at the meeting. I am to add that in all countries the sole authority which lays down the conditions constituting qualifications for the legal practice of medicine and surgery is Government, and that after carefully considering the views expressed in your letter and the resolutions accompanying it, the Governor in Council sees no reason to exclude military assistant surgeons and civil medical assistants from the proposed registration of duly qualified medical practitioners. Other points touched upon in the resolutions will be duly considered by Government when the proposal to pass the Registration Act comes before them.

*Retirement of Colonel J. Shearer, C.B., D.S.O., I.M.S.*

The last *Gazette of India* contains the notification of the retirement from the service of Brevet-Colonel J. Shearer, Principal Medical Officer of the Derajat and Bannu Brigades. This officer has had a long and distinguished career in India and has seen much active service, including the Egyptian Campaign of 1882, the war in Burma 1887–8, Hazara Expedition 1891, Miranzai Expedition 1891, Waziristan Expedition 1894–5, and Tirah Expedition 1897–8. Colonel Shearer was for some time secretary to Sir Thomas Gallwey K.C.M.G., C.B., when Principal Medical Officer, His Majesty's Forces in India, and was closely associated with the far-reaching administrative reforms carried out by this officer during his tenure of appointment under Lord Kitchener. Colonel Shearer's retirement will be a great loss, not only to the Indian Medical Service, but to Freemasons throughout India, as he has done much to promote the interests of the craft in this country in which he filled various high offices with distinction.

*Dr. C. A. Bentley.*

It is understood that on the termination of his present appointment under the Bombay Government, Dr. Chas. A. Bentley, who has been doing special work on malaria, will be appointed Deputy Sanitary Commissioner of Eastern Bengal and Assam.

Jan. 5th.

## NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

*Vital Statistics.*

RECENT vital statistics show a steady decline in the birth-rate, but New Zealanders may take some comfort in that while the births are few the rate is higher than it is in Australia. The average number per family for the ten years, 1890–99, showed 4·22 births per marriage, while for the period 1900–09 it was 3·22. It would appear that 46 out of every 1000 children born were born out of wedlock. In these

cases more than half the mothers were under 23 years of age. Five were 14 years of age, 9 were 15 years, 34 were 16 years, 63 were 18 years, 146 were 19 years, 101 were 20 years, 103 were 21 years, 85 were 22 years, and 89 were 23 years of age. According to the Registrar-General, the expectation of life for males is 54·44 years. It would appear that the influence of the Chinese consul is making for less restrictive measures with respect to the admission of immigrants from China. At present, in addition to a poll-tax of £100 every Chinaman had before admission to read and write some sentences in a European language. By a Government Bill introduced recently, the Governor takes power to modify these conditions. It must not be presumed from this, however, that there will be any relaxation in the campaign in favour of a white New Zealand. From the report of the inspector of mental hospitals it would appear that there are 3549 people in these institutions. This means that one in every 280 of the people of New Zealand is insane. The proportion is, perhaps, slightly greater because there are some who are looked after by their friends. The ratio would appear to have increased since last year. Males show 1 in 253, females 1 in 318. As to the causes, heredity seems to be responsible for 14·36 per cent.; critical periods, 14·2 per cent.; mental stress, 9·6 per cent.; while alcohol is credited with only 4·9 per cent. The average gross cost per head is £34 13*s.* 3½*d.*

*Vaccination.*

The same tale has to be told with respect to vaccination. Only some 4·3 per cent. of the children born last year were vaccinated. The steady decrease in the number of the children protected is a matter for grave concern, but, alas, those in authority pay little attention. An amendment to the Public Health Act was introduced by the Government towards the end of last session, but, like many others, it would seem only to have found a place on the order paper so that it might form one of the "innocents" yearly thrown to sacrifice. The proposal was practically to delete all semblance of compulsion from the Act governing vaccination, but in case of small-pox appearing in any part of the Dominion the Governor was to have power to declare an "infected area," and to require all inside that area to be vaccinated. At the present time the law is practically a dead-letter, and to allow it to remain upon the statute book and not to enforce it is wrong. It should be remembered that the disobedience to the law is the result of carelessness rather than any active opposition, although there are, of course, the section who are continually declaiming against the interference with "personal rights."

Dec. 19th, 1910.

## UNITED STATES OF AMERICA.

**(FROM OUR OWN CORRESPONDENTS.)**

*The Society of Sanitary and Moral Prophylaxis.*

THE object of this society is to endeavour by all possible means to decrease the spread of venereal diseases. Dr. Prince A. Morrow is the president of the society. The society includes in its membership prominent members of the medical profession, as well as laymen and laywomen of note. A public meeting of the society was held in the New York Academy of Medicine on Dec. 22nd, 1910, and was largely attended, the majority of the audience being women, Dr. Morrow being in the chair. An address was delivered by Professor E. R. A. Seligman of Columbia University on the sanitary supervision of prostitutes. It was a vigorous criticism of the Payne Bill passed recently in the State of New York, with a view of checking venereal diseases by partial measures for regulating prostitution. Much opposition has been developed against the Bill, especially against Clause 79 for the sanitary supervision of prostitutes. There is a great aversion in this country to any kind of regulatory measures, and in his address Professor Seligman gave expression to this sentiment in strong terms. Furthermore, the argument was brought forward that the Payne Law is not far-reaching enough to be of any use. At any rate, there can be little doubt that the systems of regulating prostitutes in vogue in Europe will not meet with favour in this country. Dr. Stephen Smith, the Nestor of the medical profession in New York, and one of the pioneers of the New York Board of Health, read a paper on the powers of the health board to control venereal disease. He pointed out that these powers are arbitrary, almost autocratic, and that therefore sufficient authority is vested in this board to deal with the matter as its members may think fit, and that, so far as New York City is concerned, the board of health is perfectly competent from all points of view to meet the situation. Dr. A. Jacobi, Dr. Darlington, and several others joined in the discussion, but the trend of all the speeches was in opposition to the regulation of prostitution as a means of controlling venereal diseases. The society itself does much, and hopes to do much more, by educative means, by the distribution of literature, and by lectures delivered in all parts of the country. The most interesting feature of the present widespread campaign in America against venereal disease is the manner in which everywhere the matter is publicly discussed. Not long ago the subject was entirely tabooed. Now public meetings are held, at which women, not only mothers of families but even girls, are present, where sexual hygiene and venereal diseases are made the subjects of free and open debate.

*Preventable Insanity.*

A meeting of the New York State Charities Association at the New York City Academy of Medicine on the evening of Dec. 23rd passed resolutions to the effect that fully 70 per cent. of the cases of insanity received into our asylums are preventable, and that an immediate campaign of education should be instituted among the people. Among the 70 per cent. of preventable cases the association classed those induced by alcohol and drug habits, by various infections, auto-intoxications, emotional strain, and overwork. During the past decade, while the population of New York State has increased less than one-half, the number of known cases of insanity has doubled. Last year 6400 new cases were admitted to the asylums, a net increase of 1200. Much of this increase is apparent, however, owing to improved methods of diagnosis and to more attention being paid to the insane.

*The Plea of Insanity in Murder Cases.*

The Society of Medical Jurisprudence of New York City at a recent meeting has discussed the question of the frequent escape of murderers from capital punishment on the plea of insanity. At present juries are obliged to acquit prisoners adjudged insane. The society recommended a change in the law so that a verdict might be rendered "guilty but insane," which would lead to the immediate incarceration of the prisoner in an asylum for the criminal insane, but would not absolve him from the usual penalty if he should at some future time regain his reason. A distinction would thus be established between insanity at the time of the commission of a crime and insanity at the time of trial, and the latter would not save the life of a prisoner adjudged guilty if he finally recovered. Doubtless the death penalty would never be exacted in such cases.

*The Cost of Hospital Patients in New York.*

In announcing the Hospital Saturday and Sunday collections this year the association in charge thereof has drawn attention to the fact that in ten years the cost of treating a patient has incresed 100 per cent. In 1900 the daily cost of each patient was 4*s.* 10½*d.*, whereas to-day it amounts to 8*s.* 10*d.*

*The Federal Government and the Rotten Egg Traffic.*

The Federal Government is prosecuting several firms for selling to bakers eggs in an advanced stage of decomposition, to which practice I referred in THE LANCET of Jan. 7th, p. 66. Such eggs have a legitimate market among manufacturers of varnish, but bakers have been purchasing them at nearly ten times the regular market price. It appears that the hydrogen sulphide disengaged from such eggs is used in place of carbon-dioxide in raising bread and cake. They have been sold in bulk by the pound, the shells being discarded and formaldehyde added to the putrefying mass of yelks and whites, which is then frozen and disposed of in that condition. An analysis of this precious mess showed 8,000,400,000 micro-organisms to the cubic centimetre.

*Exercise for Naval Officers.*

The famous Roosevelt "tests" for officers of the navy have been abolished, and the new regulations demand only a quarterly exercise by officers of the navy and public health

and marine hospital service. They will be obliged to walk 25 miles in two consecutive days, five consecutive hours being allowed for each day, and the walk of 12½ miles each day is not to be completed in less than four hours. Physical examinations will precede and follow each test, and officers found unfit will be ordered before a retiring board.

*Naval Dental Officers.*

The Congressional House Committee on Naval Affairs has recently reported favourably on a Bill entering members of the dental corps as acting assistant surgeons, with provision that after 11 years' service there may be developed from them automatically one lieutenant-commander, four passed assistant surgeons, and 25 assistant surgeons.

*Smoking Automobiles.*

Federal legislation is being sought for protection of the pedestrian public against smoking automobiles, which have become veritable nuisances everywhere, and a probable menace to health.

Jan. 18th.

# Obituary.

## HENRY POWER, M.B. LOND., F.R.C.S. ENG.,

LATE VICE-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; AND CONSULTING OPHTHALMIC SURGEON TO ST. BARTHOLOMEW'S HOSPITAL AND THE WESTMINSTER OPHTHALMIC HOSPITAL.

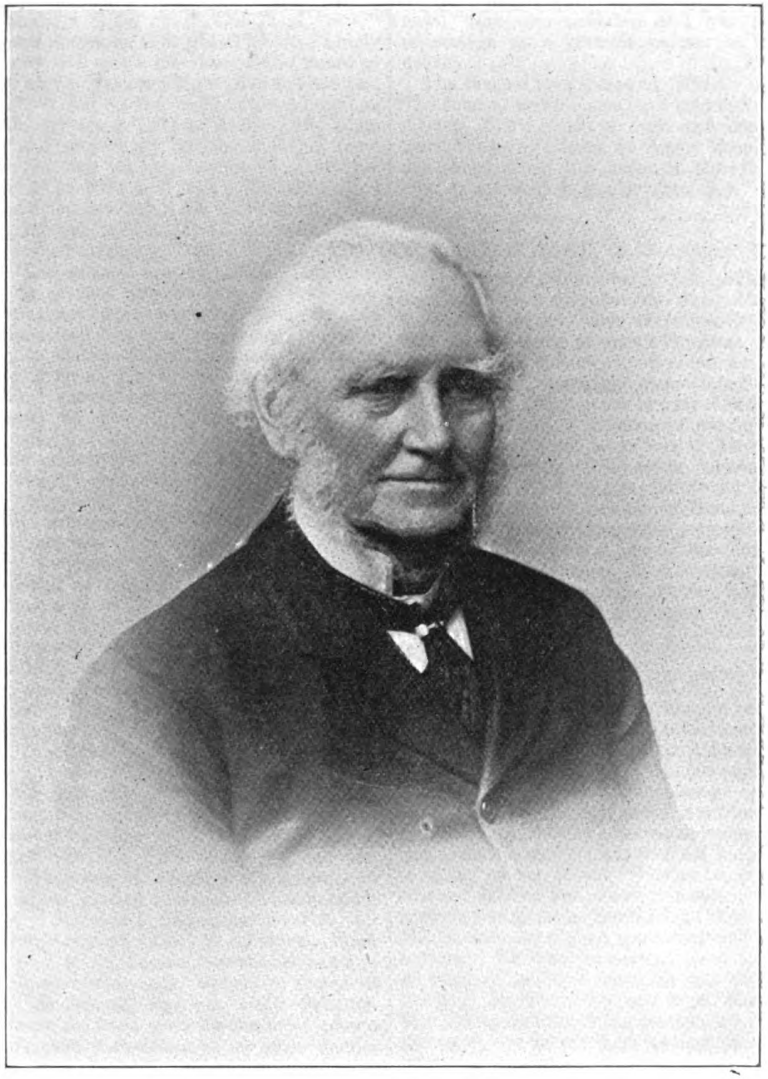
WE deeply regret to announce the death of Mr. Henry Power, consulting ophthalmic surgeon to St. Bartholomew's Hospital, and for more than 40 years a regular member of the staff of THE LANCET, the sad event having occurred at his residence, Bagdale Hall, Whitby, on Wednesday, Jan. 18th.

Henry Power was born at Nantes in France on Sept. 3rd, 1829, the only child of Captain John Francis Power by his second wife Hannah, daughter of Mr. Henry Simpson, of Meadowfield, Whitby, Yorkshire. His father came of a long line of soldiers, and received his first commission at the early age of 14 years. He served through the Peninsular, Baltic, and Waterloo campaigns, and received the Peninsular medal (1793–1814), with a clasp for Sahagun and Benevente, as a cornet in the 3rd Dragoons King's German Legion, and the Waterloo medal as a lieutenant in the 3rd Regiment of Hussars K.G.L. He was afterwards captain and major in the 35th (Royal) Sussex Regiment, "the Old Orange Lilies," and at the time of his death in 1856 he was lieutenant-colonel in command of the British Foreign Legion at Shorncliffe. Immediately after his birth Henry Power was taken to Barbados, where his father was quartered, and narrowly escaped death in the hurricane which devastated the island on the morning of August 11th, 1831, when the barracks were blown down, killing the sergeant-major, a sergeant, and five privates. Major Power resigned his commission in 1833, and for many years spent the wandering life which was then usual with half-pay officers who had no private means. His son, therefore, was educated for short periods at schools in Gloucester, Liverpool, Cheltenham, Leamington, and Whitby, never remaining long enough at any place to receive a thorough grounding in classics and mathematics. His name appears in the lists of Cheltenham College as a day boy admitted at Easter, 1842, the college having been opened in the previous autumn. Having decided to adopt the profession of medicine, he was apprenticed to Mr. Thomas Lowe Wheeler in 1844, who was afterwards chairman of the Board of Examiners at the Apothecaries' Hall. Mr. Wheeler was the son of Thomas Wheeler (1754–1847), the botanist, who was apothecary to St. Bartholomew's Hospital. The apprentice lived with his master in Newcastle-court, Gracechurch-street, E.C., entered St. Bartholomew's Hospital, and was diligent in attending the early morning botanical lectures and the herborisings which were then a feature of the medical curriculum.

The result of this botanical training enabled Mr. Power to win the Galen silver medal and the Linnæan silver medal given annually by the Society of Apothecaries, and in 1851 he was admitted a Licentiate of this body. In the same year he took the Membership of the Royal College of Surgeons of England, and on Dec. 1st, 1854, he was elected F.R.C.S. Eng. At the same time he was graduating in medicine at the University of London where he had a brilliant career. He took the prize in chemistry at the matriculation examination, the exhibition and gold medal in anatomy and physiology, and the gold medal in structural and physiological botany at the intermediate examination in medicine in 1852, the scholarship and gold medal in physiology and comparative anatomy, and the scholarship and gold medal in surgery at the Final M.B. examination, graduating M.B. in 1855. Four years before, that is in 1851, he had been appointed demonstrator of anatomy at the Westminster Hospital, and for the next ten years he lectured successively on comparative anatomy, human anatomy, and physiology at that school. He was appointed assistant surgeon to the Royal Westminster Ophthalmic Hospital in 1856 and assistant surgeon to the Westminster Hospital in 1857. The latter post he resigned in 1867, when he was elected ophthalmic surgeon to St. George's Hospital. In 1870 he resigned his position at St. George's Hospital to become the first ophthalmic surgeon at St. Bartholomew's Hospital, a position which he held for nearly a quarter of a century. For 12 years he was ophthalmic surgeon to St. Bartholomew's Hospital at Chatham, where he attended every Wednesday afternoon, leaving London at 2 o'clock and arriving in town again at 6, and as by this time his private practice was very large, it will be seen that throughout his long professional career his life was an extraordinarily industrious one.

Mr. Power's varied literary work showed well his industry and wide range of exact knowledge. In 1863 he translated for the New Sydenham Society the work of Wilhelm Kramer of Berlin, entitled: "The Aural Surgery of the Present Day." From 1864 to 1876 he edited the sixth, seventh, eighth, and ninth editions of Carpenter's famous "Principles of Human Physiology." The following excerpt from a review of the seventh edition, published in THE LANCET of April 10th, 1869, bears testimony to the essential characteristics of his work: "It is in all respects an admirable work, and we congratulate Dr. Carpenter on having secured the services of a man endowed with the ability, learning, and conscientious exactitude of its editor, Mr. Power. We almost regret, with so much new matter on the one hand, and the recasting and reconstruction of the old on the other, that Mr. Power did not rewrite the book, for the production of a new edition so complete as the present one must have caused him infinite labour." As a matter of fact, Power may almost be said to have rewritten each edition. In 1869 "Illustrations of the Principal Diseases of the Eye" was published by Messrs. Churchill, the original coloured drawings having been made by Power himself from the patients who came under his observation at the Royal Westminster Ophthalmic Hospital. In 1870 he translated for the New Sydenham Society Professor Stricker's "Manual of Human and Comparative Histology." This publication formed a very valuable and welcome addition to English medical literature. The translator's own knowledge of the subject, joined to his familiarity with the German language and his mastery over his own, resulted in the production of a volume that betrayed scarcely a trace of its foreign origin. In 1876 Power translated, for Ziemssen's "Cyclopædia of the Practice of Medicine," Erb on "Diseases of the Peripheral Cerebro-spinal Nerves," and from 1879 to 1899 he re-edited, for the New Sydenham Society, in conjunction with Dr. Leonard Sedgwick, Mayne's "Expository Lexicon of Medical Terms." The new edition was planned on so large a scale, that the last volume, P to Z, was completed by Mr. George Parker. In 1884 his "Elements of Human Physiology," one of Cassell's manuals, was published, was very highly commended by the medical press, and obtained wide popularity.

When it is remembered that in addition to all his literary and official duties Mr. Power was for many years a leading London ophthalmic surgeon whose wise advice and manual dexterity were daily in demand, it will be wondered what time over he could have to place at the disposal of this journal. The fact is that he was an untiring as well as a methodical worker, and his industry and love of order enabled him not only to keep abreast of ophthalmological literature, but also to read widely in anatomy, physiology, and botany, and to record his candid views upon what he read with regularity. Week after week, year after year, in this manner he sat in genial judgment upon medical writers, and so closely accurate were his appreciations, and so obviously fair and friendly his strictures, that we can hardly remember an occasion when an author was moved to protest against his criticisms. Gradually, as different



HENRY POWER, M.B. LOND., F.R.C.S. ENG.,

LATE VICE-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND; CONSULTING OPHTHALMIC SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

branches of science underwent development, Power advised us that it was time for us to seek the help of some one more in touch with special work in zoology, botany, and, lastly, in physiology; but for many years in these subjects as well as in his particular subject of ophthalmology he was our general adviser. No member of the staff was ever more missed than he was when retirement from London broke his intimate association with us, and in this office his memory will always be cherished. And the feeling of regret that we can thus personally express will, we know, be shared by hundreds of his colleagues, pupils patients, and friends, for it was impossible not to feel that Power's handsome presence and genial bearing were the exterior that fitted well a generous, simple, strenuous nature.

At the Royal College of Surgeons of England he filled nearly all the official positions. He was a member of the Board of Examiners in anatomy and physiology from 1875 to 1880 and again from 1881 to 1884, and on the reconstituted board as an examiner in physiology from 1884 to 1886, and as an examiner in anatomy and physiology for the F.R.C.S. from 1884 to 1886. He served two terms of office as a member of the Council from 1879 to 1890, and was a Vice-President for the year 1885. He delivered the Arris and Gale lectures on Anatomy and Physiology, 1882–83; was Hunterian Professor of Surgery and Pathology, 1885–87; Bradshaw lecturer, 1886; and Hunterian Orator in 1889. His wide learning, his particularly clear insight into his subjects, and his kindness of heart and manner made him an ideal examiner. He acted as an examiner in physiology at the University of London in 1870, as examiner in the natural science tripos at Cambridge in 1874–75, as examiner in the school of natural science at Oxford 1875–77, and he also examined at the University of Durham. Among other posts which he filled may be enumerated the office of professor of physiology at the Royal Veterinary College 1881–1904, where he became the friend and trusted adviser of many generations of veterinary students. On his retirement he was much touched by their presentation to him of an arm-chair fitted with an electric reading-lamp and furnished with an appropriate inscription, as well as by a separate presentation from the veterinary surgeons in South Africa who had been too late in joining the original testimonial. He served the office of President of the Harveian Society of London for a double term of office during the years 1880–81, a unique tenure of the chair. He was President of the Ophthalmological Society of the United Kingdom 1890–92; Bowman lecturer in 1887, when he took for his subject "The Relation of Ophthalmic Disease to Certain Normal and Pathological Conditions of the Sexual Organs"; and a Vice-President of the Royal Medical and Chirurgical Society 1892–93. For many years he was surgeon to the Linen and Woollen Drapers' Benevolent Fund and to the Artists' Benevolent Society.

He married his first cousin Ann, daughter of Mr. Thomas Simpson, of Meadowfield, Whitby, Yorkshire, on Dec. 21st, 1854, with whom in due course he celebrated his golden wedding day. He lived immediately after his marriage at 3, Grosvenor-terrace, now 56, Belgrave-road, S.W.; in 1866 he moved to 45, Seymour-street, W.; and in 1870 to 37a, Great Cumberland-place, where he remained until he retired to his house, Bagdale Hall, Whitby. Always a hard worker, as we have seen by our brief record of his professional life, the necessities of a large family made the earlier years of his life especially strenuous. Coaching students for their examinations and literary work were the chief sources of income, and for many years he accustomed himself to go to bed at two or three o'clock in the morning and to awake at six, when he was ready to go to the baths with his boys or to the parks for a run before breakfast, or in later years for a bicycle ride. Many pleasant evenings were spent with T. K. Parker at a time when he was working first on the foraminifera, later on the shoulder girdle and sternum in the vertebrata, and, finally, on the structure and development of the frog's skull. Parker's beautiful dissections made with a pair of sewing needles stuck into penholders and his harmless eccentricities of expression and of thought were a constant theme of wonder and amusement, and his death was the first of a series of blows which saddened the later years of Mr. Power's life. Sir William Savory, his life-long friend and companion, died in 1895; Mr. Bowater J. Vernon, his colleague with whom he was in daily communication, in 1901; and the dreadful tragedy when his artist daughter and his granddaughter were drowned before his eyes and he was himself rescued with difficulty finally decided him to leave London for a more restful life in congenial surroundings.

Mr. Power was a skilful artist both in water colours and with a brush and indian ink, and in early life he played the violin. His artistic powers he inherited from his father, who had received a commission from H.R.H. the Duke of York in return for a pair of water-colour sketches which he had ventured to send as a present to the Commander-in-Chief with a letter asking for employment as the son of a Peninsular veteran. These powers he transmitted to one daughter—Lucy Beatrice—who exhibited at the Royal Academy on more than one occasion and was making for herself a reputation as a portrait painter at the time of her tragic death.

The funeral took place at Whitby on Saturday, Jan. 21st. The funeral service was read impressively by the Rev. George Austen, M.A., canon of York and rector of Whitby. There were numerous tokens of regard from his fellow townsmen, the shops along the route of the funeral being nearly all closed, although it was market day.

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### THOMAS FULLER, M.D. ABERD., M.R.C.S. ENG., L.S.A.

Dr. Thomas Fuller died at his residence, Penryn, Wilbury-avenue, Hove, Brighton, on Jan. 13th, at the age of 83. Born at the county town of Lewes in Sussex, he received his medical education at Guy's Hospital, qualifying as M.R.C.S. and L.S.A. in 1851. He obtained his M.D. degree at King's College, Aberdeen, eight years later. Settling at Shoreham he founded a large practice over a wide area of the Steyning Union and held a number of public appointments, among them that of medical officer of the workhouse, surgeon to the Royal Artillery, Shoreham Redoubt, Admiralty surgeon and agent for Shoreham; while at one time he was house surgeon at the Sussex County Hospital, Brighton, and house surgeon at the Brighton Dispensary. He took a very active interest in the public life of Shoreham, which he left some 15 years ago on retiring from medical practice. The funeral took place in Shoreham churchyard on Dec. 18th amid manifestations of the deepest sorrow and regret.

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### BANFIELD TEAGUE VIVIAN, L.S.A. LOND.

Mr. B. T. Vivian died at his residence, Buckshead, Hayle, Cornwall, on Jan. 13th, in his ninetieth year. The deceased, who was the oldest medical practitioner in Cornwall, was the son of the late Dr. John Vivian of Crowan, Cornwall. He received his medical education at the Charing Cross Hospital and Hunter's School of Anatomy, and qualified L.S.A. in 1848. He shortly afterwards joined his father in practice at Crowan. Mr. Vivian was for more than 50 years district medical officer to the Helston Union. He took a great interest in the Volunteer movement and was at one time honorary surgeon to the old 1st Cornwall Volunteer Artillery. Mr. Vivian was a good sportsman and an authority on horticulture. He was unmarried, very popular, and during his 63 years of medical work he was always extremely kind to the poor, by whom he was much beloved. By the death of Mr. Vivian an interesting personality has been removed from Cornwall, for in his time he had a very large and extensive practice.

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DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Karl Friedrich Mosler, who retired from the chair of clinical medicine in the University of Greifswald about a dozen years ago. Soon after qualification, when assistant in the Giessen Medical Clinic, he worked under Professor Leuckart, the eminent zoologist, at human parasitology, and amongst his various writings several of the most noteworthy deal with this subject. He contributed (in conjunction with Dr. Peiper) the article in "Nothnagel's Handbook" on Animal Parasites and that on Diseases of the Spleen in "Ziemssen's Handbook." He was in his eightieth year.—Dr. Wilhelm Koenig, formerly senior physician to the Dalldorf (in Prussia) Lunatic Asylum, from which post he had been obliged to retire some years ago on account of ill-health. His age was 52 years.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated :—

*Surgery*.—M. J. A. Des Ligneris (Sections I. and II.), Berne; and B. W. Loewenberg (Sections I. and II.), Berlin and London Hospital.

*Medicine*.—G. J. F. Elphick (Sections I. and II.), St. Mary's Hospital; B. W. Loewenberg (Section II.), Berlin and London Hospital; and F. G. Norbury (Section I.), Glasgow.

*Forensic Medicine*.—N. S. Adler, Berlin; J. Ellison, Cambridge and St. George's Hospital; and R. G. Maglione, Manchester.

*Midwifery*.—A. J. V. Mathews, St. Mary's Hospital; and H. Rowntree, Middlesex Hospital.

The Diploma of the Society was granted to the following candidate, entitling him to practise medicine, surgery, and midwifery: B. W. Loewenberg.

FOREIGN UNIVERSITY INTELLIGENCE.—*Breslau:* Dr. Lothar Dreyer has been recognised as *privat-docent* of Surgery, and Dr. Walter Oettinger as *privat-docent* of Hygiene.—*Cairo:* Dr. Schmidt, of the Chemical Department of the Medical School, has been granted the title of Professor by the Prussian Government.—*Genoa:* Dr. Pietro Baiardi has been promoted to the chair of Ophthalmology.—*Halle:* Dr. Alfred Denker, Professor in Erlangen, has accepted the chair of Otology in succession to the late Dr. H. Schwarze.—*Jena:* Dr. Bodo Spiethoff, *privat-docent* of Dermatology, and Dr. Wilhelm Strohmayer, *privat-docent* of Psychiatry and Neurology, have been appointed Extraordinary Professors. Dr. Rehn of Königsberg has been recognised as *privat-docent* of Surgery.—*Messina:* Dr. Arturo Donaggio has been promoted to the chair of Neurology and Psychiatry.—*Rostock:* Dr. H. Reinmöller, *privat-docent*, has been appointed Extraordinary Professor of Odontology.—*Stuttgart:* The Veterinary College has been authorised to grant the degree of Doctor of Veterinary Surgery.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Jan. 19th, Sir Francis Champneys being in the chair. The difficulties experienced by local supervising authorities in obtaining convictions under Section 1 (2) of the Midwives Act, 1902, led the Board to suggest to the Privy Council the desirability of amending the Midwives Act, 1902, Section 1 (2), by omitting the words "habitually and for gain," with a view to the more effective administration of the Act. In reply to an inquiry from the medical officer of health of Sheffield as to the extent of a midwife's obligation to visit her patient during the puerperium, the Board stated that it had designedly refrained from making it obligatory on the midwife in every case to attend her patient for ten consecutive days, and that the number of visits required must vary according to the circumstances of each case, the midwife remaining responsible if anything went wrong with the patient owing to the omission of a visit, and that any visit paid by an assistant should not be in substitution for, but in addition to, a visit of the midwife. Letters were considered from the superintendent and the matron of the Government Maternity Hospital, Madras, requesting the Board to hold examinations in Madras. The Board regretted that it was impossible to accede to the application. The Worcestershire county council requested the Board to state the grounds on which it came to the decision to take no further action in the case of a certified midwife against whom the local supervising authority had found a *primâ facie* case of misconduct. Being entirely in sympathy with any endeavour to remove from the Roll the name of a midwife who had been proved to be drunk on duty, the Board regretted as much as the local supervising authority the failure of any such case for want of complete legal proof, but responsibility for the decision in any particular case must remain with the Board alone, and in the case in question the Board, after careful consideration of all the available evidence, came to the conclusion that the charges had not been proved beyond all reasonable doubt. The Devon county council requested the Board to make a rule enabling uncertified women practising as midwives to be granted certificates without examination up to March 31st next. The Board regretted that it could not accede to the request. Dr. J. R. Currie, medical officer of health of Chester, asked the advice of the Board as to taking action against a certified midwife for breaches of the rules. The Board pointed out that it is the duty, under Section 8 (2) of the Midwives Act, 1902, of the local supervising authority and not of the Board to find whether a *primâ facie* case of malpractice, negligence, or misconduct had been established. Sir George Fordham called attention to Clause 7 of the Midwives Bill (No. 2), 1910, and moved a resolution that the Lord President of the Privy Council be asked to receive a deputation from the Central Midwives Board to lay before him the serious objections to this clause of the Bill and the difficulties that must arise if it became law. He contended that the Midwives Roll by this clause would be reduced to an annual list, and that the official machinery for dealing with such annual notification would be very expensive and practically unworkable. Clause 7, relating to proposed annual fee of 1*s*. for keeping a midwife's name on the Roll, is as follows :—

> 7. Every certified midwife shall on or before the thirty-first of January in each year send to the Central Midwives Board on a form to be supplied by the Board for the purpose her name and address, together with a fee of one shilling, and if any certified midwife in any year fails to comply with this requirement her name shall be removed from the roll and thereupon her certificate shall be deemed to be cancelled; but where her name has been so removed on account of such non-compliance she shall at any subsequent time be entitled to have her name restored to the roll and the cancellation of her certificate rescinded on the payment of a fee not exceeding five shillings.

Mr. E. Parker Young moved an amendment to add Clause 11 (1) of the Midwives Bill (No. 2), 1910, to Sir George Fordham's resolution. Mr. Parker Young pointed out that Clause 11 was objectionable because it meant interference with the practice of medical men. Clause 11 (1) of the amending Bill runs as follows :—

> Where a woman certified under the principal Act, who has not given to the local supervising authority such a notice as is mentioned in Section 10 of the principal Act, or a woman not so certified attends any woman in child-birth in any capacity other than that of a midwife, and a duly qualified medical practitioner is not present at the time of the birth, she shall, within forty-eight hours from the birth, give to the local supervising authority notice in writing of the fact that she so attended, and if she omits to do so shall be liable on summary conviction to a fine not exceeding *five pounds*, but nothing in this section shall be construed as exempting any woman practising as a midwife, or holding herself out as so practising, from the obligation to give any notice which, under Section 10 of the principal Act, she is required to give.

The Secretary showed that, to meet the provisions of Clause 7, the staff of the Board would have to be increased and other premises provided, and declared that the clause would seriously cripple the power of the Board. The amendment was lost, and the resolution moved by Sir George Fordham was carried.

PROFESSOR DELEPINE ON BOVINE TUBERCULOSIS.—On Jan. 23rd, at Knutsford, Professor Sheridan Delépine addressed an assembly of farmers on the subject of bovine tuberculosis. He noted the great differences as to the supply of tuberculous milk to Manchester from different districts, varying from 10·5 per cent. of the farms in some districts to 29·7 in others. These farms that produced tuberculous milk were on the whole in a worse condition as to cleanliness than those which did not, but there were striking exceptions, and it was quite clear that cleanliness alone was not a sufficient safeguard. Careful observation tended to show that tuberculous cows "emitting discharges either from the throat or in the form of excreta formed the chief determining factor in the distribution of bovine tuberculosis." Previous to the ulcerative stage the cows were not an active source of danger. But it was necessary that every animal should be inspected and those actively affected removed without delay, and healthy animals should not remain in places which had been used by infected ones. Professor Delépine would reduce as far as possible the number of old animals which were always liable to be the worst affected. The weeding out of tuberculous cows could be done at small cost if it were done while they were under three years old, when they were at their greatest meat value. "At that age, after the slightly affected parts had been removed, the carcass would be perfectly fit for consumption, but at a later age the whole body would probably be condemned at the abattoir, and the loss would be considerable." In the "conquest of consumption" every means must be made use of for preventing the access of tubercle bacilli to the human body, and Professor Delépine is doing good service by endeavouring with such persistent perseverance to close one avenue of

approach. There has been already a great improvement in the milk-supply of Manchester, but the need for watchfulness and care remains as great as ever.

ROYAL SOCIETY OF MEDICINE.—In consequence of the large attendance expected the special general meeting of the Fellows of the Royal Society of Medicine, announced for Tuesday next, Jan. 31st, at 5 P.M., will be held at the Steinway Hall, 15, Lower Seymour-street, London, W.

THE British Institute of Social Service and the Coal Smoke Abatement Society are holding a conference on the "Smoke Evil" at 4, Tavistock-square, London, W.C., on Jan. 30th, at 5 P.M.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. William Henin Christie, the Hastings, St. Leonards, and East Sussex Hospital will receive between £8000 and £10,000.—The Merchant Taylors' Company have voted £1000, payable in annual instalments of £500 each, towards the special fund for the reduction of the capital debt of St. Bartholomew's Hospital.—In connexion with the King's College Hospital Removal Fund, £1000 have been received from Mr. Mortimer Singer for the purpose of naming a bed in the new hospital, and a further £1000 from Mr. F. C. Yates.—Lord Winterstoke has given £5000 towards the cost of the proposed extension of the Bristol General Hospital.

PRESENTATIONS TO MEDICAL MEN.—Mr. T. Gunton Alderton, on his retirement from the post of senior anæsthetist at the West London Hospital after 34 years' service, has been presented by his colleagues on the staff with his portrait, excellently painted by Mr. Edward Mills. The presentation was made by Mr. F. Swinford Edwards at a staff dinner held at the Great Central Hotel, Marylebone. Mr. Alderton is the treasurer and a late president of the West London Medico-Chirurgical Society, a member of the board of management of the West London Hospital, and is professionally associated with several public and philanthropic societies in the Hammersmith district.—A presentation was made at Broughton Astley, Leicestershire, on Jan. 20th, to Mr. E. C. Austin, F.R.C.S. Edin., who is removing from Leicester to Salford. The presentation consisted of an oak bureau and bookcase, and a framed and illuminated address.

THE BROWN DOG.—The case of "the brown dog" was referred to at a meeting of the Battersea borough council on the evening of Jan. 11th. The council was notified that the police precept had been increased by an amount representing ½*d.* in the £. One of the ex-mayors, who took a part in the inauguration of the Brown Dog Memorial, moved that the Commissioners of Police should be asked to reduce the precept by £700. That, he said, was the amount which was stated to have been spent per annum in providing special protection for the brown dog. As the memorial had been removed, of course the £700 were being saved. The motion was seconded by another ex-mayor, who announced that the memorial would have to be restored by the council before very long. Several members pointed out that the cost of special protection was not, as it ought to have been, made a charge on Battersea, but was spread over the whole of London. It would, therefore, be absurd to adopt the proposal. The great majority of the council being of this opinion, the motion was lost.—On the same evening the council decided to adjourn for six months the consideration of the Local Government Board Order authorising metropolitan borough councils to provide a temporary supply of diphtheria antitoxin and temporary medical attendance in connexion therewith for the poorer inhabitants. The subject was much discussed, and the adjournment was opposed for a long time, even by members who are anti-vaccinationists and anti-vivisectionists. Their position was that if there is anything good in antitoxin Battersea ought to have it for Battersea's poor, and ought to have it soon. Mr. S. H. Curry and Mr. J. T. Richards, who are medical practitioners, pointed out that there were dangers connected with the indiscriminate use of antitoxin and that risks attended its injection in dirty rooms. The object of the Local Government Board, Mr. Richards said, was to secure that patients might have the serum earlier than was now the case when they were removed to hospital. Battersea patients, however, could be in hospital within two or three hours after diagnosis. A report on the subject had been prepared by the medical officer of health (Mr. G. Q. Lennane) and had been considered by the health committee. It was decided on Jan. 18th that a copy of the report should be sent to every member of the council.

Dr. Kimmle, general secretary of the Central Committee of the Red Cross in Berlin, has been granted a patent of nobility by the Wurtemburg Government.

A COMMODIOUS children's clinic and sucklings' rearing establishment has been erected at Göttingen at a cost of over £8000 by the parents of Dr. Dreger, who died at an early age, for whose public health he was responsible.

ROYAL METEOROLOGICAL SOCIETY.—The council of the Royal Meteorological Society states that the increased number of applications for lectures on meteorological subjects shows that greater interest is now being taken by the general public in meteorological matters. The researches into the meteorological conditions of the upper atmosphere have been continued under the auspices of the joint committee appointed by the society and the British Association. At the annual meeting held on Jan. 18th, the President, Mr. H. Mellish, said that the completion of the third decade since the society undertook the collection of climatological observations suggested that the moment was opportune for taking stock of the data which had been collected in the British Isles and of the progress which has been made in reducing and discussing them, so he devoted his address to a consideration of the present position of British Climatology. Dr. H. N. Dickson was elected President for the ensuing year.

A NURSING PAGEANT.—The National Council of Trained Nurses of Great Britain and Ireland is planning a pageant, designed by Mrs. Bedford Fenwick, representing the evolution of trained nursing, to be held in the Connaught Rooms, Great Queen-street, London, W.C., on the evening of Saturday, Feb. 18th. The central figure will be Hygeia, goddess of health, supported by the elements, earth, air, fire, and water, and in her train will be the Spirit of Nursing and Science with their attendant attributes. A reception committee has been arranged, including the Lady Helen Munro Ferguson, the Lady Hermione Blackwood, the Dowager Lady Loch, Lady Mackinnon, Lady Beachcroft, Lady Wynne, Mrs. Bedford Fenwick, Mrs. Alec Tweedie, Mrs. Mackenzie Davidson, Mrs. Timbrell Bulstrode, Mrs. Walter Spencer, and a large number of hospital matrons and others interested in the organisation of the nursing profession. Hygeia, the goddess of health, will be impersonated by Miss Irene Fergusson, the Spirit of Nursing will be represented by Miss Audrey Campbell, and Science by Miss Winifred Bridger. Miss M. Mollett has written the masque. All information respecting the pageant, and tickets (reserved seats, 10*s.* 6*d.* and 7*s.* 6*d.*; unreserved seats, 5*s.*; and nurses' tickets, 3*s.* 6*d.*) can be obtained from the pageant secretary, 431, Oxford-street, London, W.

INVALID CHILDREN'S AID ASSOCIATION, BRIGHTON.—To the many agencies that are at work in Brighton and the sister town of Hove on behalf of the poor children another has now to be added—viz., the Invalid Children's Aid Association, which has just completed the first year of its existence. Its objects are to visit and care for the crippled, invalid, and delicate children of the poor; to provide medical advice with special treatment and food if necessary, surgical apparatus, chairs, &c., admissions to hospitals, convalescent homes, and country cottages; and to seek to ameliorate the conditions and brighten the lives of sick and suffering children in the two towns. During the year 110 children were visited and their names will remain on the books until the visitors are satisfied that all has been done that is possible; and thanks to the medical officer of health of Brighton, Dr. Duncan Forbes, several cases which came under the notice of the association were admitted to the sanatorium for treatment of tuberculosis in the bones and joints. The association expects the parents to pay their share in the expenses according to the means at their disposal. The movement is receiving considerable support, and in the first 12 months of its existence has done a beneficent work. Bearing in mind the many kindred organisations that are at work in Brighton and Hove, it certainly cannot be said of these towns that they are behindhand in their endeavours to improve the race.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DAVIES, T. B., M.B., B.S. Lond., has been appointed House Surgeon at University College Hospital.

HAVELOCK, SYDNEY, M.B., B.S. Durh., D.P.H., has been appointed Second Assistant Medical Officer to the Newcastle Education Committee.

HERRING, J. F., L.R.C.P. & S. Edin., has been appointed Medical Officer and Public Vaccinator to the Atherstone Union and Medical Officer of Health for the Atherstone Rural District Council.

HIGGS, FREDERICK W., M.B. Lond., M.R.C.P. Lond., has been appointed Physician to In-Patients at the Belgrave Hospital for Children.

MCCULLY, D., M.R.C.S., L.R.C.P. Lond., has been appointed Obstetric Assistant at University College Hospital.

MACILWAINE, J. E., M.D., Ch.B. R.U.I., D.P.H., has been appointed House Physician to the Royal Victoria Hospital, Belfast.

MCKAY, ROBERT, L.R.C.P. Lond., M.R.C.S., L.D.S., has been appointed Dental Surgeon to St. Thomas's Hospital.

MORRIS, C. W., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

NICOLL, AGNES M., M.B., Ch.B. St. And., D.P.H. Manch., has been appointed Junior Resident Medical Assistant at the Dundee East Poorhouse and Hospital.

PARKER, R. P., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Superintendent Medical Officer of Oldham Workhouse.

PRICE, L. E., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Nuneaton District of the county of Warwick.

STRAIN, THOMAS, M.D. Glasg., D.P.H. Camb., has been appointed Medical Officer of Health and Medical Superintendent of the Isolation Hospital of the Urban District of Barnes.

WALKER, W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Mid-Calder District of the county of Edinburgh.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ABERDEEN POORHOUSE.—Senior Resident. Salary £200 per annum, with board.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, &c.

BIRKENHEAD UNION INFIRMARY AND SANATORIUM.—Senior Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BIRMINGHAM CITY HOSPITAL, Lodge-road.—Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, lodging, and washing.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon. Salary £100 each per annum. Also One Obstetric and Ophthalmic House Surgeon, and One Throat, Nose, and Ear House Surgeon. Salary £75 each per annum. Also Casualty Officer for six months. Salary £50 per annum. Apartments, board, and laundry are provided.

CAPETOWN, SOMERSET HOSPITAL.—Two Assistant Medical Officers. Salary £200 per annum, with rations and quarters.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

CHESHIRE EDUCATION COMMITTEE.—Third Assistant Medical Inspector of School Children. Salary £350 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, washing, and residence.

DAVOS, QUEEN ALEXANDRA SANATORIUM.—Junior Pathologist and Bacteriologist.

DELAMERE FOREST, CHESHIRE, CROSSLEY SANATORIUM.—Assistant Medical Officer. Salary £100 per annum, with board, apartments, and laundry.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £75 per annum, with residence, board, and washing.

DUNBARTON COUNTY SECONDARY EDUCATION COMMITTEE.—Two Medical Inspectors of School Children. Salary £300 per annum.

ECCLESALL BIERLOW UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary £150 per annum, with board, washing, and apartments.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Surgeon for five months. Salary at rate of £60 per annum, with board, residence, and washing.

GRAVESEND HOSPITAL, KENT.—House Surgeon. Salary £100 per annum, with board and residence.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator. Salary £110 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Honorary Dental Surgeon.

LEITH HOSPITAL.—Medical Registrar.

LINCOLN COUNTY HOSPITAL.—Senior House Surgeon, unmarried. Salary £125 per annum, with board, lodging, and washing.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Pleasant.—Assistant Medical Officer and Pathologist. Salary £200 per annum.

LIVERPOOL INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and washing.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board, residence, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80, with board and residence.

MANCHESTER, CHORLTON-ON MEDLOCK DISPENSARY.—Resident House Surgeon, unmarried. Salary £120 per annum, with rooms and attendance.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—House Surgeon. Salary £100 per annum, with residence, board, and washing.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland-street, W.—Anæsthetist.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Physician and Junior House Surgeon, both unmarried and for six months. Salary in each case at rate of £80 per annum, with board, &c.

PARK HOSPITAL FOR CHILDREN, Hither Green, S.E.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Pathologist. Salary £50 per annum. Also Honorary Anæsthetist once a week. Salary £20 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

RAINHILL COUNTY ASYLUM, near Liverpool.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Medical Officer in Charge of Department for X Rays and Electro-therapy. Salary at rate of £60 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum, with board and residence.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Honorary Medical Registrar.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board and lodging.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Broughton Astley, in the county of Leicester.

# Births, Marriages, and Deaths.

## BIRTHS.

EWENS.—On Jan. 20th, at West Chase, Maldon, Essex, the wife of Henry L. Ewens, M.D., of a son.

GARDINER.—On Jan. 15th, at Dunmow, Essex, the wife of J. Napier Gardiner, M.D., of a daughter.

HOVENDEN.—On Jan. 15th, at Compton Lodge, East Sheen, S.W., the wife of Arthur C. Hovenden, M.B., B.S. Lond., of a son.

MARRIAGE.—On Jan. 23rd, at 109, Harley-street, W., the wife of H. J. Marriage, M.B., B.S. Lond., F.R.C.S. Eng., of a son.

NEWINGTON.—On Jan. 18th, at The Croft, Edenbridge, Kent, the wife of C. W. H. Newington, M.R.C.S., L.R.C.P., of a son.

## MARRIAGES.

IRWIN—SINCLAIR.—On Jan. 17th, 1911, at Fitzroy Church, Belfast, by the Rev. William Colquhoun, B.A., assisted by the Rev. Charles Davey, B.A., Samuel Thompson Irwin, M.B., M.Ch., F.R.C.S., Belfast, son of John Irwin, Bovally, Limavady, to Mary Jemima (May), only daughter of the late A. W. Sinclair, J.P., Newry, and Mrs. Sinclair, 1, Wellington Park-terrace.

## DEATHS.

MELLAND.—On Jan. 17th, at Victoria Park, Rusholme, Manchester, Frederick Melland, M.R.C.S., L.S.A., in his 93rd year.

POWER.—On Jan. 18th, at Bagdale Hall, Whitby, Yorkshire, Henry Power, M.B. Lond., F.R.C.S. Eng., in his 81st year.

TYRRELL.—On Jan. 20th, at "Claremont," Malvern, Walter Tyrrell, M.R.C.S., L.S.A., aged 79 years.

VEASEY.—On Jan. 17th, at Aspley Guise, Beds, Henry Veasey, F.R.C.S., aged 92 years.

VULLIAMY.—On Jan. 23rd, after a short illness, Justin Theodore Vulliamy, M.R.C.S., aged 42 years.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## A DIABETES CURE.

A CORRESPONDENT recently submitted to us a diabetes cure with the request to have it examined. He was called to see a patient who had been taking it. She was unstable on her legs, excited, and had dilated pupils—symptoms which she attributed to the nostrum. It evidently consisted of the dried leaves of some herb. Submitted to analysis in THE LANCET Laboratory no alkaloid could be found, but there was a decided amount of tannin present and an aromatic oil. The curator of the Museum of the Pharmaceutical Society of Great Britain, Mr. E. M. Holmes, F.L.S., F.E.S., kindly examined the "remedy." He expressed the opinion that it was Polygonum hydropiper, L., commonly known as water pepper. The fruits of Polygonum were, he states present, and although the few perfect leaves evident would do either for the spiral leaves of P. hydropiper or for the ordinary leaves of P. aviculare, the herb had the biting taste characteristic of water pepper. P. hydropiper is used for dropsy and P. aviculare for difficulty of passing urine, so that both would appear to have some action on the kidneys. According to W. T. Fernie, M.D. ("Herbal Simples"), the water pepper, or arsmart, grows abundantly by the sides of lakes and ditches in Great Britain. It bears a vulgar English name signifying the irritation which it causes when applied to the fundament; and its French sobriquet, *culrage*, conveys the same meaning:—

"An erbe is the cause of all this rage
In our tongue called culrage."

"Fleas will not come into rooms where this herb is kept. It is used for curing proud flesh in the sores of animals, and the leaves serve the purpose of a mustard poultice. A piece of the plant may be chewed to relieve toothache, as well as to cure small ulcers of thrush in the mouth. It has been used in jaundice and cholera. Another polygonum, the great bistort, is strongly astringent, and has been used for a spongy state of the gums." The packet containing the remedy bore the inscription "Van Veen and Co., Import van China and Japan, Amsterdam," and also an inscription written in Chinese characters.

## DEVONSHIRE SUPERSTITIONS.

THE *Bristol Times and Mirror* states that in some parts of Devonshire a mother believes that if she imprisons a live spider in a nutshell and ties it round her infant's neck when the child is suffering from whooping-cough, that the disease will disappear when the spider dies. This newspaper remarks that a little girl went to a Tiverton shopkeeper and said to him, "Will you please give mother a nut to put a spider in, as baby's got the whooping-cough."

## THE EASY SALE OF PISTOLS.

THE ease with which the sale of pistols may be conducted without compliance with the provisions of the Act of Parliament which is supposed to regulate such transactions was exemplified recently in a prosecution at the Guildhall police court. The police at Canterbury found there a man in possession of a revolver and cartridges without a licence or permit to carry firearms. He was a perfectly respectable man, and he gave the police full information as to how and where he purchased the revolver in London, with the result that proceedings were taken against Ernest Reeves, an assistant in the Anglo-Saxon Motor and Cycle Company, of Newgate-street. It was proved that the purchase was made without any of the prescribed formalities being observed at a branch establishment of the firm named, the defendant alleging that the customer came to see the goods, which had been obtained expressly for him from the head office, on Christmas Eve, just before closing-time; that he said he would take them with him, and that in the pressure of business he was allowed to do so, instead of being referred to the Newgate-street establishment as intended by the defendant. An awkward circumstance for the defendant to explain was the fact that the bill given to the purchaser contained no mention of a revolver, the sum paid being described as for repairing a gun. This he sought to explain as a slip due to copying a similar entry of "repair gun" made already on the same day in the day-book. A fine of £5 was inflicted with the alternative of a month's imprisonment, the Alderman expressing regret that he could not make the punishment four times as heavy.

## APT HOSPITALITY.

THE annual dinner to the coachmen and chauffeurs in the employ of medical men in Leicester took place at the De Montfort Hotel, Leicester, on Saturday, Jan. 21st. A hearty vote of thanks was passed to the medical men of the town for providing the necessary funds.

THE Council of the Chelsea Hospital for Women states, for the information of any that may receive unauthorised appeals, that it has discontinued the use of collecting boxes outside the hospital precincts.

*E. C. A.* will find the answer to his question not very clearly given in the Medical Acts. The representation by an unqualified person that he is a duly registered practitioner is punishable.

ERRATUM.—In our issue of Jan. 21st, p. 148, by a printer's error, Mr. R. F. Mann was referred to as photographer and assistant in the electrical department of the Willesden Hospital, instead of the *Middlesex* Hospital.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

**THE following Congresses, Conferences, and Exhibitions are announced for 1911:—**

**Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.**
**March 2nd–6th (Berlin).—Thirty-second Balneological Congress.**
**,, 23rd (Paris).—First Congress of French Medical Journalists.**
**April (Berlin).—German Surgical Congress. (Thirty-ninth Annual Meeting.)**
**April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.**
**April 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.**
**,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.**
**,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.**
**May 30th (The Hague).—International Congress on Opium.**
**May (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)**
**May–October (Dresden).—International Hygiene Exhibition.**
**May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)**
**May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.**
**June (Paris).—First Congress of the International Medical Association for the Prevention of War.**
**,, (Los Angeles, Cal.).—American Medical Association.**
**June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.**
**June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.**
**July (Birmingham).—British Medical Association.**
**July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.**
**August 15th–21st (Dublin).—Royal Institute of Public Health.**
**,, 30th–Sept. 6th (Portsmouth).—British Association.**
**August or September (Berlin).—Third International Laryngo-Rhinological Congress.**
**September (Brussels).—Exhibition of Fractures.**
**,, (Turin).—International Congress of Pathology.**
**,, (Genoa).—International Exhibition of Marine Hygiene.**
**September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.**
**Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Goutles de Lait*).**
**,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.**
**,, 18th–23rd (Sydney).—Australasian Medical Congress.**
**,, 18th–24th (Turin).—Fourth National Congress of Hygiene.**
**,, 24th–30th (Rome).—International Congress on Tuberculosis.**
**,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.**
**October (Cologne).—International Congress of Criminal Anthropology.**
**Oct. 1st–4th (Liége).—Second Congress of Alimentation.**
**Dec. 4th–9th (Havana, Cuba).—American Public Health Association.**
**(Date not fixed) (Montreal).—Canadian Medical Association.**
**(Date not fixed) (Rome).—International Exhibition of Social Hygiene.**
**(Date uncertain) (Turin).—International Exhibition of Industry and Labour.**

**In 1912:—**
**Spring (London).—Second Optical Convention.**
**July (?) (Cologne).—International Congress of Nurses.**
**September (Prague).—International Congress of Radiology and Medical Electrology.**
**September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.**
**,, Visit of German Medical Men to America.**
**Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.**

**In 1913:—**
**(London).—Seventeenth International Congress of Medicine.**
**(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)**
**(Dresden (?)).—International Conference on Cancer.**
**(Washington).—Congress of American Physicians and Surgeons.**
**August (Buffalo).—Fourth International Congress of School Hygiene.**

**In 1914:—**
**(Vienna).—Third International Congress for Professional Diseases.**

**In 1915:—**
**(London).—International Prison Congress.**
**(London).—Imperial Exhibition (?)**

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

A SPECIAL GENERAL MEETING OF FELLOWS OF THE SOCIETY will be held at Steinway Hall, Lower Seymour-street, W.: at 5 P.M.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos street, W.: at 8 P.M.

*Discussion:*

On the Indications for, and Technique of, Cæsarean Section, and its Alternatives in Women with Contracted Pelves, who have been Long in Labour and Exposed to Septic Infection (opened by Dr. Amand Routh). The following gentlemen will take part:—Dr. Hastings Tweedy, Dr. Briggs, Dr. Edge, Dr. Fitzgerald, Dr. Arnold Lea, Dr. H. Spencer, Dr. Rayner, Dr. Lewers, Dr. Ernest Shaw, and Dr. Gow.

The Discussion will be continued on the following day.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.

*Cases and Specimens:*

By Dr. William Hill, Mr. F. Rose, Dr. L. H. Pegler, Mr. H. Tilley and others.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION, at 11, Chandos-street, W.: at 8 P.M.

*Discussion* (continued from Thursday):

The following gentlemen will take part:—Dr. Maxwell, Dr. Munro Kerr, Dr. Herman, Dr. Lloyd Roberts, Mrs. Scharlieb, Dr. A. W. Wallace, Dr. A. W. Russell, Dr. H. Roberts, Dr. Eden, Dr. S. Cameron, and the President (Dr. Macnaughton-Jones).

SECTION OF ANÆSTHETICS (Hon. Secretaries—R. W. Collum, Mrs. Dickinson Berry): at 8.30 P.M.

Dr. McCardie: Death during Anæsthesia.
Mr. Gill: Anæsthesia in Post-pharyngeal Abscess.
Dr. Blumfeld: Reflex Effects from Stimulation of the Nasal Mucous Membrane during Anæsthesia.
Dr. Hughes: Cheyne-Stokes Respiration during Anæsthesia.
Mr. Coleman: A New Form of Stop-cock for Gas and Air Administration.

**NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.**

THURSDAY.—4.15 P.M., Clinical Cases.

**WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital.**

FRIDAY.—8 P.M., Pathological Exhibits will be shown.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.**

WEDNESDAY.—5 P.M., Prof. F. W. Edridge-Green: Colour Vision and Colour Blindness—The Theory and Facts of Colour Vision and Colour Blindness (Hunterian Lecture).

FRIDAY.—5 P.M., Prof. F. W. Edridge-Green: Colour Vision and Colour Blindness—The Detection of Colour Blindness from a Practical Point of View (Hunterian Lecture).

**UNIVERSITY OF LONDON** (ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.).

THURSDAY.—5 P.M., Mr. R. H. Burne: Comparative Anatomy of the Internal Ear.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. J. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. P. Kidd: Some Affections of the Mediastinum.
TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. H. Stoddart: On Nervous Exhaustion.
WEDNESDAY.—4 P.M., Mr. C. A. R. Nitch: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. L. Mummery: Piles, their Pathology and Treatment.
THURSDAY.—4 P.M., Mr. E. L. Evans: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. E. Squire: Bronchitis.
FRIDAY.—4 P.M., Mr. H. Tilley: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine (Lecture III.).

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. Jones: Preventible Insanities.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: Extraction of Teeth, When and How to Extract.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery (Lecture III.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Bernstein: Clinical Pathology.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 2.30 P.M., Operations. 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. F. Trewby: Obstruction to Free Respiration and its Influence on Anæsthesia.
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Polioencephalo-myelitis.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. Ormerod.

**HOSPITAL FOR SICK CHILDREN** (UNIVERSITY OF LONDON), **Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Torticollis; Congenital Affections of the Upper Extremity; Obstetric Paralysis. (Special Post-Graduate Course.)
THURSDAY.—4 P.M., Demonstration—: Dr. Colman: Medical Cases.
FRIDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Kyphosis; Lordosis; Neurotic Spine; Pigeon-toe (Special Post-Graduate Course.)

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.**

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Fungous Diseases of the Hair—I., Hyphogenic Sycosis; II., Tinea.

**ANCOATS HOSPITAL, Manchester.**

THURSDAY.—4.15 P.M., Dr. C. H. Melland: Some Features of Heart Disease. (Post-Graduate Clinic.)

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (30th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY (31st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY** (4th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

**At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.**

**The following journals, magazines, &c, have been received:**—International Journal of Surgery, Bulletin de l'Académie de Médecine, Public Health Reports of the Marine Hospital Service, U.S.A., Birmingham Medical Review, Annual Medical Report to the Hampshire County Council, Allgemeine Medizinische Central-Zeitung, La Semana Médica, Revue de Chirurgie, Revue de Médecine, Asylum News, Review of Neurology and Psychiatry, Transactions of the Society of Tropical Medicine and Hygiene, British Journal of Dental Science, The Journal of Laryngology, Journal of Anatomy and Physiology, The Eugenics Review, London Hospital Gazette, Centralblatt für Allgemeine Pathologie und Anatomie, Allgemeine Wiener Medizinische Zeitung, American Journal of Surgery, Gazette des Hôpitaux, Electrical Engineer, Journal of Tropical Medicine and Hygiene, Symon's Meteorological Magazine, Dublin Journal of Medical Science, American Journal of Obstetrics, The St. Paul Medical Journal, Indian Medical Record, Gazzette Degli Ospedali, Uric Acid Monthly, Indian Public Health, The Quarterly Bulletin of Northwestern University School, Chicago, New York Medical Journal, Revue Clinique d'Andrologie et de Gynécologie, Electrical Review, Science Progress.

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*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

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VOLUMES for the second half of the year 1910 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Jan. 25th, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Jan. 19 | 30·64 | W. | ... | 43 | 41 | 40 | 39 | 40 | Overcast |
| ,, 20 | 30·55 | W. | ... | 43 | 42 | 35 | 36 | 36 | Foggy |
| ,, 21 | 30·29 | W. | ... | 40 | 40 | 35 | 39 | 39 | Overcast |
| ,, 22 | 30·34 | S.W. | ... | 41 | 41 | 37 | 38 | 39 | Overcast |
| ,, 23 | 30·37 | S. | 0·07 | 43 | 42 | 37 | 38 | 38 | Overcast |
| ,, 24 | 30·39 | S.W. | ... | 63 | 47 | 35 | 36 | 36 | Foggy |
| ,, 25 | 30·26 | S.W. | ... | 56 | 51 | 36 | 43 | 45 | Overcast |

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# The Hunterian Lectures

ON

# COLOUR VISION AND COLOUR BLINDNESS.

*Delivered before the Royal College of Surgeons of England on Feb. 1st and 3rd, 1911,*

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.,

BEIT MEDICAL RESEARCH FELLOW.

## LECTURE I.

*Delivered on Feb. 1st.*

GENTLEMEN,—Colour blindness is not a good name for the condition to which it is applied, and still worse is the use of the term red blindness or green blindness. In the majority of cases of colour blindness there is no blindness to colours in the ordinary acceptation of the term; a green, red, or yellow light produces a very definite sensation of colour. Those who confuse red and green do so, not because they see red as green or green as red, but because both give rise to a similar sensation of colour. The word light must be used in the sense of referring to those waves which excite the organ of vision. Because two stimuli excite a sensation of light it does not follow that they are similar. We cannot, for instance, distinguish by the eye polarised light from non-polarised light. We have to distinguish between the physical stimuli by their physical properties apart from their effect on the organ of vision. I propose to divide the subject into two parts and in this lecture to deal with the theory and facts of colour-vision and colour blindness, and in the second lecture with the detection of colour blindness from a practical point of view.

### I.—THE THEORY AND FACTS OF COLOUR VISION AND COLOUR BLINDNESS.

The following is the theory which I have propounded in order to explain vision and colour vision. A ray of light impinging on the retina liberates the visual purple from the rods and a photograph is formed. The rods are concerned only with the formation and distribution of the visual purple, not with the conveyance of light impulses to the brain. The ends of the cones are stimulated through the photo-chemical decomposition of the visual purple by light (very probably through the electricity which is produced), and a visual impulse is set up which is conveyed through the optic nerve fibres to the brain. The character of the stimulus differs according to the wave-length of the light causing it. In the impulse itself we have the physiological basis of the sensation of light, and in the quality of the impulse the physiological basis of the sensation of colour. The impulse being conveyed along the optic nerve to the brain stimulates the visual centre, causing a sensation of light, and then passing on to the colour-perceiving centre causes a sensation of colour. But though the impulses vary in character according to the wave-length of the light causing them, the retino-cerebral apparatus is not able to discriminate between the character of adjacent stimuli, not being sufficiently developed for the purpose. At most seven distinct colours are seen, whilst others see in proportion to the development of their colour-perceiving centres only six, five, four, three, or two. This causes colour-blindness, the person seeing only two or three colours instead of the normal six, putting colours together as alike which are seen by the normal sighted to be different. In the degree of colour blindness just preceding total only the colours at the extremes of the spectrum are recognised as different, the remainder of the spectrum appearing grey. Though my own opinion is that the ordinary form of congenital colour-blindness is caused by a defective development of the portion of the brain whose function is the perception of colour we must not exclude any portion of the retino-cerebral apparatus, defect of which would have exactly the same result. It will be noticed that the theory really consists of two parts, one concerned with the retina and the other with the whole retino-cerebral apparatus. I shall in these lectures use the word cerebral in this sense. I am not aware of a single fact which does not support this theory, and I have used it to predict facts which have subsequently been rediscovered by others and now form a part of our common knowledge.



THE VISUAL PURPLE THE ESSENTIAL FACTOR IN VISION.

I will now state very briefly the evidence which supports the view that the visual purple is the essential factor in the retina which enables it to transform light into visual impulses.

1. *Anatomical.*—In the fovea of the retina only cones are to be found. Immediately external to this each cone is surrounded by a ring of rods. The number of rings of rods round each cone increases as the periphery is reached. The outer segments of the cones are situated in a space which is filled with fluid. The external limiting membrane retains this fluid in its place. I find [1] four depressions or canals which lead into the larger depression of the external fovea. These canals appear to have smaller branches and serve to conduct the visual purple into the part of most acute vision. The cones which are present in the fovea have very long outer segments which would present a greater surface for photo-chemical stimulation. The visual purple is only to be found in the rods and not in the cones. I determined to ascertain whether the visual purple could be seen between the cones in the fovea. I have examined under the microscope the retinas of two monkeys which had been kept previously in a dark room for 48 hours. The yellow spot was the reddest part of the whole retina, and the visual purple was seen to be between and not in the cones.[2]

2. *Physiological analogy with other body cells.*—It is far more probable that the rods should produce a secretion which would affect other cells rather than themselves. The liver cells do not form bile in order to stimulate themselves, and the internal secretions are produced to affect other parts of the body. I am not aware of a single instance in which a cell produces a secretion which has the function of stimulating the cell producing it. The visual purple is regenerated in the rods by the pigment cells in connexion with them.

3. *The relation between the foveal and the extra-foveal regions.*—As the fovea only contains cones, if any of the older theories of the relative functions of the rods and cones were true, we should expect to find qualitative differences between the foveal and extra-foveal regions. This is not the case, but, as we should expect, if the visual purple were the visual substance all the phenomena which have been attributed to the visual purple should be found in the fovea. Von Tschermak, Hering, Hess, Garten, and others have found the Purkinje phenomenon, the variation in optical white equations by a state of light and dark adaptation, the colourless interval for spectral lights of increasing intensity, and the varying phases of the after-image in the fovea only gradually diminished.

4. *The varying sensibility of the fovea.*—The fovea is in some conditions the most sensitive part of the whole retina and with other conditions the least. Helmholtz has recorded some of these facts and regarded them as quite inexplicable. We have, however, an easy explanation of the facts on the assumption that when there is visual purple in the fovea this is the most sensitive part of the whole retina, but when there is none there time must elapse before it can diffuse into the spot and in the meantime it is insensitive to light. I have devised several experiments which show the visual purple flowing into the foveal region. The following simple experiment shows this very well. If on awaking in the morning the eyes be directed to a dull white surface, as, for instance, the ceiling, the region of the yellow spot will appear as an irregular black spot and light will appear to invade this spot from without inwards. If the eyes be now closed and covered with the hands purple circles will form round the centre of the field of vision and gradually contracting reach the centre. When the circle reaches the centre it breaks up into a star-shaped figure and becomes much brighter. It then disappears and is followed by another contracting circle. Now it will be noticed that if one eye be opened when the circle has broken up, a brilliant rose-coloured star much brighter than any other part will be seen in the centre of the field of

[1] Journal of Physiology, vol. xli., p. 274.
[2] Transactions of the Ophthalmological Society, 1902, p. 300.

vision. This has the exact hue of the visual purple. If we wait until the star has disappeared before opening an eye the macular region appears as a black spot as before. This conclusively shows that the central portion of the retina is sensitised from the peripheral portions.

5. *Chemical analogy.*—The visual purple gives a curve which is very similar to that of many other photo-chemical substances. We know that with photo-chemical substances the chemical effect is not proportional to the intensity of the light. That is, a different curve is obtained with weak light from that which is formed with light of greater intensity. It is reasonable, therefore, to suppose that the visual purple which is formed by the pigment cells under the influence of a bright light would be somewhat different in character from that which is formed in darkness. Again, from the chemical analogy which I have just given, even if the visual purple were of the same character, we should not expect similar curves with different intensities of light. It is probable that both factors are in operation. This deduction gives an explanation of the Purkinje phenomenon, or the fact that when the eyes are adapted to darkness the point of greatest luminosity is shifted more towards the violet end of the spectrum. Some dichromics who have shortening of the red end of the spectrum have a luminosity curve which is very similar to that of a normal-sighted person with a spectrum of lesser intensity. We have only to assume in these cases either that the receiving nervous apparatus is less responsive or that the visual purple formed at one intensity of light is similar to that formed at a lower intensity by a normal-sighted person. We also have an explanation of other conditions, such as erythropsia or red vision, white objects appearing more or less red. If we suppose that the eye has remained in a state of light adaptation, the visual purple produced being more sensitive to the red rays, objects appear of this colour. As we should expect, erythropsia is frequently associated with hemeralopia, or difficulty in seeing in the twilight, the eyes being adapted to light and not to darkness. In green vision the eyes have probably remained in a condition of more or less adaptation to darkness, and are therefore more sensitive to the green rays.

6. *Disappearance of lights falling upon fovea.*—If the cones are not sensitive to light a ray of light falling upon the fovea alone and not upon the adjacent portion of the retina containing rods should produce no sensation of light, provided that there is not already any visual purple in the fovea. It has been known to astronomers for a long time that if a small star in a dark portion of the sky be steadfastly looked at it will disappear from view, whilst other stars seen by indirect vision remain conspicuously visible. The following simple experiment shows the same thing. If a piece of black velvet about three feet square on a door have a pin put in the centre, and the source of light be behind the observer, the pin will be brightly illuminated; and on looking at it (the observer not being too close) and keeping the eye quite still the pin will disappear, the visual substance diffused into the fovea centralis being used up and not renewed. When viewed by indirect vision it is impossible to make it disappear in this way. When I have taken great care to have very dark surroundings and have used only one eye I have made moderately bright lights disappear in this manner. These facts have been attributed to a defective sensibility of the fovea for feeble light. The important point, however, that the light is at first most clearly seen by the fovea and only subsequently fades has been overlooked. If these facts were due to a defective sensibility of the fovea the star or light would not be visible at first.

7. *Illusion of moving light.*—If a small light be looked at fixedly in a dark room it will appear to move until it comes apparently so close that it could be grasped. The reason of this is that the eye moves so that the light falls upon a more peripheral part of the retina. I find that the movement takes place as if some photo-chemical substance acted under the influence of gravity. For instance, when standing the light appears to travel upwards; resting the head on one side it appears to travel in the opposite direction. The light appears as if we were looking straight at it and the eye which is covered up remains directed straight at the object. When the second eye is opened two images of the light are seen and the image which is seen with the periphery of the first eye rapidly coalesces with that seen directly by the second eye.

8. *Purple after-image.*—A positive after-image of a purple (rose) colour can be obtained after white light or any spectral colour. It will be noticed that when there is little light during the subsequent observation the colour of an after-image inclines to blue or green, when there is more light towards purple or red.

9. *Currents seen in the field of vision not due to the circulation.*—It occurred to me that if there were canals in the retina which promoted the easy flow of the visual purple into the fovea we ought to obtain evidence of the currents flowing along these channels entoptically. I found that this was the case and that the currents could be seen in numerous ways.[3] If one eye be partially covered with an opaque disc whilst both eyes are directed forwards in a not too brightly illuminated room and special attention be paid to the covered eye an appearance of whirling currents will be seen with this eye. These currents appear to be directed towards the centre and have a very similar appearance to a whirlpool which is fed by four main branches. These, again, are fed by smaller branches which continually change their paths. On closing both eyes all the portion in which the whirling currents are seen appears as dull purple. These currents cannot be due to vessels, because we know that the centre of the retina corresponding to the point where the greatest movement is seen is free from vessels. The appearance is also very different from that of the movement of blood in vessels. The currents can also be seen in the light, in the dark, through yellow-green glass, and with intermittent light. The main branches form a star-shaped figure with four rays. The currents carry the visual quality, colour, and brightness from whence they come into an after-image. They also tend to move an after-image towards the centre. The currents behave as if they ran in definite channels, but could also overrun, on any further stimulus, the banks of the channels. For instance, a thin bright line with a little more light appears as a broad band and the central star figure will enlarge into a rhomboid, oval, or disc. Movements of the eyes affect the broad currents in the outer part of the field of vision.

10. *Pressure figure.*—Pressure on the front of the eye causes the star-shaped figure to be seen, and this changes into a rhomboid with a little more pressure.

11. *Macular star.*—It occurred to me that we ought to obtain evidence of the canals in the retina in cases where the outflow from the retina is obstructed as by tumour. I find this is the case; the star-shaped figure given by Sir Victor Horsley in his paper on Tumour of the Frontal Lobe[4] is almost exactly the same as that seen subjectively.

12. *Entoptic appearance of cone mosaic.*—Appearances corresponding to the cone mosaic of the retina may be seen in several ways.[5] The appearance seen corresponds to the cone distribution of the retina as viewed from its outer side, the portions occupied by rods appearing as dark spaces.

13. *Visual acuity.*—Visual acuity is most acute with the fovea and diminishes from within outwards. It corresponds very fairly with the cone distribution of the retina. On the other hand, there is not one single fact which points to the rods as being light sentient organs. This is well recognised by those best qualified to judge.[6]

I could give many more facts in support of the view that the visual purple is the visual substance, and I have not yet had brought to my notice any fact which is not readily explicable on that hypothesis. There may be other photo-chemical substances in the retina, but there is not the slightest evidence that such is the case. I regard the visual purple as the sole visual substance. We could, of course, split the visual purple into innumerable simpler photo-chemical substances, each of which has its own absorption curve, having its maximum in some particular part of the spectrum. It is difficult to say at present exactly how the visual purple acts as a stimulus transformer, but this is because so many plausible hypotheses immediately occur to us. It is very probable that light acting upon the visual purple, is, according to its wave-length, absorbed by particular atoms or molecules, the amplitude of their vibrations being increased. These vibrations may cause corresponding vibrations in certain discs of the outer segments of the cones, which seem especially constructed to take up vibrations. We know that when light falls on the

[3] Journal of Physiology, vol. xli., p. 269.
[4] Brit. Med. Jour., p. 556, 1910.
[5] Journal of Physiology, vol. xli., p. 266.
[6] Nagel: Physiologie des Menschen, vol. iii., p. 107.

retina it causes an electric current. We know how the telephone is able through electricity to convey waves of sound, and something similar may be present in the eye, the apparatus being especially constructed for vibrations of small wave-length. The current of electricity set up by light may cause the sensation of light and the vibrations of the atoms or molecules the sensation of colour.

In all vital processes there is a condition of katabolism or chemical change in the protoplasm and an anabolic or building-up process, in which the protoplasm is restored to its normal state. We have therefore to consider two definite processes in the visual purple—namely, a breaking down of the visual purple photo-chemically by light and its restoration by the pigment cells and rods. Under ordinary conditions of light and during the whole of the day-time the visual purple is continually being bleached and re-formed. It is obvious, therefore, that when the eye has been kept in the dark and is then exposed to light, an observation taken immediately will not be comparable with one taken a few seconds afterwards, because in the first observation we have only to consider the katabolic change, whilst in the second observation the anabolic change has to be considered as well, as the visual purple has to be reformed for subsequent seeing. There appears to be very little evidence in ordinary circumstances of this anabolic process; for instance, if we fatigue the eye with sodium light in a dark room, and then immediately examine a spectrum, we find that though all the yellow has disappeared there is no increase in the blue—in fact, the blue seems rather diminished than otherwise. Again, there is not the slightest diminution in either the red or green, showing conclusively that yellow cannot be a compound sensation made up by a combination of red and green. We must therefore explain in another way the apparent trichromatism of normal colour vision, which is so well known to every photographer, especially those who are concerned with colour photography. If my theory of the evolution of the colour-sense be the correct one and we have cases of colour-blindness corresponding to every degree of the evolutionary process, we have an explanation of the facts. In past ages all saw the rainbow made up of only three colours—red, green, and violet. When a new colour (yellow) appeared between the red and green, it is obvious that a mixture of red and green would give rise, not to red-green, but to the colour which had replaced it—namely, yellow. The retina, therefore, corresponds to a layer of photo-chemical liquid in which there are innumerable wires each connected with a galvanometer. When light falls upon a portion of this fluid the needle of the galvanometer corresponding to the nearest wire is deflected. The wires correspond to the separate fibres of the optic nerve, and the galvanometers to the visual centres of the brain.

Cases of colour-blindness may be divided into two classes, which are quite separate and distinct from each other, though both may be present in the same person. In the first class there is light as well as colour loss. In the second class the perception of light is the same as the normal sighted, but there is a defect in the perception of colour. In the first class certain rays are either not perceived at all or very imperfectly. Both these classes are represented by analogous conditions in the perception of sounds. The first class of the colour-blind is represented by those who are unable to hear very high or very low notes. The second class of the colour-blind is represented by those who possess what is commonly called a defective musical ear. Colour-blind individuals belonging to this class can be arranged in a series. At one end of this series are the normal sighted, and at the other end the totally colour-blind. The colours appear at the points of greatest difference, and I have classified the colour-blind in accordance with the number of colours which they see in the spectrum. The normal sighted may be designated hexachromic; those who see five colours, pentachromic; those who see four, tetrachromic; those who see three, trichromic; those who see two, dichromic; and those who see none, totally colour-blind. There are many degrees included in the dichromic class. There may, or may not, be a neutral band, and this is widest in those cases approaching most nearly to total colour-blindness. I have recorded a case of a patient who was colour-blind with one eye. It is an interesting fact that for form vision the colour-blind eye was much the better of the two, and he could recognise fine lines in the spectrum with this eye which were not visible to the other. He saw the two ends of the spectrum tinged with colour and the remainder grey. It will be noticed that his colour sensations were limited to the extreme red and the extreme violet—namely, those colours which present the greatest physical contrast to each other. Neither the red nor the violet appeared of the nature of a primary colour, but gave the impression that they were largely diluted with grey. A theory of colour vision must account for a case of this kind and also for the other varieties and degrees of colour-blindness. The trichromic are a very important class, and any theory must account for the fact that they see yellow as red-green, and blue as violet-green. As we should theoretically expect, when there is shortening of the spectrum, the centres of the colours are moved towards the unshortened side.

I will now show on the screen some representations of pictures painted by colour-blind persons. The upper picture is the copy, and the one below is the one which has been painted by the colour-blind artist. He has been given a selection of colours on plates and from them has selected the one which he thought appropriate in each case. It will be noticed that the mistakes made are characteristic of the colour perception of the person painting them. Whenever I show these pictures I am asked why it is that these characteristic mistakes should be made and that the true colour of the object is not used instead. This undoubtedly would be the case if the artist were allowed to match the colours by directly comparing them. But he is not able to do this; he looks at the copy and decides upon the colour of an object and then looks for the colour with which to paint it.

A man rarely uses a hue which he does not see as a definite colour, and therefore it has been quite possible for me to pick out those who are more or less colour-blind in the exhibitors of the picture gallery. For instance, if a trichromic have to paint a yellow object he will decide after looking at it whether it be a red or green in his estimation and represent it accordingly. He will be greatly influenced by the nature of colours in its immediate proximity, because simultaneous contrast is increased in the colour blind. Thus he will certainly represent a yellow which is adjacent to a red as green and a yellow which is adjacent to a green as red.

### THE EVOLUTION OF THE COLOUR SENSE.

There can be no doubt that an evolution of the colour sense has taken place; the only point is how and when did this occur. It is obvious that in those low forms of animal life in which the most rudimentary sense of sight exists there can be no sense of colour. The animal which can only perceive light and shade can only discriminate in a rough way between varying intensities of the stimulus. It is obvious, therefore, that the sense of light must have been developed first and then the sense of colour. The sense of sight must have been first developed for those waves which produce their maximum effect upon the sensitive protoplasm. The next process of development would be for the protoplasm to become sensitive to the waves above and below those which produced the primary stimulus. In the physical stimulus which produces the sensation of light there are two factors to be considered, the length of the wave and its amplitude, the greater the amplitude within certain limits the greater the intensity of the sensation. The wave-length of the physical stimulus is the physical basis of the sensation of colour. How did the sensations of colour first arise? Let us suppose that the physiological effect of the physical stimulus differed according to the wave-length of the physical stimulus.

Let us consider that the eye has reached a stage in which it has become sensitive to a fair range of the spectral rays—that is to say, evolution has proceeded to the extent of making the protoplasm sensitive to rays of light considerably above and below those which first caused a sensation of light. We now have an eye which is sensitive to the greater part of the rays which form the visible spectrum. It is, however, an eye which is devoid of the sense of colour; no matter from what part of the spectrum the rays be taken, the only difference which will be appreciated will be one of intensity. I, however, mentioned that in the physical stimulus there were two variables—wave-length and amplitude of the wave. Let us now suppose that a fresh power of discrimination was added to the eye and that it became able to discriminate between different wave-lengths of light. What would be the most probable commencement of development of the sense of colour? Undoubtedly, to my mind, the differentiation of the physical stimuli which were physically most different.

That is to say, the eye would first discriminate between the rays which are physically most different in the visible spectrum, the red and the violet—that is, presuming the eye had become sensitive to this range. It is probable that it had not, and there has been a steady evolution as to the extent of the spectrum perceived as well as to colour. We have examples of this in those cases of defective light perception in which there is shortening of the red or violet end of the spectrum.

Let us now work out the evolution of the colour sense on the assumption that the rays which are physically most different—namely, red and violet were those which were first differentiated. We know that the various rays differ in their effects on various substances; the red rays are more powerful in their heating effects, whilst the violet rays are more active actinally, as is well known by the readiness with which they act upon a photographic plate, which is scarcely affected by red light. We should now have an individual who would see the spectrum nearly all a uniform grey of different degrees of luminosity, but with a tinge of red at one end and a tinge of violet at the other. There is a great deal of evidence to show that this is how the colour sense was first developed. For instance, in the degree of colour blindness just preceding total the spectrum is seen in this way. I have also examined a woman who became totally colour blind apparently through disease of the ear. I examined her when she had recovered a certain amount of colour sensation; her sensations were confined to the extreme red and violet. As the colour sense developed it was not necessary that the rays should differ so much in refrangibility before a difference was seen, and so the red and violet gradually invaded the grey or neutral band, until at a certain point they met in the centre of the spectrum. Such cases are called dichromics.

The next stage of evolution of the colour sense is when the colour-perceiving centre is sufficiently developed to distinguish three main colours in the spectrum. The third colour, green, appears in the centre of the spectrum—that is, at the third point of the greatest physiological difference. In accordance with the prediction of the theory, I found a considerable number of persons who saw the spectrum in this way, about 1·5 per cent. of men. The trichromic see three main colours in the spectrum—red, green, and violet. They usually describe the spectrum as consisting of red, red-green, green, green-violet, and violet. They do not see yellow and blue as distinct colours and are therefore in continual difficulty over them. There are very few of the tests in general use which can detect them, especially if names be not used. They will usually pass a matching test with ease. An examination with the spectrum shows that their colour perception is less than the normal in every part, though the curve has the same general shape. The three trichromics described in my recent paper[7] on the Relation of Light Perception to Colour Perception each saw ten consecutive monochromatic patches in the spectrum instead of the 18 or 19 seen by those who see six colours in the spectrum. It is easy to show that the trichromic are dangerously colour-blind. They will mark out with my colour-perception spectrometer a patch containing greenish-yellow, yellow, and orange-yellow, and declare that it is absolutely monochromatic. When tested with coloured lights they find great difficulty with yellow and blue. Yellow is continually called red or green.

There are several other degrees of colour perception, and it may be well to say a word or two about them, though I class all above the trichromic with the normal-sighted for practical purposes, as they are not dangerously colour blind and can always in ordinary circumstances distinguish signal lights correctly. In the next stage of evolution four colours are seen in the spectrum, and the fourth colour appears at the fourth point of greatest physiological difference—namely, at the orange-yellow of the hexachromic or six-colour people. These people I have designated "tetrachromic," because they see four distinct colours in the spectrum—that is, red, yellow, green, and violet. They do not see blue as a definite colour and are continually classing blues with greens; they usually prefer to call blue purplish-green. In the next stage in evolution there appeared those who see five colours in the spectrum—red, yellow, green, blue, and violet, blue being now recognised as a definite colour; these are the pentachromic group. These people pass all the tests in general use with ease. They, however, have a definitely diminished colour perception compared with the normal or those who see six colours in the spectrum. They mark out in the spectrum only 15 monochromatic patches instead of 18. They cannot see orange as a definite colour; for instance, they can never tell whether a strontium light, which is red, or a calcium light, which is orange, is being shown them.

In the next stage of evolution orange is recognised as a definite colour, and thus we get the hexachromic or normal group, and, as we should theoretically expect, the yellow of the pentachromic is now split up into two colours—orange and yellow. The last stage of evolution which we appear to have reached are those who see seven colours in the spectrum, and the additional one is called indigo. These constitute the heptachromic group, and this seventh colour appears at the exact point which it should appear, according to my theory—namely, between the blue and violet. Persons belonging to this class have a marvellous colour perception and memory for colours. They will indicate a certain shade of colour in the spectrum, and then next day will be able to put the pointer at precisely the same point, a feat which is quite impossible to the ordinary normal-sighted person. They see a greater number of monochromatic patches in the spectrum than the hexachromic, but the curve has the same form. The marking out of the heptachromic does not appear correct to those who see six colours; for instance, the blue appears to invade the green, and the indigo does not appear a definite colour at all. If, however, we bisect the blue of the seven-colour man, and then bisect his indigo, on joining the centres we get the blue of the six-colour man, showing most definitely that the blue has been split up into two fresh colours. It will be noticed that there is room for much further evolution, and we could go on splitting up the spectrum indefinitely if only we had the power to distinguish these finer differences, but as a matter of fact, I have never met with a normal-eyed man who could see more than 29 monochromatic patches in the spectrum, and there are really millions, though by monochromatic patches I do not mean 29 separate colours. Not only are all the details of the process of the evolution of the colour-sense supported by all the facts that we can obtain from literature and museums, but the theory accounts for facts which were previously inexplicable. The distinction between light sensation and colour sensation is explained, and all facts of colour-mixing, complementary colours, and simultaneous contrast. We can understand how, as in many cases which have been recorded, a man may lose his colour perception and still have an unaltered sense of luminosity and visual acuity.

The explanation of complementary colours is a fundamental part of the theory. It is obvious that the two colours of the dichromic are only recognised as different, because they are seen in contrast to each other and that when they are mixed they neutralise each other. It is the same with the other colour sensations, when they are developed they replace the colours occupying their positions. Therefore, green which replaces the grey of the dichromic should be, and is complementary to the other two colour sensations red and violet combined. In the same way when the yellow sensation replaces the red-green of the trichromic it should be possible to compound it of both. Also, when the green sensation is in a feeble state of development it will not have the value that it has at a subsequent stage, and therefore yellow will be a much redder colour to these persons than the normal, and in a colour match of red and green forming yellow more green will be required.

Simultaneous contrast is also explained. When two colours are contrasted each appears to be a colour higher or lower, as the case may be, in the spectrum scale—that is to say, the close comparison exaggerates the difference. As the colour blind have fewer colours simultaneous contrast should be greater with them, and this I have found to be the case.

There may be some relation between the monochromatic patches and the discs in the outer segments of the cones. These are about 16 in number in the guinea-pig. As in photography, the intensity of light is a very important factor in vision. With colours of moderate intensity the periphery of the retina is found to be colour-blind, but this apparent colour blindness disappears when more intense lights are

[7] Proceedings of the Royal Society, B., vol. lxxxii., 1910, p. 458.

used. A person may have shortening of the spectrum with light of moderate intensity, but when the light is increased be able to recognise the spectrum to its normal limit. The change in steepness of gradation according to the intensity of the light is well known to photographers. The Purkinje effect, a change in maximum sensitiveness of the eye according to the intensity of the light, is, in my opinion, a photochemical effect. I find that the Purkinje effect is found for small portions of the retina if a black object has been situated in the corresponding part of the field of vision. The yellow pigment which is found in the yellow spot probably acts like the yellow screen in photography, which, by absorbing the blue and violet rays of the atmosphere, renders visible that which would otherwise be invisible. This is further borne out by the fact that hunters in India are able to hunt later in the day than usual by using spectacles glazed with golden yellow glass.

### THE FACTS OF COLOUR BLINDNESS.

When we consider the path along which a visual impulse has to pass and that each cell has probably some special function in connexion with that impulse, it is not surprising that we meet with a large number of different defects of colour perception and light perception. Defects of light perception are quite distinct from defects of colour perception.

1. *Defects of light perception.*—The person having the defect is placed in a similar position to a normal-sighted person with those particular rays removed or reduced to the same intensity. Defects of light perception may be caused by absorption or by some defect in the visual purple or cerebro-retinal apparatus. The chief defect of light perception which is found is shortening of the red or the violet end of the spectrum. Let us consider the influence of a shortened spectrum upon colour vision. The first evident fact is that bodies reflecting only light, the rays of which occupy the missing portion of the spectrum, appear black.

Nearly all colours are compound—that is to say, the coloured body reflects other rays than those of the colour seen. Thus a blue-green glass may transmit the green, blue, and violet rays of the spectrum. Let us suppose that we have a substance reflecting the green, blue, and three-quarters of the violet, the colour of the body to a normal person being green. Then if we had another substance which reflected the whole of the violet it would appear blue. But with a person who could not perceive the terminal fourth of the violet the colour would look exactly the same as the green one, and as he could not distinguish between the two he would be in continual difficulty with blues and greens. All coloured objects reflecting rays occupying the missing portion appear darker than they do to the normal sighted, and are always matched with darker colours belonging to a point more internal. Thus a dichromic with a shortened red end of the spectrum matches a red with a darker green.

It will be noticed that a shortened spectrum, especially if one end only be affected, may interfere very little with the general appreciation of shade. If, for instance, we take a case in which the red end of the spectrum is shortened, so that only three-quarters of the red of the normal sighted is seen, then all bodies which equally reflect or transmit these rays can be correctly compared, because a similar portion of light has been removed from each. It is only when one colour reflects or transmits the rays occupying the shortened portion and the other does not that there is any definite interference with the appreciation of shade. Again, if neither colour reflects or transmits rays occupying the shortened portion of the spectrum, there will obviously be no interference with the appreciation of shade.

A very common mistake due to shortening of the red end of the spectrum is the confusion of pink and blue. If a person with considerable shortening of the red end of the spectrum is shown a pink which is made up of a mixture of red and violet, the red consisting of rays occupying the missing portion of the spectrum, only the violet is visible to him, and so the pink appears a violet without a trace of red. This pink is, therefore, matched with a violet or blue very much darker than itself.

Mistakes which are due to shortening of the spectrum may be remedied if we subtract the rays occupying the missing portion from the colour of confusion. For instance, if we take a blue and a pink which have been put together as identical by a person with a shortened red end of the spectrum, and look at them through a glass which is opaque to the red but transparent to the remaining rays of the spectrum, both will appear alike in hue and shade. A person with considerable shortening of the red end of the spectrum will look at a red light (which is so dazzlingly bright to a normal-sighted person as to make his eyes ache after looking at it closely for a few seconds) at a distance of a few inches, and remark that there is nothing visible, and that the whole is absolutely black. It is obvious that the light must consist only of rays occupying the missing portion of the spectrum. The same remarks which I have made for a shortened spectrum apply to cases in which there is defect of light perception through absorption or any other cause. The person having the defect is placed in a similar position to a normal-sighted person with those particular rays removed or reduced to the same intensity.

Another effect of shortening of the spectrum when it is sufficient to interfere with the difference perception which appears to be inherent in the central nervous system is that the colours appear to be moved in the direction of the unshortened portion. For instance, we find the neutral point of the dichromic with shortening of the red end of the spectrum in most cases further towards the violet end of the spectrum in comparison with a case in which the spectrum is of normal length. In the same way a trichromic with a shortened red end of the spectrum has the junction of the red and green nearer the violet end than in a case where there is no shortening.

The point that I specially wish to emphasise is that, though every case in which there is defective light perception can be explained by a defective sensibility to light of certain wave-length, not a single case of the very large number of persons that I have examined can be explained on the older theories—that is, the defect of light perception cannot be explained on the assumption that there is a defect in a light perceiving substance which is sensitive to rays of light from a considerable range of the spectrum. A large number of cases in which there is shortening of the red end of the spectrum escape detection when only the green test is used, as is usual according to Holmgren's instructions.

2. *Defects of colour perception.*—The colour blind have a diminished hue perception and see a less number of colours than the normal. All the symptoms of colour blindness are such as we should expect from want of development of the retino-cerebral apparatus for the perception for colour. This is evident even in the slighter cases which show a diminished colour perception compared with the normal. We find that the colour blind are much more dependent on the luminosity of the colour than the normal sighted; they require a stronger stimulus; they fatigue more easily with colours than the normal sighted; they have a more marked simultaneous contrast; the visual angle subtended by the coloured object requires to be larger, and they have a very bad memory for colours. The diminution of colour perception with a diminished visual angle evidently depends upon several causes. It is very marked when there is diminished light perception for those rays which are imperfectly seen. It is also dependent upon certain retinal conditions, as in scotoma and allied conditions. It will be noticed that there are cases, however, who are able to recognise colours under as small a visual angle as the normal sighted, and I have examined one dichromic (said to be red blind by a physicist) who recognised red easily through the thickest neutral glass of my lantern and who had no difficulty with this colour at a distance.

Apart from any other defect of light or colour perception, every case with which I have met has fallen naturally into one of the classes I have given—that is to say, every person is either heptachromic, hexachromic, pentachromic, tetrachromic, trichromic, dichromic, or totally colour blind. When I first gave this classification of colour blindness the facts that I discovered were so at variance with those generally stated that it was very difficult for those who were not well acquainted with the subject to compare the two sets. The general knowledge of the subject has, however, steadily increased, and the facts which I had so great a difficulty in getting recognised now form part of our common knowledge. It would be well, therefore, to describe the two main varieties of colour blindness which are of chief practical importance and to show the relation which they bear to the

writings of other persons. These two main varieties have dichromic and trichromic vision.

1. *Dichromic vision.*—The cases which come under this head form the class of the ordinary red-green blind. It is under this head that nearly every one of the recorded cases may be classed. Vision, as far as colour is concerned, is dichromic, the neutral point being situated in the green of the normal-sighted at about λ 500. All the colours on the red side tend to be confused with each other, therefore red, orange, yellow, and half of the green are seen as one colour, the remainder of the green, blue, and violet as the other. The luminosity curve in uncomplicated cases is similar to the normal. There may be shortening of the spectrum at either the red or the violet end of a varying degree. All degrees of shortening of the red end of the spectrum may be found.

Dichromics with normal luminosity curves are those which were formerly designated green-blind, but this designation is not in accordance with the facts because there is no defect of light perception in the green, and the so-called diagnostic mistakes, as, for instance, putting a bright green with a dark red, are not made. Cases of so-called red-blind are dichromics with shortening of the red end of the spectrum. I have shown that the defective perception of the red end of the spectrum will not account for the dichromic vision which is found in these cases. We may also meet with shortening of the spectrum with otherwise normal colour perception. We also meet with dichromic cases forming a series from almost total colour blindness to those bordering on the trichromic. Any theory must account for the fact that there are varying degrees of colour blindness in dichromic vision and why there is a large neutral band corresponding to the colours of the centre of the spectrum in some cases, and in others the neutral band is so small that the dichromic cannot mark it out. The two colours seen by the dichromic are red and violet, though where no distinction is seen between yellow and red, and blue and violet the brighter colour will often be selected, that is why so many dichromics say that they see yellow and blue in the spectrum. Those who have had practical experience of colour blindness will know, however, that many dichromics make no mistakes with the red test. The following will give the normal-sighted the best idea of colour blindness, and it is how the dichromic see the spectrum and explains why they are able to distinguish between colours. Let him regard the dichromic as a man who has two colours, red and violet and white. The purest red is at the red end of the spectrum; this becomes less and less saturated as the violet is approached until the neutral or white point is reached, then violet comes into the white, and this increases in saturation to the termination of the violet. The ordinary dichromic, therefore, sees green as a much whiter and less saturated colour than red.

2. *Trichromic vision.*—These persons see three distinct colours in the spectrum—red, green, and violet. They describe the region intermediate between red and green—that is to say, the orange and the yellow as red-green and blue as violet-green. It will be seen, therefore, that their chief difficulty is distinguishing yellows and blues. A yellow, for instance, which is situated next to a green will be called red, and the same yellow when adjacent to a red will be called green. There are various degrees of trichromic vision varying from those who are little better than dichromic to those who are tetrachromic. The trichromic rarely find any difficulty with their three main colours—red, green, and violet.

These cases have been described under the name of anomalous trichromatics. This name is one which has been given to those persons who in making a match between a yellow corresponding to the sodium flame and a mixture of thallium green and lithium red make a mixture which is different from that of the normal. A man who puts too much green in the mixture is called a green anomaly, whilst a man who puts too much red in the mixture is called a red anomaly. The red anomaly is only a trichromic with shortening of the red end of the spectrum, and this may be as extensive as in any case of dichromic vision. I have, however, described trichromic cases who had all the symptoms attributed to the anomalous trichromatics, but they were not anomalous trichromatics as they made an absolutely normal match.[9]

[8] Proceedings of the Royal Society, B. vol. lxxvi., 1905. Transactions of the Ophthalmological Society, 1907, p. 255.

[9] Proceedings of the Royal Society, B., vol. lxxxii., 1910.

# An Address

ON

# THE POSITION OF SIR CHARLES BELL AMONGST ANATOMISTS.

*Delivered before the Medical Society of Middlesex Hospital on Jan. 19th, 1911,*

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GENTLEMEN,—In the autumn of 1811, almost one hundred years ago, Mr. Charles Bell, aged 37, issued a little booklet for private circulation in which he expounded an "Idea of a New Anatomy of the Brain." This first account of the theory which revolutionised our conception of the master organ of the body appeared when its author was worried with the minor affairs of life. He was newly married; a few months before he had been at death's door from diphtheria; he had just moved into a house (No. 34) in Soho-square. He was having trouble with his late landlord. His last home (Speaker Onslow's old house) in Leicester-street (square) he had the misfortune to hold on a repairing lease at a rental of £96 per annum. It was this ramshackle old house which Bell selected as a basis for carrying out a frontal attack on surgical London. The surveyor he had consulted assured him it would prove a heavier burden than nine bastard children. Nevertheless, with only £12 in his pocket, he took the house, painted the door oak-colour, fixed on it a green-bronzed knocker, and "engaged a boy for £6 6*s.* a year, giving him a coat and hat," doubtful if he should add a silver band to the latter.[1] When the New Anatomy appeared Bell's late landlord was shouting dilapidations. His museum, his lecture-room, and his two or three house pupils were also moved to Soho-square. There was trouble about the house pupils. Mrs. Bell, as newly married ladies can well understand, wished to share the privacy of her new home with her husband. "You must consider," he wrote to his brother, who acted as Mrs. Bell's ambassador, "that these young men are *house pupils* not *boarders*. Dr. Denman, Dr. Baillie, Mr. Hunter, Abernethy, Cooper, Wilson have had them or have them. Their necessity is understood, they are admitted as being essential to a lecturer." To add to his troubles, when the "Idea of a New Anatomy of the Brain" first saw light there "was an awful pause in regard to patients." He found it necessary to "give up the character of anatomist." Think of being penalised for a priceless discovery. Bell knew Harvey's life and work well; he probably consoled himself by remembering that the discovery of the circulation led to a rapid decline in Harvey's practice.

## WHAT BELL ACHIEVED.

To most medical students Charles Bell is simply known as the man who found out that the anterior root of a spinal nerve is motor in function, the posterior root, sensory. His discovery was much greater than that: he formulated a new theory of the whole central nervous system—a theory which became the basis of our present knowledge. He was the last, and with the exception of John Hunter the greatest, of that remarkable London Scottish or Hunterian school of anatomists which flourished in London from the beginning of the eighteenth until well into the nineteenth century. As an artist-anatomist this country has not produced his superior. The text-book written by John and Charles Bell was not only the best text-book of anatomy of its time, but in the opinion of many is still the most practical treatise on human anatomy yet produced in the English language. He discovered the art of making the structure of man popular with the educated

[1] The chief authorities I have relied on for the facts mentioned in this lecture are the following: "Letters of Sir Charles Bell, K.H.," selected from his correspondence with his brother, George Joseph Bell; London, 1870. "Historical Sketch of the Edinburgh Anatomical School," by Sir John Struthers; Edinburgh, 1867. "Dictionary of National Biography." "Dr. James Douglas and other Medical Biographies," by Dr. Norman Moore. "A History of the Medical Institutions of London," by the same writer, Brit. Med. Jour., 1895, June and July. "Two Great Scotsmen: the Brothers William and John Hunter," by George R. Mather, M.D.; Glasgow, 1893. "The Story of Our Museum and Some of Its Contents," by Dr. C. E. Lakin of Middlesex Hospital, Middlesex Hospital Journal, June—July, 1908.

public. He played a prominent part when medical education was passing through a critical phase in London. During the thirty-two years there, from 1804 to 1836, the hospital schools grew in importance, while the unattached schools sank gradually out of sight. He was one of those who wished to see London supplied with a teaching university, and his name is thus connected with the foundation of University College in 1827. Eight years later (1835) he took an active part in founding the medical school of Middlesex Hospital. The establishment of this school marks the end of the London Scottish school of anatomists.

### BELL'S CHARACTER.

The attitudes of men to their discoveries are as variable as parents to their children. The weak bantling needs a deal of pushing and praise to commend it to the public eye. Harvey and Darwin were ideal parents; having done their best for their discoveries they set them out in the world to rise or fall by their merits, quietly glad when they met with success, and gladly quiet when treated with injustice. That was not altogether Bell's attitude to his discoveries; he knew their merits; his children were as good as Harvey's; the weaker of them he liked best and commended most. One can see from their portraits in our National Gallery that Harvey and Bell differed as widely in features and bearing as in their attitude to their discoveries. The portrait of Bell is by J. Stevens, a Scottish Academician. The picture was probably painted soon after the battle of Waterloo, when Bell was still living in Soho-square and dominant partner in the Windmill-street School, surgeon to the Middlesex Hospital, busily engaged on his brain theory, and just over 40 years of age. In the portrait the powder is combed from his hair and the tail is cut off, events which we know from his wife's letters took place in 1815. From the same source we know he was then "dressing himself young." In 1816 he wore a white waistcoat and green coat. There is more than a little of the dandy in Stevens's portrait. His clever elder brother John was also particular about his dress. A lock is curled flat on the forehead, the hair on the temples is brushed forwards and tinged with grey. The face is chubby, alert, and clean shaven; the mouth small, well formed, and shows determination; the nose has that character we now associate with Pitt and Chamberlain; the forehead is broad; the hands small, finely formed, and manifestly deft. The portrait conveys the impression of an alert man of action, confident of his merits and abilities; there are no signs in it of the patient student, and yet he was a laborious and painstaking student. Like many brilliant men, he had gifts and habits that kept up a constant civil war within him.

### LONDON SCOTTISH SCHOOL OF ANATOMISTS.

Bell had more than a fair share of the merits and peculiarities of the London Scottish school of anatomists. All of them had tastes for the cultured side of life. James Douglas, the founder of the school, who settled in London in 1700 and died in 1742, collected editions of Horace; William Hunter, his direct successor, not only collected rare editions, but works of art and ancient coins; John Hunter shared these tastes; Charles Bell was an artist and critic. He insisted all through his life that artists should seek their inspiration in a study of the living nude as well as in works of ancient masters. All of them became slaves of work and of ambition; a reputation as a scientist was the common aim. Such fees as came their way were used for this. They laboured to give London a world-wide reputation as a centre of medical research. Their discoveries were the only fortunes they designed for coming generations. William Hunter felt himself grievously injured when the Government prevented him from spending his fortune in building a "noble" school of anatomy for national use. John Hunter left a rich museum, a poor family, and a legacy of discovery which the medical world has not yet exhausted. Hewson—if not a Scot, yet of this school—died a martyr to research. Cruickshank died poor. So did Home, and so did Sir Charles Bell. I wonder if any system of State endowment could produce such a school. They were doubly penalised: their researches were costly in money and in time. Their incomes were apt to decrease as their scientific reputations increased. All of them formed collections and museums—expensive necessities for venture teachers of anatomy. Charles Bell had already laid the nucleus of his before he left Edinburgh in 1804; force of circumstances compelled him to part with it in 1828. It was acquired by the Royal College of Surgeons of Edinburgh, where it is still preserved and treasured. In this collection are still to be seen the dissection which James Wilson, Bell's senior partner in the Windmill-street School, made to demonstrate the muscle (compressor urethræ) still known by his name, and the dissection made by Bell to show the internal sphincter of the bladder and the muscular band in the trigone which unites the ureter to the internal sphincter (Bell's muscle). William Hunter's museum was left to the University of Glasgow, Baillie's to the Royal College of Physicians of London, Cruickshank's collection found a home in St. Petersburgh, while John Hunter's, as all the world knows, was purchased by the Government and entrusted to the care of the Royal College of Surgeons of England. It forms the basis of the great collection belonging to that College.

Bell shared the virtues of the London Scottish school, and one rejoices to think he had a fair share of their very human vices. Without exception they were pugnacious men. While careless as to fortune they would fight to the death over a point of priority. The Edinburgh or Monro school shared both their virtues and their vices. Hence the angry quarrels within and between the schools. They were all men deeply in earnest; hence the jealousies, rivalries, and accusations of plagiarisms, and the bitter quarrels which are sure signs of scientific life. They had the unconscious art of making enemies. To peaceful men who believed the medical world and its practice had reached as near perfection as could be in a fallible world they appeared arrogant and disturbers of the medical peace. Charles Bell was bred in the Edinburgh school and spent his life in the London one, and could not be expected to be peaceably inclined. Evidently he had a temper. When he attended the British Association in 1834, then in his sixtieth year, he took an opportunity in his address to remove "a very prevailing notion of the medical men in Edinburgh that I am pugnacious and sarcastic."

We know the inner life of Charles Bell more intimately than that of any other member of the London Scottish school. During the 32 years he lived in London (1804–1836) he confided freely his hopes, his cares, his aims, successes, and foibles to his elder and helpful brother George, who had attained in Edinburgh as high a reputation as a lawyer as Charles had gained in London as a surgeon and anatomist. A selection of these letters have been published; they are most valuable documents, but a harsh critic might use them to an unfair advantage. The letters leave the distinct impression that the writer had been disappointed in his life in London—that he had scarcely been rewarded according to his deserts. Yet those who knew him intimately assure us he was a happy man and enjoyed life. He was apparently one of those men, and they are not uncommon, who is happy and optimistic in speech but sour and pessimistic in writing. The man who is gruff and repelling in conversation is often the most charming letter-writer. Oliver Goldsmith was a genius only when he held his pen. Most men have dual personalities—one of speech, another in writing. Bell did complain occasionally, but Scotsmen must not be taken too literally when they grumble. Complaint is a form of mental luxury. When London had bestowed fortune and fame on William Hunter he wrote to his early guide and friend Cullen, "You have been ill-used at Edinburgh as I have been in London." The particular ill-usage which occasioned this complaint was that the Government did not encourage him to spend his fortune in building a national school of anatomy. Bell had another mental character which distinguishes the real anatomist. His memory and understanding were visual, not auditory; he learned and understood things by seeing them; words alone were poor substitute for things. As a boy Cæsar's bridges across the Rhine appealed to him and so did their construction; the rules of syntax and their able exponent, the rector of the high school, were nightmares.

### BELL'S EARLY DAYS IN LONDON.

So far I have dealt merely with the more superficial and personal aspects of Bell's life and merely outlined his place in the London Scottish school. It is time now to see if the steps can be traced whereby he made for himself a permanent name in the history of anatomy and medicine. Some years ago I inquired into the circumstances which led men to follow the profession of medicine, but amongst the hundred men I then interrogated there were none who were turned to medicine by so strange a chance as the two Bells—John and Charles. Before John

Bell was born, his father, a clergyman of the Episcopal Church of Scotland, had dedicated him to the medical profession, in gratitude for relief at the hands of a surgeon. John Bell was trained under Monro the second, and there was no man in Europe more able to introduce him to a useful study of the human body. In the Edinburgh, as in the London Scottish school, all research and study were bent towards discovering not the form but the *function* of parts. John Bell was a dapper little fellow, of extraordinary ability and personality; he was a splendid draughtsman, clever with his hands and head, clear and quick in speech, a born teacher, intensely practical, independent, and, above all, pugnacious. He set up a venture or extramural school in 1786 when he was 23, won success as a teacher and operator, and was soon at rivalry and war with the privileged authorities of the University. Charles, who was 11 years younger (he was born in 1774), had the same artistic gifts, and followed naturally in his footsteps. Monro was then deep in his researches in the nervous system; he had noted that only the posterior roots of spinal nerves were supplied with ganglia, and one may be quite sure he asked himself and his students the reason of such a distribution. Monro was puzzling over the meaning of the parts and arrangement of the nervous system.

The relationship between the elder and younger Bell is very similar to that between the elder and younger Hunter. John Bell was 11 years older than Charles. William Hunter was ten years older than John. The younger brothers served an apprenticeship in the dissecting-rooms of the elder. The elder brothers were busy teaching and publishing; the younger as busily researching. At the end of the apprentice years the brothers became gradually estranged. At the age of 23 (1797) Charles began his system of dissections and illustrations. By 1800 the quarrels between John Bell and the University had come to a climax. John abandoned the school to Charles; the younger brother had to bear the brunt of the elder brother's quarrels; his way in Edinburgh was barred. Hence the prospecting visit to London in the autumn of 1804. The journey by coach took five days; he reached London on a Sunday and found it dull. The fame of his brother and of himself had gone before him. Their books, writings, and engravings had given them a place in the medical world. Charles was 30 years of age and hoped to obtain a foothold where John Hunter had laboured and become famous. Mr. Anthony Carlisle of Westminster Hospital, six years his senior, told him bluntly they liked to "manufacture their own raw material in London"; Bell's opinion was that "Carlisle has the greatest conceit of himself I ever knew a man to possess." Carlisle's colleague, Mr. Lynn, befriended the able, independent, and ambitious Scot. Was there ever a Scotsman yet who did not meet one Carlisle and many Lynns on his first venture in that strange "cock-pit" of the world—London? In those waiting days Bell rode out with Abernethy, who knew how to cover 22 miles of road at the cost of 1½*d.* for tolls; he dined with Sir Joseph Banks and Dr. Matthew Baillie, and enjoyed gentle flirtations in the agreeable society of Sir William Blizard's daughters. A year passed and nothing came to him, and hence the venture already mentioned of taking Speaker Onslow's old house in Leicester-square with £12 in his pocket and a weekly expenditure that would see his fortune dissipated in a fortnight. An onlooker would scarcely expect that Bell's course was leading towards the discovery of a new anatomy of the brain.

Then comes the opening lecture in the old house at the beginning of January, 1806; it was a wet night and 40 came to hear him, but only 12 enrolled themselves as pupils—bringing him a sum of £82. It was then as it is now: students as a rule do not pay fees to learn the new and the strange; they wish to have clearly set before them the plain and orthodox facts which are needed by them in examinations and practice. Bell was intensely disappointed; he dreamt of hundreds, and not even tens came. The manuscript of the "Anatomy of Expression" which he brought down from Scotland with him was finished in the meantime and published. He was "deeply mortified" when Mrs. Sydney Smith suggested it would be better to have someone to remove the Scotticisms. However, the book succeeded, and it deserved its success; it is the first and greatest of any work on anatomy for artists that has seen the light of day in this country.

## WORK ON THE ANATOMY OF THE CENTRAL NERVOUS SYSTEM.

A study of how the emotions are expressed in man led him towards the brain. No explanation could then be given of the division of this organ into lobes, nor was any particular functional meaning attached to the cerebellum. The cranial nerves were complicated in their distribution and course, and the spinal nerves had two roots just because they had been created so. On the theory of the brain then taught, a single nerve should have been sufficient for each part; one kind of nerve was enough for all kinds of sensations and impulses; the nerve path which served to bring a message to the brain also sufficed to take one away again. Bell was a close student of John Hunter's works; Hunter was his ideal; he must have known that Hunter had discovered the double nerve-supply of the olfactory mucous membrane, and that he explained the fact by supposing the first nerve was only for the sense of smell and the fifth for ordinary sensation. Hunter suggested that there were different kinds of nerves—those of the eye, the nose, and of the ear were for the transmission of special forms of sensation, and those like the fifth for ordinary sensation. This much at least is clear: the starting point of Bell's discovery was the recognition that the optic nerve transmitted only impressions connected with sight, the olfactory only with smell, the auditory only with hearing, the gustatory only with taste. There were therefore different kinds of nerves; all nerves were not functionally alike. Another of Hunter's observations may have influenced him. When a joint is flexed it was Hunter's opinion that the extensor or elongating muscles were as directly under the control of the nervous system as the flexor or contracting muscles. Bell went a step further; from his own sensations he was convinced that the muscles must be as freely supplied with nerves of sensation as with nerves of motion—a conception which Sherrington has elaborated and extended with unrivalled skill. In Bell's opinion our muscular actions were controlled from beginning to end on the impressions carried to the brain by the sensory nerves which supplied them. He could not conceive that one nerve could carry messages to and from the brain simultaneously; there must be two paths. The problem of the two roots came back to him: was it possible one was for sensation and one for motion? The nerves from the organs of sense, which he knew to be purely sensory, ended in the dorsal or posterior columns of the nerve axis; when he followed up the anterior roots he traced them in the anterior columns of the cord to the pyramidal tracts, crusta, and cerebrum; the posterior roots he found went by the posterior columns to the cerebellum. Therefore the brain and the anterior or ventral parts of the nerve axis were connected with motion; the cerebellum and the dorsal parts of the cord and medulla were connected with sensation. That was the theory he set out to prove in 1807—the second year of his venture lectures in Speaker Onslow's old house.

In 1808 he had exhausted the anatomical evidence and tested the truth of his inference, drawn from anatomical evidence, by physiological experiment. The experiments were confirmatory, but in his opinion not altogether decisive. To reach the spinal roots and cord entailed a considerable injury to the parts operated on. If his theory were true, he inferred that it should also be applicable to the cranial nerves. There the nerves were more superficial, and it was possible to select examples in which the sensory and motor roots were not conjoined. He selected the seventh as a type of the anterior or motor nerve, divided it, and found the facial muscles were paralysed; he exposed the fifth (he did not then know of its motor root), divided some of its branches, and found common sensation was lost. Until these experiments were made the facial and fifth nerves were supposed to fulfil the common purpose of nerves. Up to Bell's time the only explanation offered for the double nerve-supply of the face was one supported by his old teacher Monro—that the fifth might still act if the facial nerve was accidentally injured or *vice versâ*. The discovery of the cause of facial palsy was a side issue; the importance of the experiment to Bell was that it demonstrated the truth of his theory from one end of the central nerve axis to the other. The ventral part was motor, the dorsal sensory.

Bell's second discovery—the recognition of a respiratory system of nerves—came about in the following way.

About 1813, the year after he joined Wilson in the Windmill-street school, he made a dissection of that complex of nerves which may be exposed between the mandible above and the thorax below. He had to demonstrate them to his class next day. What explanation could he give that would account for the intricate manner in which the cranial and cervical nerves were arranged and distributed in this region? Many of these nerves—the ninth, tenth, and eleventh—did not arise either in the line of his sensory or motor roots, but intermediate to them. Why was that? He had to go to a case in the country, and on the way he discovered what he believed to be the explanation. The chief nerve of the group went to the lungs; it was functionally therefore a respiratory nerve. The other nerves arising in line with it—the sixth, ninth, and eleventh—must also be respiratory. The muscles of the face were, in his opinion, mainly respiratory in function; the sterno-mastoid supplied by the eleventh could be used in inspiration. He was dominated by the idea that the origin of nerves must be determined entirely by function. The mechanism of respiration, he believed, had been added to the more primary actions of the body and the system of nerves which regulated it must have been interpolated in the motor and sensory systems. He supposed that an intermediate system must be represented in the cord to influence and control the respiratory action of the body wall muscles. The phrenic (internal respiratory nerve) and long thoracic (external respiratory nerve) he also supposed to belong to this system. Bell was particularly fond of his "respiratory" theory. It was the first attempt ever made to explain a certain series of complicated facts. He saw that nerves having an intermediate root origin must be different in nature from the nerves rising in the dorsal and ventral series. We had to wait 60 years before a more satisfactory explanation was given of the nerves which have an intermediate root origin. It came with the demonstration of the splanchnic system by Gaskell. But who can yet explain why the sensory system is dorsal, the ventral motor, and the intermediate splanchnic?

### COMPARISON OF DISCOVERIES OF HARVEY AND BELL.

There is a remarkable similarity between the discoveries of Harvey and of Bell. Monro, as we have seen, was puzzling over the meaning of spinal ganglia when Bell was a student in Edinburgh at the end of the eighteenth century. Fabricius was trying to explain the meaning and use of valves in the veins when Harvey was studying in Padua at the end of the sixteenth century. They were designed, Fabricius thought, to secure an even distribution of the blood during its reflux from the thorax to the extreme parts of the body. Harvey and Bell came to London to observe, reflect, and experiment, and teach and practise for a livelihood. Harvey brooded over his "new" idea from 1616 to 1628 before publishing; Bell over his from 1807 to 1821. Harvey found the arrangement of valves could not be explained on the current teaching of the day. They allowed blood to pass only in one direction, and that was towards the thorax. The current teaching could offer no explanation of why the lungs required a special ventricle and an artery as big as that to the whole body for their special blood-supply. No explanation was offered for the existence of the tricuspid valve, nor for the semilunar and mitral valves. Harvey was the first anatomist to formulate as a working principle for the investigator that the existence and form of every organ and part of the animal body is determined by function, and that by a study of form a key or guide may be obtained which will direct the inquirer as to the manner in which the function may be experimentally demonstrated. A rational study of anatomy guided Harvey and Bell to their discoveries.

On whatever standard one proceeds to judge, Charles Bell must be assigned a first place amongst the world's anatomists. He did for the anatomy of the nervous system what Harvey did for the circulatory system—brought order out of chaos. John Hunter was probably a greater discoverer than either, but he was an anatomist of life rather than of the human body. Harvey proved his thesis in every point; his demonstration was complete. His inclinations were under the sole guidance of his facts. Bell, as we have seen, sometimes allowed the facts to follow his inclinations. In Bell's favour we must take into consideration he was dealing with the most complex and elusive system of the body, one which can be interrogated with success only by the more delicate modern means which Bell had not at his command.

In conclusion, I cannot do better than quote to you a footnote from Sir Charles Bell's treatise on the "Nervous System of the Human Body": "In your department," Sir Humphry Davy said to him, "you can hope for nothing new. After so many men in a succession of ages have laboured on your subject, no further discovery can be expected." "This," writes Bell, "shows great ignorance of anatomy since every improvement points to something new, and the higher we go the more is the field of view extended." Once a new path is found there is no telling the various discoveries it may lead to. The path discovered by Charles Bell is one which has carried his successors into new and wide fields. Nor are the methods which Harvey and Bell employed to elucidate the human body exhausted; those who know the structure of man best know how obscure are many parts and organs of the human body, and how indifferently they can be explained on the basis of our current teaching.

## THE TREATMENT OF EXTENSIVE CARIES IN CHILDREN BY EXTRACTION.

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FOR several years it has been my practice to treat extensive caries in children by extraction. The principal criticisms brought against this method of treatment have been: (1) that the loss of mastication area interferes with the growth of the child; and (2) that the effect on the permanent series is to cause irregular eruption and crowding of the teeth. I propose to show that these criticisms are not altogether supported by facts, and that the effect of the removal of the teeth on the general health of the child is beneficial rather than harmful; still further, that the harm accruing to the permanent series is slight and well outweighed by the gain to general health.

The treatment, briefly stated, consists in the removal of all functionless deciduous and permanent teeth. To consider the question more in detail. If the first permanent molars are in position the best treatment seems to be the removal of all the deciduous molars. I do not hesitate to remove sound molars if their antagonists have been removed. For example, suppose the right maxillary deciduous molars and the left mandibular molars are unsavable, and their removal is called for, then the remaining teeth—namely, the right mandibular and the left maxillary molars—are rendered functionless and can serve but little good purpose; indeed, they will harbour food, and so prevent the mouth being kept naturally clean. It is urged that such treatment robs the child of masticating power, but such teeth are useless as far as the function of mastication goes; indeed, they render the first permanent molars functionless, because a child with tender teeth "bolts" food and cannot chew.

In cases where at, say, the age of 8 years the first permanent molars are carious and have exposed pulps or septic pulps, these teeth are removed in addition to the deciduous molars, the child being left with only the permanent incisors and the deciduous canines. The improved condition of the child following this rather drastic treatment can best be shown by detailed reference to a few cases.

CASE 1.—A female patient, aged 4 years and 6 months, when first seen was suffering from gastro-intestinal trouble.

Teeth removed[1]: $\frac{d\ c\ b\ a}{e\ d} \Big| \frac{a\ b\ c\ d}{d\ e}$

In this case the $\overline{e}\,|\,\overline{e}$ were not carious and are being retained until the $\overline{6}\,|\,\overline{6}$ erupt, when they will be removed. This patient has lost her gastro-intestinal trouble, and between June 8th and Oct 2nd she increased in weight from 2 st. 4 lb. to 2 st. 8 lb. The normal weight should have been about 2 st. 8 lb. and the normal increase in four months about 1½ lb. This patient, however, increased 4 lb.

[1] The notation used is that usually adopted in dental literature. The letters and figures above the line indicate the upper teeth, those below the line the lower teeth. The figures on the right hand denote the left teeth, and those on the left hand the right teeth. The numerals are used for the permanent teeth, and the letters for the deciduous teeth. The teeth are counted from the middle line. Example: $\overline{6}$ indicates the left maxillary first molar; $\overline{e}$ the right lower second deciduous molar.

CASE 2.—The patient, a male, aged 7 years and 4 months, was stated always to have had indigestion.

Teeth removed: $\frac{6\ e\ d\ c}{6\ e\ d\ c} \Big| \frac{c\ d\ e\ 6}{c\ d\ e\ 6}$

The teeth were removed on Dec. 6th, 1909, the patient weighing 3 st. 2½ lb. On Feb. 7th, 1910, the patient had increased to 3 st. 5 lb., and all symptoms of gastro-intestinal disturbance had ceased. The average weight of this boy should have been about 3 st. 9½ lb. and the increase in two months a little under 1 lb. The weight, however, increased in two months 2½ lb.

CASE 3.—The patient, a male, aged 6 years and 7 months, complained of constant feverish attacks.

Teeth removed: $\frac{e\ d\ b\ a}{e\ d} \Big| \frac{a\ b\ d\ e}{d\ e}$

Between December, 1909, and Oct. 23rd, 1910, the weight had increased from 3 st. 5 lb. to 3 st. 10 lb. The feverish attacks had ceased and the child now slept and ate well. This patient was of about average weight, and the increase in weight was about normal.

The rapid increase in weight following the extraction is at times very marked. For example, in a boy, aged 10 years and 2 months, who was suffering from "glands," it was found advisable to remove: $\frac{e\ d\ c}{e\ \ c} \Big| \frac{c\ d\ e}{c\ d\ e}$. Between June and October this boy increased in weight from 4 st. 6 lb. to 4 st. 11 lb. The normal weight should have been about 4 st. 11½ lb., and the average increase in four months about 2 lb. This child in this period in-increased 5 lb.

CASE 4.—The patient, a boy aged 6 years and 6 months, when seen on Nov. 28th, 1910, was found to be suffering from "glands," gastro-intestinal sepsis, and general ill-health. He weighed 2 st. 12 lb. The first permanent molars were partially erupted. The following teeth were removed: $\frac{d\ \ b\ a}{e\ d\ \ b\ a} \Big| \frac{a\ b\ \ d}{a\ b\ \ d\ e}$. The $\underline{e} \Big| \underline{e}$ were carious but the pulps were not involved and they are being retained until the $\underline{6} \Big| \underline{6}$ are fully erupted. This patient was seen on Jan. 16th last, when he weighed 3 st. 3½ lb., and therefore showed a gain of 5½ lb. in about seven weeks. His mother stated that his appetite showed marked improvement. The glands were considerably smaller. The increase in weight is, however, not always shown; in a few cases there is a slight decline, but this is, I find, frequently traceable to the presence of sepsis in some other parts—for example, the tonsils or the naso-pharynx.

To show how the effect of tender teeth will affect the child the following case is of interest because the mother had kept a regular record of the child's weights.

CASE 5.—This child from birth had increased progressively in weight until September, 1909, the weight at that time being 24 lb., and the age of the child 3 years. The mouth then began to get tender, and in February, 1910, the child had lost 1½ lb. The deciduous molars were removed and attempts were made by local treatment to conserve the incisors. Within one month this child had increased to 24¾ lb. By Sept. 3rd the weight was 27½ lb. The incisors now began to give trouble, and the child when seen on Oct. 6th weighed 25¾ lb. These teeth were removed with the following results: Oct. 6th, 25¾ lb.; 15th, 26¼ lb.; and 29th, 26⅝ lb.

One further case may be given because it emphasises the point that when the increase in weight does not follow the removal of the teeth there may be other sources of sepsis present.

CASE 6.—The patient, a female, aged 7 years and 6 months, when seen on Feb. 23rd, was suffering from defective teeth, tonsils, and adenoids. The following teeth were removed: $\frac{6\ e\ d\ c}{6\ e\ d} \Big| \frac{c\ d\ e\ 6}{d\ e\ 6}$. The following records of the child's weight were taken:—

| | st. | lb. | oz. | | st. | lb. | oz. |
|---|---|---|---|---|---|---|---|
| Feb. 23rd ... ... | 3 | 10 | 8 | May 25th ... ... | 3 | 9 | 12 |
| March 24th ... ... | 3 | 9 | 12 | July 26th ... ... | 3 | 10 | 12 |
| May 3rd* | | — | | Oct. 15th ... ... | 4 | 0 | 6 |

* Tonsils and adenoids removed.

In this case the improvement in weight and general health did not follow until the complete removal of the sources of sepsis.

The cases quoted are sufficient evidence that the loss of masticating power does not interfere with the general health of the child, but increases the power of metabolism by removing a source of sepsis. Having shown that a marked improvement in the general health follows the treatment of free removal of the teeth, it will now be necessary to deal with the influence of the treatment on the growth of the jaws and the eruption of the teeth. It has been urged that the removal of the deciduous molars allows the first permanent molars to come forward and so cause in the future crowding of the anterior teeth. With regard to this, I would point out that such travelling forward of the permanent teeth occurs mainly in mouths where the growth of jaws is interfered with by want of function, either due to insufficient mastication or lack of nasal breathing. From observation—but I express myself guardedly in this respect—I am inclined to think that if, by removing the deciduous molars, you can render the first molars functional, the growth of the jaw will be stimulated and room made for the development of the second and third molars, with no forward pressure from these teeth, and, with the first molars occluding correctly, there will be little, if any, forward movement.

A somewhat extended experience of these cases seems to show that the first molars move forward but little, if at all, in children who have been free from adenoids, and in whom at the time of removal the first permanent molars are in correct occlusion, and the teeth are in their normal vertical direction. On the other hand, in children who in their early years have suffered from adenoids, the first molars do move forward, but in these cases the forward movement always occurs, although perhaps it is less marked, directly the second deciduous molars are lost in the natural way. But granting that the treatment of extraction suggested does cause a moving forward and subsequent crowding, the removal of four teeth will easily alleviate the condition. One has to weigh in the balance the loss of four teeth against the constant presence of oral sepsis and all its sequelæ. In my opinion the former far outweighs the latter. Take as an example the following case.

CASE 7.—The patient, aged 8 years, was suffering from general ill-health and chorea. The deciduous molars were removed, and with the eruption of the premolars the teeth presented a slightly crowded condition. The second premolars were removed and the child has now a good regular arch and an excellent occlusion.

In this case there is no proof that a crowded arrangement of the teeth would have been avoided by the retention of the deciduous molars, but even granting that it would have been, which was the better line of treatment—a septic mouth for four years, with the possible chance of preventing crowding, or a clean mouth for four years and the risk of crowding, which can be easily remedied?

The drastic removal of teeth does not lead in the majority of cases to any marked irregularity on the eruption of the permanent teeth. Indeed, it is surprising what excellent arches are eventually met with in these children. In cases where the majority of the deciduous teeth have been removed before the age of six years the permanent incisors erupt in a regular arch, and one rarely finds any "spreading." Again, in cases where the first permanent molars and the deciduous molars have been removed, perhaps before the age of nine years, an excellent occlusion will usually follow. In a few cases the happy results just referred to do not always follow, but in these the trouble is often traceable to asymmetrical extraction.

A word now in reference to the treatment of cases where the teeth are decaying on all surfaces, such as occurs from the sucking of sugar-bags, or the constant presence of an easily fermentable carbohydrate on the surface of the teeth. Providing the pulps of the teeth are living, we can hope to arrest the caries by placing the teeth under a proper environment. It is a *sine quâ non* of the treatment that mouth-breathing, if it is present, should be cured. Careful regulation of the diet and cleansing of the teeth, combined with local treatment, will sometimes work wonders. For the latter purpose no drug acts better than nitrate of silver, and this should be applied to all the carious surfaces of the teeth at least once a week until the dentine shows signs of hardening. The arrest of the condition can also be applied by the regular use by the parents of spirits of wine and an alkali.

# X BODIES IN HUMAN BLOOD.

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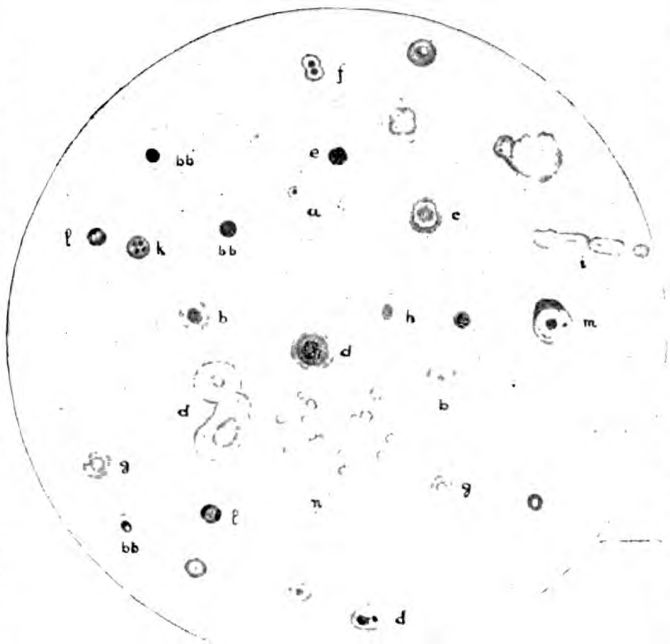
As noted in the first Review Supplement of our laboratories, these curious bodies had once been noted in the blood of a sick dog in Khartoum. On Nov. 23rd, 1910, I received the following report, accompanied by the blood films mentioned, from Dr. Nicola Mâloüf, of the Sudan Medical Department, one of the medical officers in Omdurman, who, when in Khartoum, had been diligent in his attendance at the laboratories:—

"I am sending you four slides of blood from a patient under my care who is suffering from a very interesting disease, which I might call urticaria nocturna. The disease is of four months' standing; it appeared at Kamlin. The patient is a white lady about 18 years old, married, and is nursing a child 1 year old; the child is very healthy. The case presents the following symptoms. Every evening about 7 P.M. flat, solid, more or less elevated wheals, irregular in size and shape, begin to appear all over the body. These wheals disappear and others appear till the early morning, when the eruption begins to diminish, and about sunrise nothing is left and the patient looks normal like any other person. The eruption is accompanied by a severe itching and burning sensation; there is no fever and no disturbance of any of the systems of the body. The lady has lived in Kamlin for the last two years. The slides are not fixed. Will you kindly examine them for anything you might think as a cause? If more slides are required, or any other information is necessary, I will be very glad to help."

Inquiry elicited the fact that at no time had there been any fever.




Illustrating X bodies in the blood. × 1000.

In one of the films I found typical X bodies in considerable numbers, free and occasionally lying on the red cells. A fairly common form was the small body (see Figure, *a*), which Horrocks and Howell[1] describe as being about one-eighth the size of a red corpuscle, spherical in form, and consisting of a faint capsule with a circular centre staining deep blue. The majority, however, had centres more of a pale lilac than a blue colour, and contained faintly staining material between their capsules and their centres (*b*). What may be called large and intermediate forms (*bb*) of a similar type were present, but in the former the capsule was not so defined, the appearance being rather that of a halo of more faintly staining substance surrounding a deeply stained spherical core (*c*). Very few forms with concentric ring (*d*) were observed; and only one or two of the large "solid" coccus-like type (*e*) shown in the drawing "A" which so well illustrates the paper by Horrocks and Howell. One did not see the type with an indented centre, crescent-shaped, and enclosing a small circular body, of which they speak, but the forms apparently in process of division were present (*f*). I am not sure that these, especially when occurring in groups of threes, do not really represent fused forms. Bodies which may be described as fragmented were encountered. Some of these have only a chip, as it were, broken from them, or look like biscuits from which one has bitten out a piece (*g*). Distinctly oval forms were seen, usually of considerable size (*h*), and also a curious oblong appearance which it is difficult to describe, but which is well shown in (*i*). There can be no doubt these forms consist of the same substance as the bodies. For convenience I will call them the oblong forms. Again, small forms measuring 3 $\mu$ in diameter were met with, one of which showed a segmentation of the central spot into four (*k*); another no dark centre, but dark spots at its periphery (*l*); and yet another a kind of inner capsule. Many of the smallest forms were homogeneous, showing no dark centres whatever, while some of the larger forms, with distinct cores, showed granular material between their capsules and their centres. In this there were sometimes small blue spots or granules. Others, again, were irregular in shape, being what may be called "knobbed" bodies (*m*).

Like Horrocks and Howell, I found no trace of chromatin in these bodies; but I noticed that, lying free, there was a considerable amount of amorphous-looking material which ook on a pale lilac stain like some of the smaller bodies. This was more plentiful in that part of the film where the bodies occurred, for I did not find them equally distributed throughout, and I could not help thinking that there was some connexion between the bodies and this material—i.e., that they might represent portions of it which, owing to the action of the circulating blood, had assumed a spherical shape just as do fragments of macrophages. Still, it was difficult to account for the concentric rings on this hypothesis, and altogether I found it impossible to come to any conclusion regarding them. At the same time further study convinced me that the smaller homogeneous bodies at least, whose staining reactions and definite form readily distinguished them from blood plates, are in reality derived from the irregular amorphous masses. One can, as it were, see them budding and breaking off from the latter, which themselves are very curious and interesting, containing, as they often do, an irregular central cavity, and being furnished with edges which resemble the outline of a very rugged and indented sea coast (*n*).

The following are the measurements of the various forms of bodies found:—Spherical: These ranged from 0·7 $\mu$ to 5·25 $\mu$ in diameter; 1·5 $\mu$ was common, and 2·25 $\mu$ even more so, the majority being of this dimension. 3 $\mu$ and 3·3 $\mu$ were, however, not at all rare. Fused or dividing forms frequently measured 3 $\mu$ each. This was also the size of some small "solid" coccus-like forms, four of which were found lying close together. One so-called oblong form measured 6·75 $\mu$ in length by 3 $\mu$ in breadth; and another, which lay end-to-end with it, 4·5 $\mu$ by 3 $\mu$.

It will be seen, then, that the bodies are pleomorphic, although quite distinct from all the blood elements and readily recognisable as specific entities. As I only found them in one film out of the four sent, it occurred to me that their habitat might not be the blood but the skin, from which they may have been washed out by the first drop of blood. I had no means of telling which was the first film taken, but I noted that Horrocks and Howell on several occasions found

[1] Horrocks, W. H., and Howell, H. A. L. (April, 1908): X Bodies found in the Blood of Human Beings and Animals, Journal of the Royal Army Medical Corps, vol. x., No. 4.

the bodies in one slide out of several examined. On the other hand, this was by no means their invariable experience, while they once recovered the bodies from broth into which a piece of the liver of an ox or cow had been placed. This would appear effectually to dispose of the idea that they are derived from any part of the skin, unless some contamination had occurred.[2] The same remark applies to their successful inoculations of rabbits.

I asked Dr. Mâloüf to send me some more blood films, and he forwarded ten, all unfortunately taken from one of the urticarial wheals and numbered in the order in which they had been taken. In none of them were X bodies found. The previous blood films had been made from finger blood. I now sent Dr. Mâloüf two tubes of Nicolle's blood agar and several tubes containing the 1 per cent. sodium citrate solution employed by Horrocks and Howell, and requested him to inoculate these tubes with appropriate quantities of blood taken from the finger as at first. This he kindly did, and I incubated the inoculated media at or about 22° C. The tubes were examined daily for five days, care being taken to secure the blood sediment from the citrate tubes. Unfortunately coccal or bacterial contamination, apparently of cutaneous origin, eventually made its appearance in every one of the tubes, and at no time were any X bodies found. I tried hard to get the patient to visit the laboratories, but in vain; and before Dr. Mâloüf could obtain other films or make other blood cultures she left for Kamlin on the Blue Nile. Hence, much to my regret, I was unable to pursue the case further or to confirm the findings of Horrocks and Howell in culture media, or to repeat and extend their inoculation experiments.

Although one cannot express any opinion on these curious bodies their occurrence in the Sudan is certainly interesting, as is the fact that they were found in a case unassociated with fever, but suffering from a recurrent or intermittent urticaria. I am indebted to Mr. George Buchanan, our senior laboratory assistant, for the careful drawing illustrating the main types present.

Khartoum.

## SOME CASES ILLUSTRATING THE EFFECTS OF THE HYPERÆMIA TREATMENT BY ELASTIC BANDAGE ON UNUNITED FRACTURES.

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TROUBLESOME cases of ununited fracture are constantly occurring in surgical practice and tax our resources to the utmost in bringing about their repair. The condition appears to be met with after any kind of fracture of the long bones, from the most simple and limited to the most extensive comminuted and compound varieties. The various causes are fairly well recognised now and need not be alluded to, the object of this communication being merely to report cases in which a very simple method of treatment was followed by the best results where other more serious measures had failed. The treatment is not new, but though it has been in favour with some for many years it does not appear to have as yet gained for itself that place in ordinary surgical procedure to which it is entitled.

The method of inducing union in ununited fractures by engorging the parts around by bandaging above and below the lesion appears to have been first proposed and practised by Mr. Thomas of Liverpool many years ago. This is pointed out by Bier in his valuable treatise on the uses of artificial hyperæmia in surgery, which has done so much to enlarge our views on the processes of repair in many ailments. But so far the practical use of hyperæmia, as applied to ununited fractures, does not appear to have become general, as remarked above.

When a simple, say transverse, fracture of the tibia (e.g., Case 2), put up and maintained in perfect position, is found at the end of six or eight weeks quite ununited, several other facts about the limb may usually be noticed as well. It is, of course, flabby, and more or less wasted from disuse; it is colder than its fellow, and, as a rule, the skin is paler. The necessity for complete immobilisation is the cause, and prevents us from employing massage or any of the usual means for keeping up the normal nutrition of the limb. This may, of course, in exceptional cases, have been further impaired by needlessly firm bandaging. But apart from this mere disuse produces a greater or less amount of anæmia in the injured area, although at the first there is a certain degree of traumatic hyperæmia, the first step in the process of repair.

It seems, therefore, quite a common-sense measure to create by mechanical means an increased flow of blood through the part. This was often done in earlier days by forcibly rubbing the bones together and so reproducing a traumatic hyperæmia. But the objections to this were obvious, the chief one being the difficulty of replacing the bones in good position. The use of the elastic bandage is now found to be equally efficacious or more so. In the cases below it was applied lightly over the limb below to within a couple of inches of the fracture and more firmly above downwards to within the same distance of the lesion. The only difficulty met with is in producing the necessary amount of engorgement without interfering with circulation in the deeper parts. The upper bandage had often to be readjusted more than once to obtain the blue-pink flush *without* pain, which should always be present. Any pain or absence of circulation in the interval between the bandages was always a reason for the removal of the upper one. The engorgement was kept up about two hours morning and evening, and in the intervals the whole limb was wrapped up in warm wool.

In the last case in our group, in which necrosis of the ends of the bone had taken place as the result of the laceration of the soft parts and the periosteum by the injury, another effect of the engorgement was in play. The sinus left after removal of the sequestra was presumably more or less infected, although the temperature for weeks had been quite normal. Here the first effect of the constriction hyperæmia was always to produce an increased flow of serum, and it is fair to assume that any organisms present were mechanically carried out of the sinus. But besides this, the germicidal effects of the healthy serum resulted soon in a perfect cleaning of the granulating track. The net result was a rapid healing of the whole wound. The gradual formation of abundant callus could be followed by skiagrams after this until union was sound. Since then active exercise has been encouraged in every way, and the limb has been massaged to improve nutrition and get rid of the stiffness naturally following such prolonged disuse.

It will be noted that in the first case recorded here two attempts to secure union by wiring had failed, and though abundance of time had elapsed after the last operation to allow of the formations of callus no repair had taken place. It was only when the hyperæmia had been kept up for some time that this result was obtained and union became solid.

The last case was a particularly serious one. For it was the patient's right arm, and a second wiring was not considered desirable in view of a state of ulceration, necrosis, and sinus remaining after the original injury. The removal of the sequestra besides left a gap between the bones and a granulating cavity. In this case all that was done was to place a thick rod of aluminium within the medullary cavity of both ends so as to keep them in a straight line. The two pieces were pushed together over this and nothing further was done to hold them together. A small gauze drain was inserted down to the line of fracture and the wound was partially closed. What remained healed with remarkable rapidity under the increased hyperæmia induced by the bandage and our radiograms showed how quickly callus began to form after this. It may be suggested that all this would have taken place without the bandage. Perhaps it might. But the fact remains that no trace of repair of the bone could be made out until the hyperæmia had been in full swing for 10 for 12 days, when our patience was nearly exhausted. Moreover, the same result was obtained in the two practically simple fractures, Cases 2 and 3, which had failed to unite under conditions which

[2] Mr. George Buchanan, however, drew my attention to the fact that some of the forms were present on the slide beyond what one may call the "commencement end" of the blood film. This rather suggests that they may have been derived from the surface of the skin, especially as, in all probability, the slide was pressed down upon the finger in order to take up the drop, and not merely allowed to come in contact with the latter.

were more than usually favourable. The bandage was applied when surgeon and patient were beginning to lose heart: the effect was rapid union.

CASE 1.—The patient, a man, aged 37 years, was admitted on Nov. 4th, 1905, for a compound comminuted fracture of the right humerus at the junction of the lower and middle third with a subcoracoid dislocation. There was a wound on the inner side of the arm from which much blood was oozing. The main line of fracture ran from above downwards, forwards, and outwards. Another plane of fracture ran downwards and inwards, cutting the other plane at about its upper third and separating a triangular fragment from the shaft. The lower pointed end of this separate piece was broken off by a third line of fracture. Under chloroform the dislocation was easily reduced and the rather pointed ends of the main fragments were wired together and some small fragments and débris removed. The incision which had been made through the fracture wound was partly stitched up and the rest drained with aseptic gauze. The first couple of days a large quantity of clear brownish discharge came away followed by a fall of temperature, which had been high. After this the wound steadily closed and he left hospital nearly healed, the arm being still in splints. Healing was complete at the end of December.

On March 5th, 1906, he was readmitted looking well and wound soundly healed. But the fracture was ununited, and a radiogram showed much displacement and that the triangular fragment mentioned in the first notes had slipped in between the end of the upper and lower main portions of the humerus.

On March 8th I opened up the old scar, removed the wire and the intervening loose but still living triangular fragment, and "scarfed" the ends of the main upper and lower bones, and united them with two wires in good position. The wound did very well and the patient went home on March 31st.

On Oct. 24th the patient was readmitted, and it was thought that the union was sound. It was also found that the head of the humerus had again slipped out and lay under the coracoid. During some attempts to reduce the dislocation, which failed owing to firm adhesions, the fracture was found to be ununited. The head of the bone was resected and the arm put up straight. This wound healed quite satisfactorily, but the fracture did not unite for some months. The Bier's bandage was then applied when he came up daily during a holiday which I had, and on my return I found it firmly united.

CASE 2.—A man, aged 56 years, was sent to me a year ago for transverse fracture of the tibia. This had occurred in the hunting field from the kick of a neighbour's horse and was compound. He had been admirably dressed and the limb put up in splints by Dr. H. Fraser of Harpenden. I had little to do but to cleanse the wound, cover it with boric lint, and put the leg in side splints. The wound healed without reaction and the splints were, at the end of eight weeks, put into a Croft's plaster apparatus. Union had not taken place when the patient went to Brighton. I requested the surgeon under whose care I placed him to remove the Croft in a week or two and report progress. This he did and told me there was no union. I then asked him to use Bier's bandage and report further. This he did a few weeks later, informing me that the tibia was firmly healed.

CASE 3.—The patient, a man, aged 44 years, was admitted for transverse fracture of the left humerus a little above the middle, which was ununited. He had sustained the fracture three and a half months before from a fall on the shoulder. The arm was in splints until a week before he came in and was then found, after passive movement, to be ununited. The ends of the bone were found to be in good position, but there was very little surrounding callus. On the next day I applied Bier's bandage above and below the fracture for about one hour each day and later for one and a half hours twice a day. On April 10th the note is that "union seems to have taken place." The hyperæmia was continued as before. On April 29th the union was quite sound and the patient went home.

CASE 4.—A young man, aged 21 years, fell from his bicycle in Suffolk on July 24th, 1910, and sustained a bad transverse fracture of the right humerus with much laceration of periosteum and soft parts, and with extensive subcutaneous and intramuscular bleeding. He was put up with an aseptic dressing and splint and sent up the next day to University College Hospital. Position was good, but it was doubtful whether asepsis had been secured. There was an open wound on the front and inner side of the middle of the arm, which, after the usual cleansing and painting with tincture of iodine, was enlarged. Much laceration and blood clot were found and a transverse fracture. This was wired firmly in excellent position and the wound was closed. It was necessary to let go a couple of stitches a few days later as there was a considerable amount of altered blood clot and turbid serous effusion and rise of temperature. After this the temperature fell to normal and remained so until the end of the case. The wound, however, continued to secrete and the bone failed to unite. When I returned from my summer holiday it was still without callus and there was a small sinus. A radiogram showed that a small portion of both ends had necrosed. The wound was now opened up on Sept. 29th, 1910, sufficiently to remove the sequestra and the loosened wire. A rod of aluminium was then placed between the two ends in the medullary cavity to keep the fragments in line, but they were not further secured by wire, being simply forced together over the metal rod. At the end of ten days, when the stitches had been removed, the elastic bandage was applied for two hours morning and evening. The first effect was to increase the flow of serum from the sinus and to help to its rapid closure. Soon after the bones began to knit and a skiagram showed the formation of callus. Union was soon firm and the patient is now exercising his arm and is having massage to remove the stiffness and muscular atrophy following disuse. The radiograms now show a fair amount of callus which is on the increase; also that the aluminium rod has gravitated downwards somewhat, and, what I cannot explain, has escaped from the medullary cavity of the lower fragment.

To sum up, it may be accepted as fairly certain that, excepting the interposition of fragments of detached bone, of muscles or tendons, or of stripping of periosteum, the chief cause of delayed or completely arrested union of fractured bones is lack of proper circulation in the area injured. This may be due to rupture of the arteries supplying the bones, to over-tight bandages when the splints are applied, or, above all, to disuse. If the vascular supply is damaged it is plain that we cannot repair the condition. But we can further impair the proper blood-supply by improper bandaging. This is avoidable. As to disuse, as long as the fracture is insecure it is difficult to make any use of the muscles of the limb. If we could it is probable that such fractures would rarely fail to unite. We know that broken ribs, which are always in a state of movement, hardly ever remain ununited. I have never seen a case or read of one. When then for any of the last causes mentioned repair has not taken place, it is natural to turn to mechanical measures to increase the hyperæmia of the parts involved. In the past we know that this has been done, either by forcibly rubbing the fractured ends together to excite a fresh traumatic hyperæmia, or by pegging the bones with ivory nails or by massage. These measures have succeeded in many cases and failed in others, in the last case often on account of suppuration. It is only claimed for the elastic bandage that it produces a greater vascularity of all the parts involved easily and without risk if properly done.

The question how long it should be kept up is variously answered. In my own experience all the effects desired have been obtained by the use of the bandage for about two hours morning and evening.

Two of these cases have been shown at the Medical Society.

Harley-street, W.

TENTH CONGRESS OF THE GERMAN ORTHOPÆDIC SURGERY SOCIETY.—The Tenth Congress of the Deutsche Gesellschaft für Orthopädische Chirurgie will take place as usual on the Tuesday of Easter week, April 18th, the day before the assembly of the German Surgical Society, in Langenbeckhaus, Ziegelstrasse, 10 and 11, Berlin. The hour for the opening of the Congress is 9 A.M. The President for 1911 is Dr. H. Hoeftman, Königsberg i. Pr.

# THE TREATMENT OF SKIN DISEASES BY HYPERÆMIA (BIER'S SYSTEM).

BY W. KNOWSLEY SIBLEY, M.A., M.D., B.C. CANTAB., M.R.C.P. LOND.,

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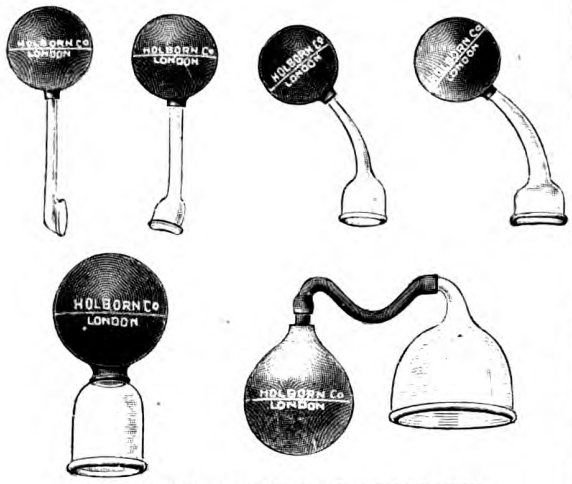
I PUBLISHED in THE LANCET of August 29th, 1896, the first results obtained after two years' work on the hyperæmic treatment of rheumatic and other affections by the local application of dry hot air, and I have written several papers on the same subject since. This treatment, with various modifications, has now been adopted in most countries of the civilised world. Previously to the above time Professor Bier of Kiel had published some papers on a hyperæmic treatment which he produced by the application of compression bandages (*Stauungsbinde*), and which is now known as "Stauungs-hyperaemie," or obstructive hyperæmia. Of more recent date he, in conjunction with Professor Klapps, has devised a means of producing the same passive or venous congestion of quite local areas by a modification of the old cupping-glass method. With this object they have invented a series of easily adjustable exhaustion or suction glasses made of various shapes and sizes according to the part to be treated. These consist of a glass tube or cup, to one end of which a rubber ball is attached, and by varying the compression of the ball it is easy to produce a graduated degree of negative pressure, or partial vacuum, or exhaustion of the skin area to which the glass is applied. Larger apparatuses for treating more extended areas or for obtaining a more complete exhaustion are made with a detachable exhaustion pump, in place of the rubber ball.




Some suction cups used in the accompanying cases.

At the present time there are three methods for producing local hyperæmia—namely, (1) by the application of elastic bands or bandages; (2) by means of suction or cupping apparatus; and (3) by hot air. The first two agents produce a passive or venous hyperæmia, and the third an active or arterial hyperæmia. I have been trying some of Bier and Klapps's cups in the treatment of numerous forms of skin diseases and with results so satisfactory that I consider they are worth recording, in order that other workers in the field of dermatology may repeat and extend their use.

I suppose it must be admitted that the majority of skin diseases—in fact, perhaps nearly all, except those caused by parasites, either animal or vegetable—are the result of malnutrition of one or more of the complicated components which together form the epidermal covering of the human body. The general principle which underlies all scientific treatment of skin diseases—whether by external or internal remedies or by a conjunction of both—is to improve, by appropriate means, the nutrition of the affected superficial area. This is easily accomplished by producing an increased blood-supply to the part, and no simpler method is known than inducing this passive congestion or artificial hyperæmia by the scientific application of an exhaustion apparatus, giving rise to a partial vacuum.

In most of the cases treated, I have continued with the local application of the more or less routine ointments and lotions, both to the regions of the skin to which the cups have been applied, as well as to the other lesions—making a point especially of applying the local remedies soon after the hyperæmic treatment, and before the parts have returned to their previous condition. In this way it has been possible to compare the regions treated by hyperæmia in addition to those treated by ointments alone. I have also used this method in many cases in which I was treating some of the lesions with X rays. I have usually made a rule to treat all the lesions with the same ointments, and to begin with, only the eruptions on one side of the body with the suction cups, generally choosing the worst lesions for the new method.

The treatment has been given on the principle of applying exhanstion for various repeated periods of about five minutes' duration with three minutes intervals; usually two to five applications at each *séance*, but no sitting continued for more than an hour or repeated more than once a day. From the nature of the lesions the majority of the patients treated did not suffer any pain or even inconvenience. It was possible to produce a considerable amount of local congestion when desirable—that is to say, the treatment could be continued for longer periods, and with much greater amount of exhaustion of air in the apparatus than is possible or desirable when treating inflammatory lesions such as boils or abscesses. Nevertheless, the applications have to be made with intelligence and caution in order to produce the best results. In the majority of the hospital patients it has only been practical to treat them twice a week; in a few daily treatments have been administered.

I have so far used this treatment in the following classes of diseases, and with the results given under the separate headings, in which a few cases are briefly described to illustrate the chief features: acne, acne rosacea, alopecia areata, chilblain, eczema, keloid, lupus vulgaris, milium, scars, seborrhœa, sycosis, syphilis (tertiary), ulcers (chronic), urticaria (chronic and pigmentosa).

CASE 1. *Acne.*—A female, aged 24, had suffered from severe acne of the face for nine years. She had also some seborrhœa of the scalp. I prescribed a plaster mull of salicylic acid and creasote to be put on at night and a sulphur lotion afterwards to be applied. The right side of the face was subjected to the hyperæmic treatment, this being the more indurated of the two cheeks. After a month the right side was considerably softer and less indurated than the opposite one.

CASE 2. *Acne.*—A girl, aged 16. The rash appeared on her face five years ago; three years ago it had spread to her back, shoulders, and chest, being especially severe over the upper part of the breasts, with considerable general infiltration of the cheeks, forehead, and chin. After a fortnight's daily application of suction glasses, followed by rubbing in an ointment composed of sulphur and salicylic acid, all the areas treated were better than they had been for many months—in fact, parts of the face were cured of infiltration and almost freed from comedones.

CASE 3. *Acne.*—A youth, aged 19, had suffered for five years from severe acne all over the face and neck and considerable general infiltration of the skin. He was ordered a sulphur and salicylic acid ointment for all the diseased regions. I treated the right side of his face with X rays and the left with suction cups. After a few weeks' treatment both sides had considerably improved, especially the left, which had become less infiltrated, and the superficial tissues softer than those on the right side.

CASE 4. *Acne rosacea.*—A woman, aged 38, who had suffered for nine years from a very persistent eruption of the face, especially on the tip of the nose and the chin. The nose was always cold to the touch and very congested at the tip, and the chin was covered with groups of pustular acne, with general redness and infiltration of the surrounding tissues. She was ordered a salicylic acid paste, and after a very few applications of the cups to the nose and chin a very considerable improvement took place. For some time after each treatment the surface of the nose remained warm to the touch, and when last seen the condition was practically cured, but she continued herself to apply a small cup to any fresh spot which appeared and afterwards rubbed in the application.

CASE 5. *Alopecia areata.*—A man, aged 32. He stated that he lost all the hair of his head and face when he was 4 or 5 years old, and from this time he was quite bald till he was 14 years of age, when the hair of his head grew again, but not that of his eyebrows. For the last two years he had had some six patches of complete baldness on the vertex and occipital regions. He had been under treatment ever since, but with no improvement, and for some months had been applying lysol lotions of various strengths to the patches, together with various internal remedies, such as thyroid, &c. A suction cup was applied to the patch on top of the head, and after six weeks of daily treatments a fine growth of hair over the bare surface was visible, the other patches remaining as bald as ever. The skin of this region had lost the shiny appearance and looked altogether darker and more natural in colour.

CASE 6. *Alopecia areata and psoriasis.*—A woman, aged 37. She had a severe attack of rheumatic fever when she was 25 years of age, which left her much crippled for some months afterwards. She had suffered from psoriasis since childhood, always on the front of the knees, and at

times on the body and scalp, she never being entirely free from it. About six months ago she lost the hair from the nasal quarter of the left eyebrow, and a circular patch of complete baldness appeared in the centre of the outer half of the same eyebrow. She applied a small suction cup to the patch of baldness daily, and afterwards applied a weak lysol lotion, and in a few weeks several new hairs appeared on the patch, and at the time of writing it had more or less disappeared and is hardly recognisable except on close inspection. She also applied the hyperæmic method to some very persistent psoriasis spots over the knees, and then rubbed in a tar ointment, and she is now practically cured of the psoriasis.

CASE 7. *Keloid.*—A boy, aged 8, sent to me by Dr. G. Dawson. The child had fallen and cut his face on the pavement when he was five years old, and the resulting scar had gradually extended ever since and now measured 5·25 cm. by 4·50 cm. extending, involving, and everting the right lower eyelid, over the side of the cheek almost to the nose. The edges of the keloid were very hard, infiltrated, and much raised above the surrounding tissues. I treated the upper part of the growth with X rays, and the lower with suction cups, and came to the conclusion that the lower part became softer and improved more rapidly than the upper.

CASE 8. *Lupus vulgaris.*—A Jewess, aged 13, had a small spot on the tip of her nose, which was very red at the time and appeared after a severe cold three years ago. She attended at the London Hospital and afterwards for two years she had X rays applied at the Metropolitan Hospital, but the ulceration continued to spread. When first seen in July last the whole nose was covered by dry scabs covering an unhealthy ulcerated surface. She was ordered carbolic oil and a lanolin ointment. As soon as all the scabs had come away I touched parts of the ulcerated surface with solid $CO_2$, improvement soon showed itself, but the tip of the nose always remained cold. Bier's suction cups were afterwards applied, and in a short time the whole ulcerated surface had healed over. I gave her one application of the X rays during the treatment.

CASE 9. *Lupus vulgaris.*—A boy aged 5. This case was sent to me for treatment by Dr. A. Eddowes. Eighteen months previously the boy had an attack of measles, and a few weeks after this patches of lupus appeared in different parts of the body. The first came on the centre of the right cheek, then one on the left. Others shortly afterwards developed on the buttocks, thighs, elbow, wrist, and lastly on the chest. There were at this time 13 distinct lupus infiltrations which had not gone on to ulceration, but some were much raised from the surrounding skin and were threatening to break down. I treated the patches on the left cheek, elbow, and wrist with X rays, and those on the right cheek and leg and left buttock with suction cups. He was ordered a carbolic acid lotion and white precipitate ointment to apply to all the lesions. At the time of writing all the areas specially treated have considerably improved and some are nearly healed. Especially is this the case with the patch on the left buttock, where the lesion, which originally measured 2 cm. by 1·125 cm., is now only 1·25 cm. by 0·75 cm., the rest of the area being covered by a thin pale scar. The lesion on the right cheek measured 3·125 cm. by 2·25 cm., and is now 2·25 cm. by 1·80 cm., and the centre has healed. The one on the left cheek (which had been treated for eight weeks with X rays) had measured 3·5 cm. by 2 cm.; it is now 3 cm. by 1·75 cm., and there is no healing or scarring seen in the centre of this patch.

CASE 10. *Lupus vulgaris and scars.*—A woman, aged 27. She had suffered from a "red nose" for some years, and stated that the skin over it often cracked. Six months ago a pimple appeared on the left side of the tip of the nose, which soon became an ulcer, which had persisted in spite of all treatment. I am treating her with applications of a suction cup followed by X rays. Here, again, before treatment the tip of the nose is cold, but after a few minutes' hyperæmic treatment it becomes warm. She has also several scars under her chin and side of neck, the result of suppurating glands in childhood. There is one especially depressed scar under the centre of the chin, to which I am also applying the suction cups with gratifying results, the scar not being so depressed and disfiguring as before, and the ulceration of the tip of the nose has healed. This patient gave a positive von Pirquet's reaction.

CASE 11. *Milium.*—A girl, aged 6, with milia of cheeks and chin. Suction cups were applied to the areas of the lesions, and afterwards salicylic acid ointment was rubbed in. After a month's treatment all the milia had disappeared. It was noticed that at first the application of the exhaustion cups made the milia much more prominent for the time being, and so it was easy to see where to apply the ointment.

CASE 12. *Psoriasis.*—A woman, aged 35, who had had psoriasis for 16 years. She was in the hospital for three months 12 years ago, and it was nearly cured when she came out, but it never completely disappeared, and had been much worse lately. Recently it had been on her arms, legs, and abdomen. I selected some of the most indurated patches above the right knee-joint and over the patella and applied the cups. After treatment she rubbed in a compound tar ointment. The lesions treated by the hyperæmic method certainly reacted more satisfactorily than the others, and after a few weeks they had disappeared.

CASE 13. *Seborrhœa.*—A woman, aged 31, with seborrhœa of the scalp and a very persistent patch on the sternum and another between the shoulders. She also had some lichen planus on the right leg. I applied the cups to the patches on the sternum and between the shoulders, and she rubbed in some salicylic acid paste afterwards and in a few weeks they disappeared.

CASE 14. *Seborrhœic eczema.*—A woman, aged 59, who had been suffering for some months with a very irritable indurated eruption nearly all over the face, trunk, and limbs. The present attack began with a patch on the front of the right wrist, then one on the leg, and it had gradually spread over nearly the whole body. When first seen she had a considerable amount of induration of the face which gave her a leprous appearance, suggestive of an early case of mycosis fungoides. However, the face has very much improved. I have treated the worst lesions with X rays, and selected a few very indurated patches for the application of the suction cups, with very beneficial results. She has applied a paste consisting of salicylic acid (10 grains to the ounce) and most of the lesions have disappeared and the irritation has subsided.

CASE 15. *Chronic ulcer.*—A man, aged 56, who had suffered from varicose ulcers of the leg on and off for 30 years. At the time of beginning treatment he had a large ulcer, which he had had for six months, and a very indurated smaller one for 18 months. The larger one I treated with X rays, and the smaller one with suction cup. After the first applications a good deal of pus was drawn out, but later only clean serum exuded, and the ulcer healed up in a month.

*Summary.*

From my observations I have formed the opinion that practically all chronic forms of skin diseases are benefited by the hyperæmic treatment before applying local remedies. The action of ointments and lotions is considerably facilitated if a local congestion of the part is produced before they are applied. This local hyperæmia probably acts in two ways. In the first place, by producing a passive congestion, it increases the blood-supply, and so improves the nutrition of the part, and at the same time encourages the removal of deleterious products by the venous blood. In the second place, this local hyperæmia assists in the local action of the drugs when they are afterwards applied.

Of the cases so far treated, it would appear that the most satisfactory results have been obtained in psoriasis, especially in some very old-standing cases in which the lesions were very chronic and localised. We so often meet with cases of this complaint of many years' standing where some very persistent lesions are limited to a small area, such as the knees or elbows, and which resist all treatment. This is the class of case specially benefited by this method.

Some cases of lupus vulgaris have shown rapid improvement—in fact, from some recent observations the hyperæmic method showed earlier and much more satisfactory results than the X rays had done. Acne, both diffuse and local, reacted well, but these cases required a considerably greater amount of congestion and more frequently repeated treatments, both general to a large affected area, and afterwards local to the individual and more persistent comedones and pustules.

The immediate result of the local treatment is to produce a venous congestion of the skin, which increases the action of the sudoriferous glands, and gives rise to a varying degree of perspiration. This varies with the nature of the lesion and the degree of hyperæmia produced. In some conditions only an almost imperceptible amount of sweating results—perhaps just sufficient to produce a slight haziness on the sides of the cupping glass without a visible sweat on the skin. In others, such as many eczemas and seborrhœas, a profuse perspiration is quickly produced, and after a few minutes the whole part is bathed in sweat. In other cases the ordinary sweat is replaced by a serous exudation. In some instances of non-ulcerated lupus, which as a class perspire very freely under the treatment, a blood-stained serum exuded after a short time, and for this reason the cases require to be very carefully treated and only for very short periods at a time, one minute or so being usually sufficient.

I believe future research into the different reactions of various skin lesions under hyperæmia will be of considerable scientific value in assisting and defining the similarities or differences between some of the less easily distinguished skin diseases. These physiological or pathological reactions of various lesions may not only become a help to the pathologist but also of considerable aid to the diagnosis of some, at present, rather ill-defined and readily confused morbid states.

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Duke-street, W.

# ON THE EXTERNAL APPLICATION OF MAGNESIUM SULPHATE IN THE TREATMENT OF ERYSIPELAS.[1]

BY KHAN BAHADUR N. H. CHOKSY, M.D. (HON. CAUSÂ) FREIBURG-I-BR., GERMANY,

SPECIAL ASSISTANT HEALTH OFFICER, BOMBAY MUNICIPALITY; IN CHARGE OF ARTHUR ROAD INFECTIOUS DISEASES AND MARATHA PLAGUE HOSPITALS, BOMBAY.

THAT the common and homely drug known as Epsom salts possessed any other property save the one usually associated with it was scarcely known up to within three years ago. The anæsthetic effects resulting from its subcutaneous application, however, induced Dr. Henry Tucker, of the Philadelphia General Hospital, to apply it for the relief of pain in local inflammatory conditions, with rather surprising results. For, apart from the relief of pain and discomfort, it was found that it controlled and eventually led to the cure of the inflammatory process. Numerous observations in gonorrhœal epididymitis and orchitis, gonorrhœal rheumatism, acute articular rheumatism, neuritis, &c., gave equally satisfactory results.[2] Erysipelas[3] and cellulitis were the other affections in which a marked beneficial influence was observed from its local application. And further, on account of its antispasmodic and analgesic properties, magnesium sulphate has been administered by intraspinal, subarachnoid, and subcutaneous injections for the relief of spasms in tetanus, as also of the lightning pains of locomotor ataxy. Miller[4] has reported 14 cases of tetanus so treated; 11 were treated with subarachnoid injections, and five of them recovered. The author says that magnesium sulphate brings about complete muscular relaxation. This prevents rapid exhaustion and enables the patient to take nourishment. The dose is 1 c.c. of a 25 per cent. sterile solution to each 25 lb. of the body weight of the patient. Paterson[5] reports a case of tetanus, in which he used 10 c.c. of a 10 per cent. solution subcutaneously—5 c.c. in each thigh—four-hourly. The injections were found to be painful, but the spasms were greatly relieved. He thinks that probably larger quantities of a weaker solution would obviate the local discomfort of these injections.

It may be interesting to note in this connexion that magnesium sulphate, when it fails through some cause or other to act as a purgative after internal administration, gives rise to serious toxic disturbances. In a case reported by Neale[6] it was observed that after taking an ounce of the salts no purging was produced, but there was stimulation of certain motor centres causing tetanic spasm of the face and arm, together with paralysis of the inhibitory fibres of the pneumogastric to the heart, paralysis of the muscular fibres of the stomach and bladder, and of the muscular coats of the blood-vessels, as shown by the absence of the radial pulse and general cyanosis.

In a further communication Dr. Tucker has described its effects in 19 cases of erysipelas complicated with alcoholism, acute nephritis, myocarditis, pneumonia, &c., with but three deaths, and in 35 uncomplicated cases without a single death. The latter recovered within two to seven days, pain and the usual local discomfort having been relieved in a few hours. No internal treatment was given. The treatment has been applied by him and others in nearly 700 cases of various forms of inflammation with uniformly good results, and he claims the following advantages for it in almost all cases:—

Firstly, the drug can be obtained at any country store, is easily made into solution, is inexpensive, non-toxic, and clean; it is also easy of application if the directions are properly followed.

Secondly, the patient promptly obtains relief from the distressing local symptoms usually present.

Thirdly, the temperature rapidly falls to normal usually during the second twenty-four hours, and does not rise again, thereby eliminating possible complications from fever.

Fourthly, internal medication is not indicated in uncomplicated cases, the only treatment being a milk diet for the first few days, or, to be more accurate, until the temperature reaches normal.

*Method of application.*—A saturated solution of magnesium sulphate in water (preferably strained through muslin) is to be applied round the limb or on the face as a mask, extending well beyond the inflamed area in 10–15 layers of gauze or a thin layer of absorbent cotton or lint, and covered with oiled-silk or wax-paper. The dressing should be wetted as frequently as it gets dry, about once in two hours. It should be removed once in 12 hours for inspection and immediately reapplied. The affected area should not be washed during treatment. Dr. Tucker says that the attendants complain of partial loss of sensation and tingling of the hands and arms lasting for some hours.

*Mode of action.*—No explanation is forthcoming as to how these effects are produced by magnesium sulphate. The editor of the *Therapeutic Gazette*, from personal experience and reports of other observers, whilst endorsing the utility of the treatment, that it certainly gives extraordinary results in the treatment of acute articular rheumatism, erysipelas, and the relief of pain associated with local inflammation, admits that the method, like several others in common use, is purely empirical, and that the local action of magnesium sulphate cannot be explained on any known experimental or other data. Nor is its osmotic influence adequate to explain these effects, as other salts having the same action do not bring about the same results. We must for the present at least be content with the empirical use of the method, leaving the explanation of its action to the future.

As erysipelas and cellulitis have been lately included among the infectious diseases that have to be received at the Arthur-road Hospital, I had occasion to give this method a fair trial in a limited number of cases. Erysipelas may be defined, in the words of a recent observer, as an acute inflammation of the epidermis due to the presence of one of the organisms of the streptococcus class, of which the streptococcus pyogenes is the most frequent example. Cellulitis is a strictly comparable inflammation of the cellular tissues, and when the inflammatory process involves both the epidermis and the cellular tissues the condition of cellulo-cutaneous erysipelas results. My observations extend to 72 cases only, seven of whom were moribund on admission and will therefore be excluded from consideration; 35 cases belonged to the cellulo-cutaneous type, several of them of long duration, with extension and deep suppuration and sloughing, especially of the upper and lower limbs. These cases, as was to be expected, did not respond well to the treatment. Of the remaining 30 cases, most of them were of erysipelas and a few of cellulitis. The solution of magnesium sulphate was applied according to the above directions, and it was found to have a marked effect in lessening the pain and in preventing further extension except in a very few cases of the severest type. No special internal medication was administered, except such as was necessitated by the complications present, such as pneumonia, exhaustion, cardiac weakness, &c. The improvement within a few hours after the application was extremely well marked in erysipelas of the face and head, with œdema in the eyelids, &c., the pain and swelling considerably lessening within one to three days with fall in temperature. In six cases, however, the inflammatory process was not controlled, and extended beyond the original area in spite of the treatment. A few illustrative cases will serve to demonstrate the action of the application.

CASE 1.—Erysipelas of the face and head; nose considerably swollen; duration four days. Immediate and steady improvement with fall in temperature from 103° F. to normal in two days. Discharged in 12 days.

CASE 2.—Post-operative erysipelas after mastoid operation; transferred from the Jamsetjee Jeejeebhoy Hospital on the fourth day of illness; extensive cellulo-cutaneous erysipelas invading the head, face, and neck. Much improvement in four days; subsequent extension downwards, involving the chest and back and both arms, with rise of temperature. Polyvalent antistreptococcus serum injected in addition: 280 c.c. in six injections, one each day (60 c.c., 60 c.c., 40 c.c., 60 c.c., 40 c.c., 20 c.c.). Rapid improvement thereafter. Convalescence tardy; discharged after seven weeks. The temperature chart shows remissions from 102° F. to 99° until the seventh day of illness, when the temperature came down to normal, rising again on the eleventh and fourteenth days to 101° and 102° respectively.

CASE 3.—Cellulo-cutaneous erysipelas involving both thighs and vulva; duration 15 days. Considerable relief with fall of temperature in four days; slight extension downwards, promptly controlled; discharged in three weeks. The chart shows that on the fourth day after admission the temperature came down to normal from 103·6° F. It rose again to 102° on the twentieth and twenty-second days of illness, and thereafter remained at the normal level.

CASE 4.—Cellulo-cutaneous erysipelas of face and neck; duration four days. Steady improvement and fall of temperature. After an interval

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[1] A paper read before the Bombay Medical Union, Nov. 27th, 1910.
[2] The Local Use of Magnesium Sulphate Solution in Inflammation, by Dr. H. Tucker, *Therapeutic Gazette*, April, 1907.
[3] Ibid., June, 1908.
[4] American Journal of the Medical Sciences, October, 1908.
[5] THE LANCET, April 2nd, 1910.
[6] THE LANCET, August 15th, 1896.

of three days there was extension downwards to the chest, with elevation of temperature; compresses reapplied with good effect. Rapid convalescence; discharged in three weeks. The chart shows oscillations of temperature between 100° and 102° F. for six days corresponding to the extension of the disease to the chest.

The above four cases generally bear out all that has been claimed for this form of treatment. In almost every instance the immediate effects of the application of magnesium sulphate solution were extremely beneficial. Pain and swelling abated, fever decreased, and extension of the infection was controlled in the majority of cases. The results, however, have not been so uniformly good as Dr. Tucker's, inasmuch as advanced and neglected cases, as also cases of the graver type, so largely prevailed. In six cases, for example, the inflammatory process extended so rapidly, in spite of this treatment, that antistreptococcus serum had to be injected, but only one of them recovered. The quantity injected varied from 60 c.c. to 280 c.c. Excluding the above and the seven moribund cases there remained 59 cases with 13 deaths and 46 recoveries, equivalent to a case mortality rate of 22 per cent., as compared with 15·9 per cent. in Dr. Tucker's complicated cases.

On the whole, therefore, I can confidently recommend to notice and trial this extremely cheap and efficacious method of treatment of erysipelas and cellulitis.

Bombay.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### NOTE ON A CASE OF SCLEREMA NEONATORUM.

BY R. E. SEDGWICK, M.D. CANTAB.,
HONORARY SURGEON TO THE CARLISLE DISPENSARY, ETC.

THE rarity of sclerema neonatorum justifies the publication of the clinical notes of every case, since the pathology of the condition has not yet been definitely settled.

The child was one of male twins and was 12 days old when my house surgeon, the late Dr. H. B. Stephenson, asked me to see the case with him. The twins had been healthy when born and weighed 5 lb. each. They were breast fed. The mother, aged 40 years, had had 14 children (including one previous twin-birth), of whom 11 were still living, the death of the three others being due to scarlet fever, bronchitis, and convulsions respectively. The conditions under which the family lived were poor and sordid. The child in question was noticed to be "queer" on the tenth day by the "nurse"—a neighbour—who drew attention to the peculiar stiffness of the left leg and thigh. When first seen, the child was wrapped up in blankets close to the fire. There was a tinge of jaundice in the skin and its cry was feeble and high-pitched. It had fed well and continued to do so. Both legs and both thighs were stiff and rigid, no movement of any sort being observed. The abdomen moved with respiration, but the hands and forearms were also rigid and motionless like the lower limbs. The skin of the affected limbs was normal in colour but cold to the touch, although circulation was well maintained as observable in the nails of the fingers and toes. The skin felt like soft leather, but the underlying tissues were very hard, almost bony. No impression could be made on the skin which could not be pinched up from the underlying tissues, and pressure did not vary the hardness of the muscles. Passive movement in the affected limbs was obtained with difficulty, giving an unpleasant impression of possible fracture. The funis was normal. There was a small hæmorrhagic effusion, the size of a sixpence, below the left internal malleolus and a smaller patch in the middle of the sole of the right foot. A blood count was made but with great difficulty owing to the extremely rapid coagulation. The blood was dark in colour and flowed very slowly. The result was as follows: Hæmoglobin, 100 per cent.; red cells, 4,300,000; white cells, 7800. A differential count showed a normal lymphocytosis.

The child died on the fourteenth day, and a very limited examination was allowed four hours after death. The skin was tough, parchment-like, and difficult to cut; there was no exudation on cutting through skin or muscle. In cutting the muscle a sensation was experienced as of drawing the knife through very stiff dough. All the muscle was very pale on section. No obvious abnormalities were noted. Pieces of skin, muscle, liver, and kidney were examined microscopically. The muscle shows a little segmentation and an occasional breaking up of the nucleus, but nothing else to comment upon. The other sections are practically those of normal tissue.

The muscle was sent to the Pathological Department of the University of Durham for analysis for fat. Professor R. A. Bolam reported as follows:—Muscle from thigh: weight of muscle, 0·16 gramme; weight of fat, 0·135 gramme; fat percentage, 84. Muscle from abdomen: weight of muscle, 0·395 gramme; weight of fat, 0·16 gramme; fat percentage, 40·5. Average fat percentage of normal muscle, 2·27.

The above facts would appear to show that sclerema neonatorum is not at any rate an inflammatory condition, while the extraordinary fat percentage in the muscle seems to point to a rapid chemical change which, however, does not appear to have much effect upon muscle structure.

Carlisle.

### NOTE ON A CASE OF SLIDING HERNIA OF THE SMALL INTESTINE.

BY GWYNNE WILLIAMS, M.S. LOND., F.R.C.S. ENG.,
SURGICAL REGISTRAR, UNIVERSITY COLLEGE HOSPITAL, LONDON.

THE patient, a negro, aged 25 years, was admitted to the Seamen's Hospital, Greenwich, for the cure of a right inguinal hernia. On dissecting away the coverings of the cord, what was taken to be the sac was separated out and opened, but was found to be only a serous-lined cavity which had no communication with the sac of the hernia. This latter was situated external to it and attached to it by a fibrous cord. The sac of the hernia could be made more prominent by pulling it down, and could be reduced entirely into the abdominal cavity. It contained something which felt like bowel, but it was impossible to reduce the contents without reducing the sac itself, thus showing that the bowel must be adherent to the sac wall. The hernia was of the oblique variety, the deep epigastric artery running along the inner side of the neck.

On opening the sac there was seen to be a coil of bowel adherent to the wall and a coil apparently of small intestine, but this coil had no mesentery, being only surrounded by peritoneum on three sides. On tracing it towards the middle line a mesentery gradually appeared, while in the opposite direction it remained in the same condition as in the sac until it ended in the cæcum. This, as far as could be made out through the limited opening in the abdominal wall, also had no mesentery. The portion of the ileum without a mesentery was about six inches in length and was bound down to the parietal peritoneum of the iliac fossa which had been dragged down into the hernial sac. There were no other adhesions present, the appendix was quite free, the peritoneum was perfectly smooth—in fact, there was nothing to suggest that the condition was the result of inflammation, and one must conclude that it was a congenital abnormality. The intestine being fixed to the iliac fossa, the coil in the sac was adherent posteriorly. The upper part of the sac was cut away and the upper cut edge of peritoneum stitched to the peritoneum reflected from inferior aspect of the ileum. The canal was closed by Bassini's method.

I cannot find any account of this condition either from the surgical or from the anatomical aspect.

New Cavendish-street, W.

### NOTE ON A CASE OF SUPPURATIVE PYLEPHLEBITIS.

BY G. A. BROGDEN, B.A. CANTAB., M.D., CH.B. EDIN.

THE following case may be of interest since it records an instance of recovery from acute suppurative pylephlebitis.

The patient, a boy, 12 years of age, was under my care suffering from an attack of appendicitis. During convalescence and after the temperature had been normal for several days it ran up to 103° F., he had a rigor, and complained of pain, which was localised in the epigastric region. A smooth, well-defined swelling, very sensitive to pressure, became palpable in this region. A diagnosis of acute suppurative

pylephlebitis was made, and a surgeon who was called in suggested an operation as a last resource. I was present at the operation, and the following is an extract from notes made at the time. The liver was exposed by a mesial incision in the epigastric region. The right lobe appeared normal, but the left lobe was very swollen and intensely congested. There was no peritonitis. A trocar and cannula were introduced deeply into the liver substance, and a small quantity of very fœtid pus escaped. The opening thus made was slightly enlarged, a half inch drainage-tube was inserted, and the abdominal wound was closed. The patient remained very ill for three days; then the temperature began to fall, and he made an uninterrupted recovery. A little pus escaped from the wound for about a week. The tube was removed altogether at the end of a fortnight. The condition of the appendix was not ascertained.

Oadby, Leicester.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### MEDICAL SECTION.

*Loss of Abdominal Movements in Pericarditis.*

A MEETING of this section was held on Jan. 24th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. A. E. GARROD read a paper on the Auscultation of Joints, which was published in THE LANCET of Jan. 28th, p. 213.

Dr. W. ESSEX WYNTER read a paper on Absence of Abdominal Respiratory Movement as an Indication of Pericarditis. He said that in a disorder so serious and attended with so little obvious indication as pericarditis, an additional and manifest physical sign, provided it was to be trusted, should be especially welcome. The sign suggested in this communication was inhibition of the action of the diaphragm, indicated by suppression of normal abdominal respiratory movement, and had probably been hitherto overlooked through examination being unduly restricted to the chest in such cases. Loss of abdominal respiratory movement as an indication of disease, except in paralysis of the phrenic nerves, had been to a great extent monopolised by observers in connexion with peritonitis and acute abdominal lesions. It was largely from that standpoint that Dr. William Pasteur dealt with that phenomenon and the resulting thoracic lesions in his highly instructive Bradshaw lecture. Primary thoracic disease, however, had its share in causing suspended function of the diaphragm, though in the majority of instances affecting the lung and pleura that was one-sided, and the influence on abdominal movement consequently less marked. In acute pericarditis, on the other hand, the cessation of phrenic action was bilateral, and consequently absence of abdominal movement was as obvious as in abdominal disorders, albeit other abdominal manifestations, such as muscular rigidity and general tenderness, were lacking. There was no doubt that when attention was directed to the matter and a definite note made as to the presence or absence of abdominal movement, that feature would be found fairly constant in acute pericarditis, especially that with fibrinous exudate. When the front of the body was fully exposed the stillness of the abdomen was very striking, suggesting peritonitis, unless, as sometimes happened, there was inspiratory recession, which might mislead, unless the want of correspondence with the movement of the upper chest was noticed. The inertness of the diaphragm was not merely inferred, but by X ray screen examination could be actually observed, the midriff mounting high into the thorax and exhibiting no contraction, and in some instances an actual rising of a quarter of an inch with each inspiration. In one case the contents of the upper abdomen, such as the kidneys and opaque masses in the intestine, could be seen to participate in that upward inspiratory movement. Concomitant and indeed consequent phenomena were: a tendency to dilatation of the hollow abdominal organs, especially the stomach, collapse and loss of function in the lower lobes of the lungs, slight upward displacement of the heart and of the organs beneath and in contact with the diaphragm. Loss of abdominal movement, as a sign of pericarditis, was the more valuable in that it might precede and outlast the other indications and so afford grounds for anticipatory or retrospective diagnosis. The condition afforded a reasonable explanation of the cyanosis and dyspnœa so usual in the complaint and of the upright position so commonly assumed by the patient. The former expressed the effect of respiration restricted to the function of the upper lobes of the lungs, and the latter pointed to an unconscious effort on the part of the patient to utilise the weight of the abdominal viscera to depress the passive diaphragm and enlarge the thoracic area. Restriction of abdominal movement was apparently more marked in fibrinous than in effusive pericarditis, movements being more productive of local irritation in the former than in the latter condition, as was the case in other serous sacs, such as the pleura and peritoneum. Incidentally the observation of the existence of a limited amount of serum in at least one of the cases by X rays, in the absence of other clinical indications, was suggestive that extended observations might show that to be more frequent than was formerly supposed, for in the recumbent posture a few ounces of fluid would naturally gravitate to the lowest part of the sac, and scarcely reveal its presence over the front of the heart.

Dr. PERCY KIDD said that he had a strong conviction that he had seen a motionless abdomen in cases of pericarditis.

Dr. M. A. CASSIDY said he had seen two cases diagnosed as suffering from acute abdominal lesions which turned out to be instances of pericarditis.

Dr. NATHAN RAW said that after receiving the notice of the paper on the diary card sent out by the society he had seen a case of acute pericarditis in which the abdomen was quite fixed, the recti muscles being quite tense.

Dr. R. HUTCHISON said that the loss of movement did not occur in all cases of pericarditis. Perhaps the loss of movement was noticed when the pericardial diaphragmatic surface was affected.

Dr. A. F. VOELCKER said he followed Dr. Hutchison in what he had said about the absence of movement of the abdomen in pericarditis.

Dr. JOHN FAWCETT thought they should be cautious in drawing conclusions in the early stages of cases, because some of these cases were suffering from pneumococcal peritonitis in which the pericarditis was only a sign of a further infection.

The PRESIDENT said that there were genuine abdominal cases from which some spread of inflammatory abdominal process might take place through the diaphragm into the pericardium.

Sir JOHN BROADBENT drew attention to the fact that he had seen a pericardial case in which on a deep inspiration some abdominal movement took place in the lower part of the abdomen.

Dr. ESSEX WYNTER concluded his reply by saying that he was not prepared to say that every case of pericarditis would show loss of movement in the abdomen.

### OTOLOGICAL SECTION.

*Bacteriology of Chronic Post-nasal Catarrh.—Exhibition of Cases.*

A meeting of this section was held on Jan. 20th, Mr. ARTHUR H. CHEATLE, the President, being in the chair.

Mr. C. E. WEST read a paper entitled "The Bacteriology of Chronic Post-nasal Catarrh—a Preliminary Study from 50 Cases." He said that the material for examination was obtained by means of a specially devised post-nasal cannula shielding a sterile swab, which could be made to protrude when the cannula was in the naso-pharynx and could be withdrawn into its sheath before the instrument was removed from the mouth. Pneumococci were found in nearly 70 per cent. and were predominant in 36 per cent. of the cases. Streptococci (undifferentiated) were isolated in 24 per cent. Staphylococcus aureus occurred, generally with pneumococci and streptococci, in 26 per cent. Friedländer's bacillus was found in 12 per cent., being predominant in 6 per cent. Micrococcus catarrhalis appeared in 10 per cent. After contrasting these with control cases Mr. West concluded that the flora did not appear to differ materially in kind from that found in the average naso-pharynx. He hoped by further researches to furnish data on which broader deductions could be based.

Dr. W. MILLIGAN described two cases of Otitic Cerebellar

Abscess, which recovered after operation, and two cases illustrating the surgery of labyrinthine infection.

The PRESIDENT showed a patient with an Exostosis in the Tympanic Cavity, and in conjunction with Mr. G. J. JENKINS described a unique case of great importance in which disease in a large sinus tympani caused persistence of discharge after the radical operation. Caloric tests were applied by a copper conductor and ethyl chloride spray to the exposed inferior crus of the posterior semicircular canal.

Mr. CHICHELE NOURSE presented a boy who had recovered from a localised Infection of the Lateral Sinus without ligature of the jugular vein.

Dr. G. C. CATHCART described the application of Bier's treatment in a case of Acute Suppurative Otitis Media with signs of Mastoiditis.

Dr. DAN MCKENZIE demonstrated Barany's Lärm Apparat upon a man with apparently absolute unilateral deafness due to a cause unknown.

## OPHTHALMOLOGICAL SOCIETY.

*The Pituitary Body and Lesions of the Optic Chiasma.—Exhibition of Cases and Specimens.*

A MEETING of this society was held on Jan. 26th, Mr. G. A. BERRY, the President, being in the chair.

Mr. J. HERBERT FISHER read a paper entitled "The Pituitary Body and Lesions of the Optic Chiasma." After alluding to cases which from time to time had been reported in the Transactions of the society, Mr. Fisher dealt shortly with the development, structural anatomy, and function of the hypophysis cerebri. Reference was made to the recognition and elucidation of acromegaly by Marie in 1886 and subsequent years, and Frohlich's train of symptoms known as "dystrophia adiposo-genitalis" was sketched. Recent experimental work on the pituitary body and its function by Pavlesco and Harvey Cushing was narrated. The association between the hypophysis cerebri and other ductless glands was reviewed. Cushing deduced from his extensive work on the subject that acromegaly and gigantism were the result of hypersecretion of the anterior lobe of the pituitary gland, while Frohlich's train of symptoms was the result of hyposecretion. Mixed cases were explained on this theory. Mr. Fisher then detailed nine cases of pituitary body and chiasma lesion which he had personally observed, over a long period of time in most instances. The cases provided examples of acromegaly and of Frohlich's syndrome in complete and in partial manifestation; one complete case showed that this train of symptoms might develop in the adult as well as in the child. The cases showed the early liability to sexual disturbance and impotence in pituitary body lesions. Primary atrophy, not papillœdema, was the ophthalmoscopic phenomenon in all the cases. Some examples of very practical benefit by treatment with thyroid extract or pituitary extract were afforded. In the later cases special extract of the anterior pituitary lobe only was being tried with some encouraging signs of benefit. In every case charts of the field of vision were exhibited and the necessity of perimetry for the diagnosis was insisted on. The additional value of X rays in demonstrating enlargement and destruction of the sella turcica was well examplified by the skiagrams of the patients.—The PRESIDENT, in initiating the discussion on the paper, invited members to narrate any experiences they might have had of such cases, and particularly if they had had any in which treatment had been beneficial; there were probably many who had seen cases of bi-temporal hemianopia due to acromegaly. An interesting point was as to the proportion of cases of acromegaly in which eye symptoms were present. Did the cases showing bi-temporal hemianopia begin with changes in the pituitary body, or were they cases in which, owing to changes subsequently taking place in the sella turcica, there were pressure effects on the decussating fibres which ran to the ventral surface of the chiasma?—Mr. J. B. LAWFORD reported a case very similar to those of Mr. Fisher. The patient was a man aged 36 years, and was under observation 21 months. He came with his left eye nearly blind, there having been a history of progressive loss of sight on that side. The vision in the right eye at that time was 6/12. He was a thin man, but healthy-looking, and the loss of sight was his only complaint. There was no definite history of syphilis, although he had a sore on the penis seven years previously, but without secondary symptoms. The other special senses were normal; there was no headache, no sexual incapacity, and no signs of tabes. There was optic atrophy well marked in the left eye, and pallor of the right disc. On account of the history of a chancre, he was put on antisyphilitic treatment for a short time, but no improvement occurred, and three months later he had thyroid treatment. At that date the vision in the good eye had been reduced from 6/12 to 6/24 and 18 J., and he had lost a large part of the temporal field in the right eye. After treatment by thyroid, the central vision rose from 6/24 to 6/6, and from 18 J. to 1 J. X ray examination of the base of the skull was negative. Later there was again failure of sight, and he was again taken into hospital and put on to pituitary extract alternating with thyroid extract; Mr. Lawford did not then know of the special anterior lobe extract. The vision steadily failed, and when last seen that of the right eye had fallen to perception of hand movements. The man remained free from other symptoms of disease.—Mr. R. W. DOYNE expressed regret that Mr. Fisher did not ascertain the field for colour in those cases. In some cases showing hemianopic loss there was a normal white field. Ten or 12 years ago he published particulars of one case of acromegaly in which the field for white light was normal, but the whole of the upper sector was lost for colour. In that case, which went from bad to worse, he could tell beforehand how it was going by the loss of colour which occurred first.—Mr. J. JAMESON EVANS (Birmingham) narrated the case of a patient who suffered from hemianopia but no other change. That went on for ten years, and then he developed some other symptoms, which led to an operation for pituitary growth, but it was not successful. He thought that in some of the cases cryptorchism was present. He treated one case with thyroid extract, with loss of weight as a consequence. Pituitary extract resulted only in an increased secretion of urine. Cases of acromegaly seemed to do well on mixed treatment by thyroid extract and pituitary extract.—Mr. F. RICHARDSON CROSS said the cases seen were those in which there was pressure on the chiasma. He had a young woman in whom the menstrual function was very imperfect, and whose mental attitude was unsatisfactory. He operated on her for squint, and she had typical symptoms of acromegaly. She had been treated unsuccessfully with thyroid extract and pituitary extract, and he showed charts of the fields of vision. He also showed some charts of a patient who had pressure on the chiasma, but in whom there was no acromegaly.—Mr. F. HEWKLEY asked whether there was hyperæsthesia of the remaining sentient portion of the retina. In one case when the person passed by a street lamp in a suburb the light would apparently be very dazzling to his eyes.—Mr. FISHER replied that the cases which he had reported were not acromegalic, with the exception of the first one. He felt sure that in many instances there was enlargement or growth in the region of, if not developing in, the pituitary body and pressing on the chiasma. He regretted he did not investigate the colour fields, owing to the stress of out-patient work. But he would hesitate to accept Mr. Doyne's observations that early contraction or loss of the temporal portion of the field for colour must be an inevitable precursor of loss of vision, though if that were so it would be a great guide to prognosis.

Mr. E. A. DORRELL showed a drawing of Unusual Appearance of the Iris in Congenital Syphilis; also a Paracentesis Needle for use in preparing vaccines from the aqueous.

Mr. R R. JAMES exhibited a case of Pedunculated Tumour of the Conjunctiva.

Mr. ANGUS MCNAB showed a case of False Projection.

Mr. J. S. HOSFORD brought forward six cases illustrating Congenital Dislocation of the Lens.

## NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

*Exhibition of Specimens.—Cæsarean Section under Spinal (Stovaine) Anæsthesia.—Double Ovarian "Cold" Abscess.—Manipulation Lacerations of Uterus.*

A MEETING of this society was held on Jan. 20th, Dr. W. K. WALLS, the President, being in the chair.

Dr. H. BRIGGS showed specimens of (1) Tubal Pregnancy with Thin-walled Cyst of the Opposite Side of the Pelvis;

(2) Old Hydatid Cyst with 15 Years' History; and (3) Placental Tissue in the Uterus in Two Cases without the Usual Clinical History.

Dr. A. DONALD showed Tubercular Ovaries, Tubes, and Uterus which had been removed from a girl aged 18 years. The symptoms were mainly continuous uterine hæmorrhage for three months with pelvic discomfort. There was some loss of flesh but not very marked. Examination revealed a tense swelling in the pouch of Douglas continuous with a tender mass in the right iliac region. On opening the abdomen on July 27th, 1910, two ovarian abscesses were found firmly united to one another, to the uterus, and to surrounding structures. The adhesions were so dense that the only way of removing the tumours was to work from one side of the pelvis to the other, removing the left appendages, uterus, and right appendages in one mass. The patient made a good recovery and at the present time (six months after the operation) was in good health. The pathological examination by Dr. Fletcher Shaw showed the presence of giant cells and small-celled infiltration in both tubes, in a large lymphatic gland attached to the mass, and in the endometrium.

Dr. J. B. HELLIER showed a specimen of Dermoid Cyst of the Right Ovary, Simple Cyst of the Left Broad Ligament, and Bilateral Papillomatous Ovarian Disease.

The PRESIDENT reported a case of Cæsarean Section under Spinal (Stovaine) Anæsthesia, mitral stenosis and kidney disease rendering the patient a bad subject for general anæsthesia. The operation was performed when the patient was about eight months pregnant, as there was great dyspnœa, accompanied by marked water-logging of the lungs, general œdema, and a large amount of albumin in the urine. The patient made a good recovery and her general condition was greatly relieved. Unfortunately the baby died in a convulsion when three days old.

Dr. WILLIAM FLETCHER SHAW showed a case of apparently Double Ovarian Abscess which occurred in a patient without any rise of temperature or pulse or general malaise. The walls of the abscess cavity were hyperæmic but showed no granulation tissue. The contents were chiefly colloid material with a good number of leucocytes; no micro-organisms were found. He raised the question whether these apparent abscesses without general symptoms were really due to micro-organismal infection or were simple cysts which had rapidly enlarged, their contents merely assuming the appearance of pus.

Dr. A. J. WALLACE related two cases in which Manipulations carried out to effect delivery had produced serious Lacerations of the Parturient Uterus. A primipara, aged 31 years, was sent into the maternity hospital with the history that labour had begun 48 hours previously. The midwife summoned medical assistance and then attempts were made to deliver first with forceps, then by version. It was thought that a tough fibrous band divided the uterus into two halves and that this prevented delivery. The patient was suffering from profound shock; her pulse was 140, and there was some vaginal bleeding. A deep tear was found in the posterior vaginal wall, the cervix was badly lacerated, and the anterior aspect of the retraction zone was torn away from its attachments, the retraction ring forming the band described. A leg was brought down and delivery effected, but the patient's condition did not warrant further interference, apart from her being "suspect" as regards infection. Death occurred three days later from sepsis. The second case was that of a woman, aged 40 years, who had had five children. At the onset of labour a breech presentation was converted into a vertex by external version. Inertia uteri was present throughout, necessitating manual dilatation of the cervix and the use of forceps. On recovering from the anæsthetic the patient complained of agonising abdominal pain, tympanites developed and increased, neither fæces nor flatus being passed, whilst the pulse-rate remained at 120. Dr. Wallace saw her 48 hours later; the vaginal portion of the cervix was intact, but a tear through the lower uterine segment opened into the left broad ligament, the lamellæ of which were widely separated by blood and clot. Through the posterior lamella there was a rent leading into the peritoneal cavity. When the abdomen was opened much blood and clot escaped. Abdominal hysterectomy was performed, and the patient recovered after a stormy convalescence.

# LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

*Intussusception—Red Degeneration of Fibroids in Pregnancy.—Exhibition of Cases, Specimens, &c.*

A MEETING of this society was held on Jan. 20th, Dr. A. CHRISTY WILSON, the President, being in the chair.

Mr. H. J. ROPER read the notes of a case of Intussusception in a child aged 8 years. The symptoms, pain and vomiting, had lasted for nine hours. On opening the abdomen he found it quite impossible to reduce the invagination, which was of the ileo-colic variety, on account, as he thought, of it having passed through the ileo-cæcal valve. The intussusception was almost eight inches long, and fearing the consequences of resection, he made a lateral anastomosis between the ileum above the intussusception and the colon beyond the point to which it extended, leaving the intussusception *in situ*. The child recovered and has remained well ever since (November, 1909). He was of opinion that this operation should be performed in recent cases where the condition of the invaginated gut was good, in preference to resection which was notoriously fatal.

Mr. C. H. GREENWOOD made remarks on a Case of Red Degeneration of Fibroids in Pregnancy, with acute symptoms, in which hysterectomy had been performed. The patient, a primigravida, was seized with sudden acute pain and vomiting; a diagnosis of ovarian tumour with twisted pedicle was made. The condition found at operation was red degeneration of a pedunculated fibroid; as there were several other fibroids, hysterectomy was done. Recovery was uneventful. The specimens showed early red degeneration in streaks and patches amid normal myoma tissue. The red areas showed degenerate muscle fibres, blood stasis, and dilated vessels, but no thrombosis. The pale areas showed no vascular dilatation. It was suggested that the degenerating myoma cells liberated some bodies which act first as hæmolysins, thus causing the discolouration, and secondly, as fibrin-ferments, leading to stasis (as seen in the present specimens) and then thrombosis; and that the onset of the acute symptoms corresponded to these changes. The thrombosis, &c., was thus secondary to the degeneration, not the cause of it.

Dr. E. F. TREVELYAN showed: 1. A case of Muscular Dystrophy (Pseudo-hypertrophic Paralysis) of 12 years' duration in a man now aged 20 years. There was pseudo-hypertrophy of the calf muscles, but particularly of the triceps muscles. There was marked atrophy of the glutei and latissimus dorsi, but only slight atrophy of the lower pectorals and spinati. The scapulæ were slightly winged. The gait was waddling and there was lordosis in the lumbar region. 2. A case of Graves's Disease undergoing retrogression in a woman, aged 40 years. She had been long under observation and had an acute attack of insanity about ten years ago. All the signs had considerably improved, but somewhat unsymmetrically. Thus the exophthalmos had almost disappeared on the left side and the tremor was less marked in the left than in the right arm.

Mr. H. COLLINSON showed a case of Calculous Anuria in which, after an attack of pain in the left kidney region, followed by hæmaturia, complete suppression of urine occurred, and lasted for five days. Examination by the X rays showed no evidence of calculus. Exploration of the left kidney on the fifth day of anuria revealed a calculus impacted in the opening of the ureter. This was extracted through an incision in the renal cortex and the kidney was drained. Urine began to be secreted in a few hours. Recovery was uneventful.—Dr. L. A. ROWDEN explained that the calculus on analysis was found to be almost pure uric acid stone, and hence was not demonstrable by the X rays.

Mr. S. THOMPSON ROWLING showed an Improved Apparatus for Administering the Oxygenated and Warmed Vapours of Ether and Chloroform for General Anæsthesia. The apparatus consisted of two cylindrical glass tubes placed vertically side by side, the one containing ether, the other chloroform. Warmed oxygen was passed through the ether or chloroform, and the oxygenated anæsthetic vapours were administered to the patient through a perforated tube arranged in a wire frame, which was covered with gauze. The cylindrical glass tubes were supported and the oxygen was warmed by a water-jacket, arranged to serve the additional purpose of

forming an efficient protection for the glass. Any proportion of oxygenated ether or chloroform, either alone or together, could be administered, or pure oxygen alone if desired. The administration is on the plenum principle; the presence of oxygen causes very quiet respiration and a good pulse, and a profound narcosis can be maintained with safety; there are also no blueness and no mucus.

Mr. J. F. DOBSON showed a specimen from a patient upon whom anterior gastro-enterostomy and entero-enterostomy for a large Saddle Ulcer on the Lesser Curvature of the Stomach had been performed seven months previously. The patient gained 2 stones in weight and was free from pain for a month after the operation. She then began to complain of severe pain after food. Eventually the obdomen was reopened and a perforating ulcer adherent to the abdominal wall was found in the jejunum just below the gastro-enterostomy opening. The gastric ulcer had healed, leaving a scar which produced a marked hour-glass contraction of the stomach. The greater part of the stomach was excised (including the gastro-enterostomy opening and the scar of the ulcer), and the efferent and afferent loops of bowel. The continuity of the stomach and small intestine was restored, the patient making a good recovery.

Dr. C. OLDFIELD showed a series of specimens to illustrate the advantages of removing the body of the uterus, together with the appendages, in cases where the latter had to be removed for gross disease. The specimens were: two of Double Pyosalpinx, two of Bilateral Tuberculous Salpingo-oöphoritis, one of Malignant Disease of the Ovary with Dual Primary Growth in the Uterus, and one of Bilateral Ovarian Cyst. The immediate and remote results were better than when the uterus was left, and this fact was now becoming generally recognised by gynæcological surgeons.

Mr. J. STEWART showed three cases treated by "606." 1. A male, aged 34 years. Intense headaches, Jacksonian epilepsy of the right side of the face, ten days later paresis of right arm and hand. Retention of the urine ensued on three occasions; optic neuritis. Potassium iodide was of no effect. "606" was administered three weeks ago. The patient was slowly but perceptibly improving. 2. Ulceration of the right side of the face and anterior triangle of the neck with fistula of Stenson's duct of three years' duration, during which time the patient was on antisyphilitic remedies. "606" was given 27 days ago, and the ulceration had almost healed. The fistula was not closed. 3. Inveterate ulceration of the tongue, throat, lips, and cheek, which had resisted mercury, potassium iodide, arsenic, and Littmann's decoction. The ulceration cleared up in three days.

Dr. BEDFORD PIERCE showed, with skiagrams, a Lead Pencil removed from the Duodenum by Mr. H. Littlewood.

Dr. A. BRONNER showed several instruments for the Suction Treatment of various diseases of the ear and nose. By this method in cases of acute purulent affections of the the middle ear or accessory nasal cavities the pus could be removed, the swollen membrane reduced, and drainage of the cavities improved. In some cases of otosclerosis the hearing was improved and the tinnitus lessened.

Cases and specimens were also shown by Dr. A. G. BARRS, Mr. R. LAWFORD KNAGGS, Mr. G. CONSTABLE HAYES, Dr. T. WARDROP GRIFFITH, Mr. B. G. A. MOYNIHAN, Dr. M. COPLANS, Mr. MICHAEL A. TEALE, and Dr. W. H. MAXWELL TELLING.

## MEDICAL SOCIETY OF LIVERPOOL.

*Election of Office Bearers and Members of Council.*

AT the annual meeting of this society held on Jan. 19th the following list of office-bearers and members of council was adopted:—President: Dr. T. R. Bradshaw. Vice-presidents: Dr. J. E. McDougall, Mr. G. P. Newbolt, Dr. C. S. Sherrington, and Dr. W. B. Paterson. Treasurer: Dr. J. Lloyd Roberts. General secretary: Dr. Thomas Bushby. Secretary of ordinary meetings: Dr. W. B. Warrington. Secretary of pathological meetings: Dr. Ernest E. Glynn. Librarian: Dr. J. C. M. Given. Editor of the Journal: Dr. John Hay. Council: Dr. T. H. Bickerton, Dr. Richard Humphreys, Dr. Herbert R. Hurter, Mr. T. C. Litler Jones, Dr. John Owen, Dr. Joseph Unsworth, Dr. R. W. MacKenna, Mr. C. V. Vereker, Dr. Owen T. Williams, Dr. Robert E. Kelly, Mr. Arthur J. Evans, and Mr. J. E. O'Sullivan. Auditors: Mr. T. C. Litler Jones and Dr. Stanley A. Gill.

*Tumours of the Adrenal Glands.—Methods of Localisation of Foreign Bodies by the X Rays.*

A meeting was held on Jan. 28th, Dr. J. E. MCDOUGALL, Vice-President, being in the chair.

Mr. R. C. DUN and Dr. ERNEST E. GLYNN communicated a paper on Tumours of the Adrenal Glands, with especial reference to those occurring in children. Mr. Dun first described the features of a case in which the patient was a girl, aged 5 years, of precocious development. The body was covered largely with fat, and hair was copious in several parts—viz., over the scalp, the pubis, and in the axillæ. A large tumour was present in the right flank having the characteristics of a renal tumour. The child died in a few days from bronchopneumonia. A complete post-mortem examination was made by Dr. Glynn, which showed that the tumour was certainly one of the adrenal body; the kidney was found to be free, but was embedded on the under surface of the tumour. Mr Dun and Dr. Glynn then considered the previous 16 cases already published and compared their own case with them. They gave the following classification:—*Group A* (from cortex).—Malignant hypernephroma associated with great precocity in children of both sexes or great muscular development with true sexual precocity in males. *Group B* (? from cortex or medulla).—Round-celled sarcoma: (1) Hutchinson's type with metastases in the skull; and (2) Pepper's congenital type with tumours in the liver. *Group C*, unclassified. Primary tumours in adults were, they said, less easy to classify, but malignant hypernephroma in the adult female might produce secondary male characteristics. Precocity in children was sometimes associated with tumours in other glands.—Dr. W. BLAIR BELL said that it was important to remember the inter-relation of the various ductless glands. The secretions of the ovary and thyroid were antagonistic to those elaborated by the infundibular portion of the pituitary and the medulla of the adrenals. This was shown by the effect upon blood pressure and upon the calcium metabolism. He asked how far variation in function was accompanied by change in structure of the gland itself or how far structural change was really due to alteration in the activity of some other of the glands? Hence, instead of removing a hypothetically over-active ovary in osteomalacia, as had been done in the past, adrenalin was now given with success to antagonise the over-active ovary. Perhaps infundibular extract would have the same effect. He pointed out that in some cases, as in that just related, it was only the secondary characteristics of puberty that were developed; in others there was actual precocious sexual activity. He thought that in the latter cases there was a coincident reaction in the specific genital glands. He had long urged that the specific glands were not alone responsible for the genital activity, but that many of the ductless glands participated in the process. They had now evidence that this was so.

Dr. W. C. ORAM read a paper on the Methods of Localisation of Foreign Bodies by the X Rays. A radiogram was shown of a needle two inches in length completely embedded in the tongue of a child aged 4 years. Diagrams were exhibited illustrating the process of localising a bullet in the hip by a screen examination. Various methods of localising a needle in the hand were described and their accuracy and limitations discussed, and a process described by which when two stereoscopic negatives were used, together with a prepared curve connecting the shift of the shadow of the needle with its depth in the tissues, the distance of the needle from the surface could be estimated to the tenth of an inch.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

*Cases Illustrating the Operation of Pubiotomy (with Skiagrams).—Treatment of Eclampsia.*

A MEETING of this section was held on Jan. 6th, Dr. HENRY JELLETT, the President, being in the chair.

Dr. E. HASTINGS TWEEDY exhibited six of nine cases of Pubiotomy. The three patients not shown differed in no way from those present. The most recent operation had

been performed eight weeks previously, while four years had elapsed since the first. All the patients walked without discomfort or limping and had made uneventful recoveries.—The PRESIDENT said that he had performed the operation at the Rotunda Hospital without having seen it done, and had found it so easy that others should find no difficulty. Mr. Hayes's skiagrams showed clearly the conditions of the bones.—Mr. M. R. J. HAYES said that a negative showed detail more clearly than a reproduction would do. In the first case the line of incision through the body of the left pubic bone could be traced in the skiagram. There was bony union. In the President's case the line of incision, obliquely downwards and inwards, was also well marked. The patient was able to walk, although as yet there was no union. In the third case there was three-quarters of an inch separation between the fragments, with fibrous union. The fourth case had a symphysiotomy, the pubic articulation being indistinct, apparently from callus formation. The separation between adjacent portions of the pubis was more marked below than at the upper margin. The fifth case was one of pubiotomy and symphysiotomy, the pubic articulation being indistinct here, also apparently from callus formation. The line of pubic incision was vertical and the separated portion was in three fragments, suggesting a comminuted fracture. In the sixth case the incision ran downwards and inwards. The upper and inner fragment had been cut off, and there was fibrous union. The case was almost a symphysiotomy. In the seventh case the line of incision could not be traced; there was no doubt as to the bony union. In the last case the incision ran through the lower ramus of the left pubic bone. There was bony union.—Professor ALFRED J. SMITH thought that Dr. Tweedy's arguments and Mr. Hayes's skiagrams had made out a strong case. One case of bony union with a subsequent normal delivery was very interesting; in this case there was no evidence of increase in size of the pelvis. He would certainly stand by Dr. Tweedy in opposing English opponents of pubiotomy.—Sir WILLIAM SMYLY said that the operation recommended itself strongly to him, and he thought it superior to symphysiotomy. In some cases one was limited to either pubiotomy or extraperitoneal Cæsarean section. It was instructive to see how well the women walked.—Dr. GIBBON FITZGIBBON remembered one of Dr. Tweedy's cases, a symphysiotomy being done. The woman had since had three children. The second and third, one of whom weighed 9 pounds, were delivered naturally, but in the fourth pregnancy an extraperitoneal Cæsarean section had to be done. He asked if the skiagram showed anything to account for this, such as callus formation. The interval between the symphysiotomy and the Cæsarean section was four or five years.—Dr. A. N. HOLMES said that Dr. Tweedy's splendid series completely proved that pubiotomy would stay as a definite operation in midwifery. There was doubt whether bony union was better than fibrous as regarded future delivery.—Dr. T. NEILL had delivered one woman, the subject of a previous pubiotomy, of two subsequent healthy living children by induction of premature labour.—Dr. TWEEDY, in replying, said that the operation was not only successful, but it was the easiest operation one could perform, and any well-informed modern general practitioner who could attend a midwifery case in a proper manner was competent to perform it. The trouble that had followed on it in other cases was due, not to the pubiotomy, but to tearing of the cervix or vagina. The ordinary operations undertaken by the general practitioner were more difficult than pubiotomy.—The PRESIDENT, in replying, said that while the subcutaneous operation might be preferable, he was doubtful as to the advantages gained in using a sharp needle. In view of his want of experience he had not performed Bumm's operation, but had made an incision large enough to admit his finger.

Dr. KATHARINE M. N. MAGUIRE read a paper on a case of Cæsarean Section for Eclampsia.

Sir WILLIAM SMYLY read a paper on the Treatment of Eclampsia.—Professor SMITH warned his hearers not to think that eclampsia occurred only before delivery; a large percentage of cases occurred afterwards, and he had seen a case occur six days afterwards in a patient who had had a perfectly natural confinement, but whose typical scanty urine a few days later was loaded with albumin. Yet that patient was being cared for by excellent practitioners who followed the rules of treatment regarding fluids and diets. She had had no trouble in four previous deliveries. The source of the active cause of eclampsia had not yet been discovered and there were probably many causes. A run of cases at the Rotunda had all got well under the standard treatment by potassium bromide with chloral or chloroform, but later they had had a run of bad cases on which this treatment had no effect. The object should be to discover the origin of eclampsia and standardise the treatment.—Mr. A. J. HORNE quite agreed that cases occurred in cycles, and got well under a particular treatment that failed in other cycles. He instanced a case of a five and a half months' pregnancy in which convulsions occurred, and amaurosis lasting three months followed. Convulsions recurred at the confinement. He said that convulsions after labour were comparatively rare. He had adopted Dr. Tweedy's treatment of morphia, rectal injections, and mammary injections, and he believed in large doses of morphia.—Dr. TWEEDY believed that the food eaten was the primary factor in the disease, but other predisposing factors were at work—e.g., insufficient fluid intake into the system. No death had occurred in the last 30 eclampsias, covering three years, at the Rotunda. When the disease had once developed even milk sometimes initiated the convulsions, and he had evidence suggesting that an anaphylactic condition in respect to food was established. Absolute starvation was the treatment. If the fits recurred repeatedly the patient was turned on to the right side, to allow the outflow of mucus from the mouth. If the patient got blue she was turned over face downwards, and a flow of mucus followed by a gasp for breath ensued. For fear of "laking" of the blood he substituted bicarbonate of soda for sodium chloride (as used for years in diabetic coma), half a drachm in a pint of water for mammary injections. Repeated bowel lavage until action occurred and saturation of the system with morphia were practised. In his fatal cases death always took place a considerable time, from 5 to 45 hours, after labour. As long as milk was given the patient was not treated successfully, because she was saturated with some poison and needed absolute rest. If a woman was about to die, he performed Cæsarean section, abdominal before labour, but vaginal during it, for the preparation for the former was very long and deleterious. Chloroform was a deadly drug in hepatic inefficiency, and ether had its dangers. Delivery through the vagina could be done without a general anæsthetic.—Dr. W. M. CROFTON criticised Dr. Tweedy's remarks about the ingestion of milk. In the nephritis of pregnancy there was high blood pressure, and the administration of nitrites caused disappearance of albumin, and there was no eclampsia when labour came on. He wished to know from Sir William Smyly whether there was much bleeding in his cases at the time that eclampsia came on, because it had been noted that the fits stopped at once on a large bleeding. The bleeding should be continued until blood pressure became normal.—Mr. J. S. SHEILL said that though there was no reasonable doubt that Dr. Maguire's case was one of eclampsia, still there was a possibility that it might have been uræmia or cerebral hæmorrhage. He cited a case in point. He agreed that it was desirable to use more morphia and scopolamine. He did not consider Dr. Tweedy's milk theory proved.—Dr. R. D. PUREFOY said that for many years free venesection was the regular treatment in Dublin for eclampsia, and many recoveries took place. He thought it valuable in the early stages. The argument against the emptying of the uterus was that the convulsions did not always cease after it had been done.—Dr. NEILL referred to the present tendency against giving milk in enteric fever, and asked if whey would be better; to which Dr. TWEEDY replied that fits had come on after whey.—Dr. FITZGIBBON said that an analysis of the cases in Sinclair and Johnston's "Midwifery" showed that the results seemed better when purgation and venesection were practised than when venesection was practised alone. He mentioned a case comparable to that cited by Mr. Sheill, and suggested that violent eclamptic fits had brought on hæmorrhage.—The PRESIDENT held that it was futile to look for one cause to explain all cases of eclampsia. To search for the origin of eclampsia was like searching for the origin of the Nile, which came out of a lake, which in turn was fed by a number of rivers. He thought there was great obscurity about the origin of eclampsia. He suggested in reference to Dr. Tweedy's large number of cases that perhaps some of them could not properly be classified as eclampsia.—Dr. TWEEDY defined eclampsia and said that no cases were

included which did not comply therewith.—Sir WILLIAM SMYLY and Dr. MAGUIRE replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A clinical afternoon meeting of this society was held on Jan. 18th, Mr. W. Morley Willis, the President, being in the chair.—The following cases and specimens were shown:—Dr. C. H. Cattle: 1. A man, aged 53, with Argyll-Robertson Pupils, loss of knee-jerks, but had not had "lightning pains." He complained of some weakness and coldness in the feet. Six months ago he said he was very anæmic, but anæmia was no longer evident. 2. A woman, aged 37, suffering from Tabes, which was ten times more common in men than women. 3. A youth, aged 19, who had Weakness of the Legs, Exaggerated Knee-jerks, and Tremor of the Lips and Tongue, causing difficulty of speech. He attributed his illness to "a fall" five months ago. His cerebro-spinal fluid showed excess of lymphocytes and gave the Wassermann reaction. Suggested diagnosis: commencing general paralysis of the insane (juvenile form).—Dr. J. W. Scott: Child with Transposition of the Viscera.—Dr. W. T. Rowe and Mr. C. H. Allen: A patient after operation for Suppurating Hydatid of the Liver.—Mr. Kenneth Black: 1. A rare case of Rupture of the Small Intestine and Laceration of the Left Kidney. Operation; recovery. Subsequent formation of two large calculi in the damaged kidney; nephrolithotomy; recovery. Since the last operation further calculi had formed in the same kidney. 2. A case of Gangrenous Meckel's Diverticulum in a strangulated hernial sac. Excision of diverticulum; radical cure of the strangulated hernia; recovery. 3. A case of Otitis Media with Acute Mastoid Abscess and complicated by subdural abscess in the middle fossa of the skull and a similar abscess in the posterior fossa of the skull. Operation; recovery. Specimens: X ray photographs of: (*a*) Polyarthritis Deformans of the Hand. (*b*) Ununited Fracture of the Lower End of the Humerus; advisability of excision of the elbow-joint. (*c*) Pott's Fracture—27 years old. (*d*) Gonorrhœal Arthritis of the Shoulder-joint.—Mr. E. Bigg: A boy with an old Tubercular Knee, who had been treated by a bone-setter three years ago, when the right knee was flexed to a right angle and fixed in bony ankylosis. Left knee also flexed in compensation to nearly the same extent. He presented the appearance of a dwarf, and was incapable of earning his living. Mr. Arbuthnot Lane operated on the right knee two years ago, and made a diagonal saw-cut through the ankylosed joint securing the present position of the joint. The result was displacement of the lower part of the leg outwards, but with a minimum of shortening. The boy could now ride a bicycle and was employed as a mounted telegraph messenger.—Mr. A. R. Tweedie: A child, aged 4 years, showing repair after Acute Septic Periostitis and Necrosis of some three inches of the shaft of the femur. Specimens: (*a*) Sequestrum representing posterior wall of the External Auditory Meatus and Outer Wall of Antrum, illustrating Nature's attempt at the radical mastoid operation; (*b*) specimens of Tonsils removed by enucleation; and (*c*) sections of the Lingual Prolongation of the Tonsil.—Dr. J. Watson: 1. A married woman, aged 43. Choledocholithotomy on April 17th, 1910, for history of 20 years' "indigestion pain" and gall-stone attacks. No vestige of gall-bladder found. Stones in dilated bile duct and hepatic duct. 2. Carcinoma occupying left axillary border with glands in armpit. Tumour with pectoral muscles and axillary contents removed April 23rd, 1907. 3. Cancer of Right Breast; axillary side freely moveable. Breast tumour removed Dec. 2nd, 1907, and four days later muscles and fat from axilla. 4. Carcinoma of Left Breast with Glands in Armpit. Breast, pectoral muscles, and axillary fat removed November, 1910.—Dr. O. H. Isard and Dr. F. H. Jacob showed a specimen of Congenital Hypertrophic Stenosis of the Pylorus in a child aged 3 months. When the child was a month old vomiting commenced. There was usually only one large vomit per day, and occasionally there were two. Vomit was sour and curdy. Bowels were constipated. There had been marked wasting. Breast-fed for five weeks. Different kinds of foods had been tried since, but none were satisfactory.—Dr. Jacob showed a probable case of Congenital Heart Trouble in a boy aged 4 years. Loud systolic murmur was heard at base of heart, not at the apex, also in both axillæ and all over the back. Murmur was loudest in right axilla on lying down; loudest at angle of left scapula on sitting up. Pulse 92, irregular, and very feeble. Liver edge felt one finger's breadth below costal margin. Child appeared to be quite well.—Dr. Jacob and Mr. Tweedie showed for diagnosis a patient with a swelling which commenced on the right side of the chest last August and had grown rapidly lately. It was painful only when touched. It extended over the anterior portion of the chest, from the clavicle to the level of the diaphragm and from mid-axilla to mid-axilla; the skin was of an unusual colour, and in the upper part resembled a raw beef-steak, showing minute telangiectases; in the lower portion it was yellowish-blue like a dying bruise. The colour could be only partially removed by pressure. The upper portion was finely papular to the touch, was indurated and thickened, and did not move so freely on the chest bones as was normal.—Dr. Jacob showed a case of Idiopathic Muscular Atrophy in a boy, aged 9 years, who had been noticed to walk badly for some years, and had never walked quite properly. He now presented the typical lordosis and "climbing up his own legs" of the pseudo-hypertrophic form, but did not show the pseudo-hypertrophy or the weakness of the shoulder muscles; weakness of the orbicularis palpebrarum and other face muscles was, however, present.—Dr. E. Ringrose and Dr. Jacob showed a case of Sulph-hæmoglobinæmia. The patient had been blue, short of breath, and subject to severe headaches for some ten years. The spleen was enlarged and could be felt about two inches below the costal margin. The blood showed the spectrum of sulph-hæmoglobinæmia, which was very like that of methæmoglobinæmia, but the bands were in a slightly different position and were not removed by ammonium sulphide as were those of methæmoglobinæmia.

MANCHESTER PATHOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 18th, Mr. J. W. Smith, the Vice-President, being in the chair.—Dr. W. Dyson gave an account of his Researches on Skin Pigmentation. He showed by means of the bichromate-hæmatoxylin method of Lorrain Smith and Mair that pigment is always formed as part of a complex granule which contains a lipoid substance. These granules are present constantly in the basal epithelial cells, and are formed there under the influence of the nucleus as a part of the normal metabolism of the cell. The pigment is in origin a lipochrome, the melanin being the chromatic proteid portion after separation from the complex lipoid granule. He found no evidence of pigment formation in the cutis, but showed sections which illustrated the passage of lipoid substances from the epidermis into the cutis along lymphatic channels. An increase of pigment can take place in two ways: 1. By the stimulation to increased activity of the epidermal cells by various agents (light, heat, toxæmic conditions, &c.). This pigmentation is transitory in character, and if the stimulus ceases the pigment gradually disappears. 2. By deficient drainage, due to obstruction of the lymphatics of the cutis. The normal amount of pigment being formed, it is unable to escape as quickly as it is elaborated, and therefore accumulates. This form of pigmentation is permanent and has a tendency to become progressively worse.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Dr. W. Mitchell, the President, being in the chair.—Dr. James Metcalfe read a paper on Electricity in Neurasthenia. He wished to bring before the society the uses of high-frequency currents, or D'Arsonvalisation, and static electricity in the treatment of neurasthenia. The symptoms of neurasthenia were described at some length under the headings of general and local. A description of the apparatus used, with diagrams, was given, and their mode of application was considered. Where the neurasthenia was associated with marked metabolic deficiency, or of the gastro-intestinal type, high-frequency currents were usually the most effective. But if the symptoms pointed more to a condition of a pure neurosis, static electricity acted best. The ordinary methods of treating neurasthenic patients were not considered, as the cases given had all been subjected to the usual forms of treatment by the medical practitioner who referred them for special treatment. Numerous cases were given of both men and women who had suffered from neurasthenia for long periods. The irritability, depression, insomnia, pains, and various other symptoms disappeared after from 12 to 20 applications of the

electrical currents. It was not to be assumed that electricity cured every case of neurasthenia, but it was well to remember that in cases where every other remedy failed there was a possibility of cure by these methods. The question was considered as to how these currents produced the therapeutical effect. Several of the cases on examination by a Riva-Rocci sphygmomanometer showed a high blood-pressure, and it was observed that the application of the currents caused a reduction of the tension and, *pari passu*, an improvement in the disease. Nearly all the cases treated had been permanently cured. Probably the effect was produced by stimulating general metabolism, and in this way effecting the elimination of toxic agents, or by a direct vaso-motor action on the vessel walls themselves. Possibly the inhalation of ozone generated by these machines had some influence in improving the patient's condition. Psychic influence was no more common in this form of treatment than by the use of ordinary remedies. D'Arsonval and others had been able to demonstrate increased tissue changes, more rapid reduction of the oxyhæmoglobin in the blood, and increased elimination of waste products in the urine. There was also a profound action on the protoplasm of cells everywhere, increasing their chemical changes.—The paper was discussed by the President, Dr. S. Lodge, Dr. F. W. Eurich, and Dr. A. Bronner.—Dr. Metcalfe then replied.

HARVEIAN SOCIETY OF LONDON.—A clinical meeting of this society was held on Jan. 26th at the Paddington Green Children's Hospital, Mr. J. Ernest Lane, the President, being in the chair.—The following cases were shown by the President and members of the hospital staff and others:—Dr. Leonard G. Guthrie: Case of Hydrocephalus.—Dr. Guthrie and Mr. M. S. Mayou: Case of Pseudo-glioma.—Dr. G. A. Sutherland: Cases of (1) Cerebellar Disease; and (2) Fibroid Phthisis.—Dr. Frederick Langmead: Cases of (1) Urticaria Pigmentosa; (2) Congenital Heart Disease; and (3) Myositis Fibrosa and Sclerodermia in an infant.—Dr. Reginald H. Miller: Cases of (1) Raynaud's Disease; and (2) Polio-encephalitis.—Mr. A. Edmunds: Cases of (1) Hypospadias; and (2) Cyst of the Humerus.—Dr. G. de B. Turtle: Case of Pyloric Spasm.—The President: Two cases of Syphilis treated by "606."

# Reviews and Notices of Books.

*A Text-book of Zoology.* By T. JEFFREY PARKER, D.Sc., F.R.S., and WILLIAM A. HASWELL, M.A., D.Sc., F.R.S. In two volumes. London: Macmillan and Co. Vol. I., 839 pp.; Vol. II., 728 pp. Price 36*s.* net.

THERE are nowadays so many text-books of zoology that to have arrived at a second edition is somewhat of a triumph, and is at least a handsome testimonial on the part of the scientific public. Among such text-books of zoology, which have evidently established for themselves a firm place in the literature of biology, Parker and Haswell's work occupies by no means an obscure situation. Not only is it dependable by reason of its accuracy, but it is unlike many other contemporary works which cover the same, or about the same, ground. The plan of the present work (which has not departed in this from the first edition) is to preface the accounts of the various groups of animals with a more or less detailed *résumé* of the anatomy of one particular example selected for various considerations as representative of that group. The authors are well advised, in our opinion, to drop the misused, or at any rate somewhat misunderstood, word "type" describing the particular animals which they select to represent the main groups of the animal world. The word "type" implies more than is commonly in the mind of those who make use of this term. "Example" is a far more expressive way of putting the idea suggested. The authors acknowledge their indebtedness for this emendation to Dr. Hill, lately Master of Downing College, Cambridge, and rightly assert that the student is apt to take the structure of the type for that of the group of which it is only an example, and, maybe, even a specialised and thus not typical example.

It is occasionally the practice of reviewers to seek for what is not contained in a book, rather than to express an opinion as to what the author has judged suitable and necessary for insertion. In a work dealing with so colossal a subject as is zoology at the present day, it would be the easiest of criticisms to point out the absence of this fact and of that, of one genus or of another. In fact, within reasonable limits—and two volumes containing between them nearly 1600 pages cannot be fairly considered as unduly short—it is not even within a distant approach of possibility to abstract the whole of the facts of zoology.

Nor has this science stood still during the 12 years since the publication of the first edition. Thus the problem which had to be faced by the author of the second edition (for it is now some years since the death of that very talented anatomist Jeffrey Parker) was by no means how to fill two volumes with the facts and chief inferences of zoology, but what might be safely omitted. Dr. Haswell, keeping to the original plan, has saved space by dealing very briefly with the smaller subdivisions of the larger classes, and by not burdening the student with a long series of names and definitions of the characters of the members of these smaller subdivisions. In fact, the book is essentially for the commencing student and not for the student who has already begun to specialise. In making this statement, however, it must not be supposed that Dr. Haswell has limited his survey to the well-known and often-trodden paths of zoology. He has introduced a great number of more recent researches such as have appeared since the publication of the first edition, while not neglecting the more familiar facts known to us for many years past. Thus, there is a figure of that remarkable crustacean, Paranaspides lacustris, from Tasmania, lately discovered and studied by Mr. Geoffrey Smith of New College, Oxford, an animal which is nearly related to certain very old fossils, and serves to link together more specialised groups of crustacea by its "generalised" characters. Place is also found for the very interesting and probably very important views of Dr. Goodrich of Merton College upon the relations between the true nephridia and the "cœlomo-ducts" in Annelids, and indeed in animals generally. Other examples might be mentioned which prove that the author has kept a critical eye upon the progress of zoological research, and not only in those groups in which he himself is particularly interested and to our knowledge of which he has contributed.

The vertebrata, together with certain primitive and allied forms such as the Ascidians, occupy an entire volume to themselves. For practical purposes this is necessary, since in every way the vertebrata bulk more largely than does any other great group of the animal kingdom; but on more theoretical grounds, for the range of structural variation in this group is not so great as in such a group as the Echinoderma or the Annelids (in a broad sense), one might criticise the undue importance thus given. However, as already remarked, it is impossible to include everything in a text-book of finite dimensions and if one group is to receive more generous treatment than another that group should be, and as we think from every point of view, the group of the vertebrated animals. A feature of this text-book, as compared with some others, is the large number of illustrations of the external form of vertebrated animals, particularly of mammals; and we note that a good many of the excellent drawings by Mr. Dixon, which adorn that volume of the "Cambridge Natural History" which deals with mammals, are utilised by Dr. Haswell for his present purpose. Writing from the Antipodes, and partly, no doubt, with the interests of Antipodean students in his mind, it is not surprising that Dr. Haswell

should dwell wherever possible upon the zoology of Australasia. It is curious, therefore, to observe that among the very few errors which we have noticed in looking into this work is a decided lapse with regard to the Australian ant-eater, Echidna. One of the rather long series of structural facts which almost seem to justify the placing of this creature together with the Ornithorhynchus in a group equivalent to that which should include the rest of the mammalia, concerns the structure of the heart. It has been shown by more than one observer that the right auriculo-ventricular valve in Echidna is not only an incomplete valve surrounding little more than half of the aperture, but that it is largely muscular and not membranous in character. But we find on p. 575 of Vol. II. the statement that "In Echidna the tricuspid valve is completely membranous." This is, however, possibly a misprint, or *lapsus calami*, for bicuspid, in which case the peculiar characteristics of the right heart valve are not mentioned.

Nor can we quite agree with the definition of the order Squamata, including the lizards and snakes, as characterised (*inter alia*) by the possession of lungs which are simple sacs. This is undoubtedly true of the majority, but the statement does not at all apply to the monitor lizards, which are so different in many particulars from other lizards, and in which Reptilia the lungs are quite as complicated by a sub-division of their cavity as they are in a crocodile or a tortoise. It is very remarkable to find amongst the monitors, which are unquestionably lizards, certain structural likenesses to the Crocodilia; these may perhaps be correlated with their at least occasionally aquatic life.

While presenting the reader in the main with the facts of zoology, the author does not neglect the more theoretical aspects of biology, and in this respect there is no change made from the first edition. The section of the work which deals with such problems is, however, commendably short, as the beginner ought to be sternly kept to facts until he is in a position to utilise this knowledge for the consideration of hypotheses. We are glad to see that in the pages which deal with "The Philosophy of Zoology" the question of "Orthogenesis" is not ignored. The American palæontologists more particularly have dwelt upon the fixed and, so to speak, "pre-arranged" lines upon which evolution has proceeded in certain cases. Thus quite independently of useful modifications (we are disposed to think), the horse tribe have persistently followed, from the Eocene down to the present day, a continuous reduction and ultimate shedding of the fingers and toes, resulting in the one-toed horse of recent and modern times. Dr. Haswell does not indicate that he holds any brief for any specified view—an attitude which is to be praised in a teacher whose business it is to present the facts and inferences to his pupils and not to direct their conclusions. Finally, we may call attention to the bibliography which closes the second volume. This is a well-selected list of general works, and no special monographs or memoirs in journals or the publications of societies are referred to.

Considering the enormous mass of zoological fact and literature available to the author, it is quite wonderful what a great deal has been found room for in these two most useful volumes.

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*Urinary Surgery: A Review.* By FRANK KIDD, M.B., B.C. Cantab., F.R.C.S. Eng., Assistant Surgeon to the London Hospital. London: Longmans, Green, and Co. 1910. Pp. 429. Price 7*s.* 6*d.* net.

MANY medical men, especially if they have not qualified within recent years, are quite unaware of the enormous progress that has been made in the surgery of the urinary organs, and Mr. Kidd has written this book for the purpose of drawing attention to the very great advances both in diagnosis and treatment which have been recently achieved. The progress made during the last ten years may be divided into four categories. In the first place, catheterisation of the ureters is a much simpler matter now than it was ten years ago; and, further, we are able at the present day to form a very accurate estimate of the physiological power of each kidney, so that the danger hardly now exists of removing the better kidney of the two. The development in the bacteriology of the urine and of the urinary tract has added greatly to our knowledge of infections of this system, and has enabled us to do more in treatment. The introduction of the X rays for the detection of calculi in the kidney, the ureter, and the bladder has added enormously to the diagnostic powers of the surgeon. Lastly, the great development of the surgery of the prostate has placed in our hands a wonderful influence for good in cases which were, at one time, most difficult to treat. All these, and many more, aspects of the modern urological surgery will be found described in this book. Its arrangement is excellent and it is easy to read.

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*Cunningham's Manual of Practical Anatomy.* By the late D. J. CUNNINGHAM, M.D. Edin. et Dub., D.Sc., LL.D. St. And. et Glasg., D.C.L. Oxon., F.R.S., late Professor of Anatomy in the University of Edinburgh. Fourth edition. Revised by ARTHUR ROBINSON, Professor of Anatomy in the University of Edinburgh. In two volumes. Vol. I.: 624 pp. and 237 illustrations; Vol. II.: 600 pp. and 236 illustrations. London: Henry Frowde and Hodder and Stoughton. 1910. Price 10*s.* 6*d.* net per volume.

THIS work has so long enjoyed a wide and well deserved popularity that its general merits do not fall to-day within the scope of an ordinary review. The appearance of four editions, each of which has marked a distinct advance on its forerunners, is, in itself, a guarantee that Cunningham's Manual provides the student with a guide to the dissection of the human body which admirably fulfils its purpose. Indeed, there appears to be a tendency on the part of the student to regard "little Cunningham" as a text-book, as well as a dissecting manual. The amount of accurate information contained within its 1200 pages would almost seem to justify this view, and concerning all those structures which may be fully examined in an ordinary dissecting-room subject the student will need to do a minimum amount of additional text-book reading, if he studiously follows the manual in his actual practical work. During the life of its author—the late Professor D. J. Cunningham—four editions of the work appeared, and the advances marked by these four successive issues are very remarkable, for the first edition was an ancestor of very modest appearance. Professor Arthur Robinson, the successor to Professor Cunningham in the historic chair of anatomy in Edinburgh, is responsible for the present volumes, and he has been assisted in the work of revision, as was Professor Cunningham, by Dr. E. B. Jamieson, lecturer in anatomy at the University.

This present issue, although described as merely a revision of the fourth edition, contains sufficient new features to justify a critical review of the alterations which have been made. Perhaps the greatest innovation is the tardy introduction of the B.N.A. terminology, of which a glossary is given at the beginning of each volume. In the present unsatisfactory transition stage of the nomenclature used by British anatomists, it cannot, perhaps, be expected that the book should have naturally dropped into the new ways all at once; but it is to be hoped that every future edition of the manual will help to stereotype the universal nomenclature in the leading British dissecting guide.

Some new illustrations have been added, and some of the old ones, which were plain black and white in former editions, have been coloured in the present issue. It is possible that different copies vary in the excellence of the

colour reproductions, but in those which the reviewer has examined the printing of some of the more highly coloured figures does not seem to be quite satisfactory, for in some cases in which colour has been added to an old black and white drawing there is a certain degree of overlap. A word must also be said with regard to some of the pointing lines used for naming the structures in certain illustrations. A method of dotting these lines has been adopted in some cases, and this cannot be considered as an improvement on the plain ruled line used in the older plates, for it is often very difficult to determine on what structure the pointing line actually stops. In practical use this state of affairs has proved, we know, a stumbling-block to students. In Vol. II. Fig. 78 (repeated as Fig. 83) is an example of this fault, for the pointers intended to indicate the internal carotid artery and the internal jugular vein both lead to other structures, while the pointer which rests on the ramus descendens hypoglossi remains unnamed. Fig. 81 (repeated as Fig. 91) has the same defect of uncertainty as to the termination of the index lines, and in Vol. I. Fig. 231 shows a wrong index to the sacral plexus, while in Fig. 212 the red index lines lead to confusion, especially in the case of the lower pointer to the levator ani muscle. These defects are easily remedied, and since demonstrators have on many occasions been questioned by students to whom they had caused some anxiety they are cited, not as a criticism of the work, but as a guide for the author in future revision.

The other marked changes introduced in this issue are mainly concerned with the pelvis and its manner of study, and Professor Robinson has done wisely to alter the route of dissection. Perhaps in some future edition there will be more sweeping changes in this portion of the book, for the pelvic fascia is capable of still further simplification in the light of a mass of modern work on the subject; and the inclusion of some description of the musculus recto-urethralis would constitute an added improvement, since the muscle has taken its place in English surgical literature. In some other respects the book might be modernised with advantage, and we are tempted to regret that Professor Robinson did not make the description of the testicle and its method of descent conform more to the requirements of modern research, especially since these things have been rendered familiar to English students by the work of Dr. D. Berry Hart in Edinburgh.

Professor Robinson is to be congratulated upon the appearance of these volumes, which mark the high-water level of Cunningham's Manual; and such criticism as we have levelled against them must be regarded merely as suggestive of improvements which will help to maintain the book in its well-deserved position as the premier dissector's guide for the student of human anatomy.

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*A Study of the After-results of Abdominal Operations on the Pelvic Organs, based on a Series of 1000 Consecutive Cases.* By ARTHUR E. GILES, M.D., B.Sc. Lond., F.R.C.S. Edin., Surgeon to the Chelsea Hospital for Women. London: Baillière, Tindall, and Cox. 1910. Pp. 252. Price 10*s.* 6*d.*

AS the author of this work points out, of late years recovery from an abdominal operation has become almost a matter of course, and how small the mortality may be is shown by his own figures giving a mortality of 6·6 per cent. for the first 500 cases and one of only 1·6 per cent. for the second 500. In these conditions the most important question at the present day is not the immediate mortality of such operations but the after-results to the patients. For the purpose of attempting to give an answer to this question Dr. Giles has collected as far as possible the results of his work, and this book contains these results and the conclusions he draws from them. Such an investigation when carried out by the operator himself is, of course, always open to the grave objection that he is by no means the best judge of the after-condition of his patients. The personal equation must enter into an inquiry of this kind; and the tendency to exaggerate the benefits gained, and to minimise the bad effects resulting, from any operative procedure must be so powerful as inevitably to vitiate to some extent the conclusions formed even by the most impartial of observers. For this reason we are inclined to lay much greater stress upon the after-histories of patients when they are recorded by some observer other than the surgeon himself. None the less, Dr. Giles deserves great credit for the labour he has expended and for all the time and trouble he has devoted to this task, and the results are certainly valuable even if we feel that we cannot accept all his conclusions without some slight amount of hesitation.

The first part of the book is concerned with the after-results of each operation considered in detail, and the second half contains in tabular form a complete record of the patients. As the book is a reprint of a series of articles which appeared in the *British Journal of Obstetrics and Gynæcology* no doubt most gynæcologists who are interested in these matters have already read its contents. If we look at the conclusions as to the general health of all patients after abdominal operations we find, according to Dr. Giles, that no less than 90 per cent. were better than they had been before the operation, and only 6 per cent. were either worse or at least no better.

The operation of hysteropexy appears to be a very favourite one with the author, since he has practised it no less than 309 times in his 1000 cases. In curious contrast to this frequency is the comparatively small number of times this operation figures in some of the records of the gynæcological departments of our large hospitals with medical schools attached, where it appears to meet with but scant favour.

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*Biology, General and Medical.* By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia. With 160 illustrations. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 440. Price 7*s.* 6*d.* net.

THIS volume cannot fail to be of great interest to two classes of readers. The biological part provides an excellent and readable summary of the elements of biology for general readers who have had little or no special training in this science, while the more specialised medical aspects of the subject will afford to general practitioners of medicine a broad but accurate survey of various fields of new knowledge, such as immunity and senescence. Professor McFarland has undertaken a tremendous task in trying to condense into one volume such a large range of subjects, but his wide knowledge, both of general biology and of pathology, has enabled him to grapple with it in a most successful manner. After a historical sketch of the theories which have dealt with the origins of life in all ages, some 200 pages are devoted to a sketch of the manifestations of life in various plants and animals, the function of cells, the reproduction of cells and of individuals, and similar well-known biological phenomena. This section of the book might have been fuller, but it would have been impossible to make the picture complete, and the author has shown a wise discretion in his selection of illustrative functions. Several chapters follow dealing with the difficult subject of modern theories of descent, transmission of type, and heredity. The treatment of this matter is luminous and broad, in spite of the limited space at the writer's command. A short but lucid chapter on "blood-relationship," a term adopted from Nuttall, serves as an introduction to a study of infection and immunity, and is

one of the best bits of work in the book, which closes appropriately with a review of the work of Metchnikoff, Minot, and others on senescence and decay. In spite of the technical character of much of the subject-matter the style of writing is easy, simple, and direct, and there are very few Transatlantic peculiarities of diction. The printing is excellent, and the volume is light to hold, no small virtue in these days of loaded paper, while the illustrations are numerous and useful.

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*Le Cancer.* Par le Docteur JOSEPH THOMAS, Docteur ès Sciences. Deuxième édition, revue et augmentée. Préface du Professeur ALBERT ROBIN, Membre de l'Académie de Médecine. Paris: A. Maloine. 1910. Pp. 376.

Dr. Thomas published in 1906 the first edition of his short history of cancer, and since that time a very large number of papers and volumes have appeared on the subject of cancer, some of which, even when of much importance, are likely to be missed by those interested in the study of this disease. It is of great value to have a volume in which the reader can be sure of finding a reference to most papers of importance on the subject. The book is very complete: in it will be found all the different theories which have been put forward to explain cancer, and an account of the pathological histology, the signs and symptoms of the disease, the question of contagion, and the treatment. The vast differences which exist in the frequency of the disease in different parts even of the same country are shown in a table taken from the thesis of Fabre. This demonstrates that while at Havre 71 persons die from cancer each year per 100,000 of the inhabitants, at Paris 104 die, at Saint Sylvestre 345 die, and at Oulchy 1400 persons die. Many similar facts of interest will be gleaned from this volume, and we commend it to all who are studying this important malady as a convenient manner of keeping before them an all-round survey of the subject.

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*Transactions of the Medico-Legal Society for the Year 1909–1910.* Edited by DIGBY COTES-PREEDY, M.A., LL.M., L.S.A., Emmanuel College, Cambridge, of the Inner Temple and Oxford Circuit; Barrister-at-Law; and WILLIAM A. BREND, M.A., M.B., B.Sc. Lond., of the Inner Temple; Barrister-at-Law; Lecturer on Forensic Medicine, Charing Cross Hospital. Vol. VII. London: Published for the Society by Charles Griffin and Co., Limited. 1910. Pp. 186.

SINCE its foundation in 1901 the Medico-Legal Society has conducted many interesting discussions upon subjects of considerable public importance, some of which are not easy to ventilate satisfactorily in any gathering composed exclusively of medical men or of lawyers, or by any means not directly conducive to the friendly exchange of divergent opinions. The membership of the society now amounts to well over 200, and it is to be hoped that the loss which it has sustained by the death of Sir Joseph Walton, who was one of its vice-presidents, may be made up to it by the accession of some other member or members of the judicial bench. There are many judges whose presence at the meetings of the society would add very considerably to their interest and to the weight of the conclusions arrived at, and there are few judges who by attending might not gain an insight into the reasons which lie behind contradictions of medical evidence, into the difficulties which beset the scientific witness, and into defects in the law to which they, as judges, above all others have the power to call attention. We refer to such papers (among those in the present volume) as the Mutual Relations and Influence of Law and Medicine, the subject of a presidential address by Sir John Tweedy, and the Effects of Traumatism on the Nervous System by Dr. J. S. Risien Russell, out of both of which can be extracted valuable expressions of opinion with regard to the desirability of the provision of medical assessors in cases which obviously demand their presence.

The papers read before the society, however, do not deal by any means always with matters tending towards legal reform, but in many instances are useful monographs followed by discussion from two points of view upon topics not exclusively medical, or entirely legal, and of interest to members of both professions. Thus that of Dr. F. G. Crookshank, on the Examination of Bodies Found in the River, contains practical hints from an expert to his fellow practitioners combined with points which any legal member of the society might some day find useful in the conduct of cross-examination at a criminal trial; and another "On Ferro-Silicon, with Special Reference to the Poisonous Gases Liable to be Evolved Therefrom," by Mr. H. Wilson Hake, may be referred to as an interesting summary of the history of a poisonous substance the transport and storage of which caused an astonishing number of deaths before its dangerous qualities attracted official attention.

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## LIBRARY TABLE.

*Surgical After-treatment: a Manual of the Conduct of Surgical Convalescence.* By L. R. G. CRANDON, A.M., M.D., Assistant in Surgery at Harvard Medical School. With 265 original illustrations. London and Philadelphia: W. B. Saunders Company. Pp. 803. Price 25*s.* net.—The appearance within the last few years of several treatises on the after-treatment of surgical cases shows appreciation of the importance of this matter and recognition of the fact, which is only too often neglected, that with the completion of the operation the work of the surgeon has not ended. Another volume, therefore, on the same subject, while not perhaps absolutely needed, is at least an addition to a literature at present not overdone. Dr. Crandon's work is written on very sensible lines. He discusses first the details of the sick room, the recovery from anæsthesia and the treatment of its after-effects, the relief of thirst, of pain, and of insomnia. The various forms of post-operative hæmorrhage, of shock, and phlebitis are also considered; the diet after operation, rectal feeding, catheter isation, and various other post-operative complications and procedures are dealt with. The second part of the book concerns itself with operations on different parts of the body. The author recommends depilation by means of a depilatory paste in the preparation of a patient for operation, a method not sufficiently employed. It is much less disturbing than shaving is to the part, and it leaves the surface smooth, clean, and practically aseptic. The value of hot weak tea in diminishing the thirst after operation is not fully appreciated, and many nurses withhold it from their patients. It can often be retained when everything else is vomited. Many surgeons approve of its administration highly, and we are glad that Dr. Crandon has mentioned it in his work. The book contains much that will prove useful to the surgeon who is anxious to do the best he can for his patient, and we have formed a very favourable opinion of it.

*Diet and the Maximum Duration of Life.* By CHARLES REINHARDT, M.D. Brux. The London Publicity Company. Pp. 108. Price 1*s.* net. *The Food Reformer's Companion.* By EUSTACE MILES. London: Mills and Boon. Pp. 186. Price 2*s.* 6*d.* net.—Food reformers can be divided into two classes: those who base their desire for reform on the ground of humanity, and, like the conscientious Hindu, will eat nothing that involves the taking of sentient life, and those who are chiefly concerned, whether for altruistic or other reasons, in the maintenance of health. The fact that health is maintained by different nations on foods which

in their nature vary widely, to say nothing of the range in variety and quality of the foods used by the different strata of society in any one nation, proves that habit will enable man to live on almost anything. In the now almost forgotten treatise on temperance of Cornare, which was translated from the Italian by Master George Herbert, "of blessed memorie," the author sought to show that "intemperance was not such an evil but it might easily be remedied," the word intemperance, of course, being used in a wide sense. Dr. Reinhardt tells us that his book is not a sentimental work, nor a treatise on humanitarianism, but an effort to point out the nearest approach to the perfect way in diet; and the dual problem which he sets before himself of maintaining health and postponing the evils of old age resolves itself into the question of averting or preventing intestinal putrefaction. He discusses the various forms of diet, especially drawing attention to the evils of excessive meat eating, and arrives at the conclusion that strict frugality, thorough mastication, and the judicious employment of certain health-preserving foods, of which Bulgarian sour milk is the most notable, are the best means of attaining a healthy old age, Mr. Eustace Miles, who protests against being called a "vegetarian," since he eats fewer vegetables than most meat eaters, is also an advocate of thorough mastication, but the foods which he discusses have a less limited range than those of Dr. Reinhardt. Mr. Miles's book is a plea for what he calls a balanced non-flesh diet—that is, a diet without meat selected to suit individual idiosyncrasies. He appeals to various classes and various individuals and shows how meals, according to his system, can best be prepared by a man or woman living alone, or by the one non-flesh eater in a family, without serious inconvenience to other members of the household. The book contains some useful vegetarian recipes.

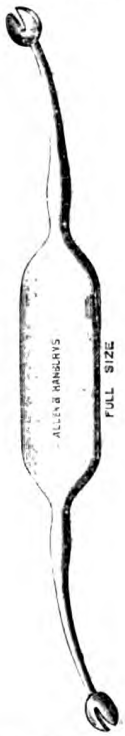
*Lehrbuch der Augenheilkunde.* By Various Authors. Edited by Dr. THEODOR AXENFELD, Professor of Ophthalmology in Freiburg. Jena: Gustav Fischer. 1910. Pp. 708 and 11 plates. Price, paper, 14 M.; board, 15 M.—Professor Axenfeld's text-book of Ophthalmology, which we reviewed in THE LANCET of March 27th, 1909, has already reached a second edition. The general structure of the work is maintained, the only notable changes being the sections on diseases of the lacrymal organs and on injuries and sympathetic ophthalmia, which were written by Professor O. Schirmer and now appear under the names of Professor Stock and Professor Hertel respectively. We had occasion in our review to point out the shortcomings of the ophthalmoscopic drawings. Many of the old ones are now transferred to the text, and the new set of plates is a very decided improvement.

*Radiometrie Fluoroscopique.* By Dr. H. GUILLEMINOT. Paris: G. Steinheil. 1910. Price 2 francs, 50 centimes.—This is a note on the author's method of fluoroscopic radiometry, based on the comparison of results when a platinocyanide screen is illuminated by the X rays and by a standard specimen of radium. Apart from the fact that a rather expensive specimen of radium is required for a standard, this method of radiometry is perhaps the best that has yet been devised. The standard consists of 20 milligrammes of radium bromide (activity 500,000) spread over a surface of 1·75 square centimetres on a copper disc and illuminates a screen placed at a distance of 2 centimetres. Dr. Guilleminot also describes a means by which specimens of radium for therapeutic purposes may be standardised and later used themselves as standards. He shows the advantages thus gained in radiography give much more uniform results and a great saving in time and plates. The third chapter is devoted to a study of the analysis of a polychromatic beam of the X rays as a basis of accurate treatment; and the final chapter is on the use of filters, which have done much to place radio-therapeutics on their present basis.

# New Inventions.

## COMEDO EXTRACTOR.

I HAVE had constructed for me by Messrs. Allen and Hanbury of Wigmore-street, London, W., a comedo extractor by means of which graduated pressure may be applied whilst the black head remains under observation. The instrument consists of a broad handle with a curved shank at each end terminating in a concavo-convex head with a V shaped neck or slot. The slots differ in size. The curved shank is so constructed that it adapts itself to all parts of the face. The shape of the slot enables a graduated pressure to be applied exactly around the blocked duct, whilst the slightly convex lower surface of the head allows an even pressure on the skin. The edge of the slot is bevelled and rounded, thus preventing any injury to the skin. The slightly concave upper surface allows each comedo to be removed after extraction quite easily, so that the slot may not become blocked. The method of use is to place the edge of the slot 3 millimetres (one-tenth of an inch) from the comedo, and to gradually advance it with increased pressure.




T. P. BEDDOES, M.B., B.C. Cantab., F.R.C.S. Eng.
Stratford-place, W.

THE ST. MARYLEBONE DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—The committee and medical officer of the St. Marylebone Dispensary for the Prevention of Consumption were "At Home" on Jan. 25th, at the Dispensary, 15, Allsop-place, Upper Baker-street, N.W. The invitation was well responded to and a representative gathering of visitors were shown over the premises, and showed much interest in the principles and methods of work of this new organisation in the borough. The dispensary is on the lines of those already existing in Edinburgh, Paddington, and in Berlin, Montreal, New York, Boston, and Pittsburg. As the chief sources of infection exist in the homes of the people in our great cities, it is here that the dispensary attacks the malady at its source. To the dispensary, which is free to all, patients who are not already under a medical practitioner may go for examination, diagnosis, and treatment. From the dispensary a physician and nurse visit the homes of the patients, who are thus educated in open-air treatment and in the protection of others by the observance of a few simple precautions. The medical officer also examines all those who have been in contact with the patients, and thus some of the early cases are diagnosed while they are yet curable. In every department of its activity the dispensary works in coöperation with the public health authority, with the various charitable agencies in the borough, and also with the practitioner. The work is carried on by voluntary effort, and entirely supported by voluntary subscriptions, which should be sent to the honorary treasurer, St. Marylebone Dispensary for the Prevention of Consumption, 15, Allsop-place, London, N.W.

# THE LANCET.

*LONDON: SATURDAY, FEBRUARY 4, 1911.*


## The Present Plague Peril in China.

REPORTS recently received from China regarding the spread of plague in that country reveal a very grave situation. The note of warning was sent to us by our correspondent in Peking just before Christmas. The disease starting, it is said, in Mongolia has gradually extended into Manchuria, where at the present moment an extremely fatal and widespread epidemic has developed. From Manchuria the infection has already been carried southward to Chefoo and other places in the province of Shan-Tung, and to Tientsin and Yung-ping-fu, as well as to Peking itself in the province of Chi-Li. There are now indications that from these centres plague is diffusing itself in the interior of the Chinese Empire. Unhappily, the present prevailing type of the disease is the pneumonic, and this doubtless accounts both for the rapidity of spread and the excessive case mortality. At the Manchurian town of Mukden the latest accounts assert that more than 150 deaths from plague are occurring daily. Among the victims there are already included two medical men, one a Frenchman, Dr. MESNY of Tientsin, the other an Englishman, Dr. A. F. JACKSON, a medical missionary, both of whom had left their own work and volunteered for plague duty; also a lady doctor, Madame LEBEDEFF, has lost her life in attending upon plague patients. At Harbin, another Manchurian town north of Mukden, more than 1200 persons have lost their lives during a comparatively short period, and thousands of the panic-stricken inhabitants of the city have already fled seeking refuge in other towns and districts, and carrying with them the leaven of infection. Business is said to be at a standstill, and it is impossible in many instances to find the necessary labour to bury the dead; some corpses, deserted in the streets by their terrified relatives, are found half-devoured by dogs, and in the absence of any other available means for speedy burial they have been flung into the river that flows through the town. In the face of all this the Chinese officials in Manchuria have displayed for the most part an attitude approaching brutal callousness. In one instance representations made by the Russian consular authorities have succeeded in getting the Chinese Taotoi of the town dismissed from his post by order of the Peking Government. There is a very great scarcity of medical men in the plague-invaded district, and although Russian, Japanese, English, and other medical men have freely volunteered their services the number falls far short of what is imperatively required. Meanwhile, failing other skilled assistance, the students in the Chinese medical schools have been requisitioned by the Government for plague duty, and some of them have already fallen victims to the epidemic.

There are indications that by this time the Chinese Government has become thoroughly aroused, not to say alarmed, at the danger from the spread of plague in the Empire, but it seems to be at a loss to know what course to take. About a fortnight ago the Russian Foreign Office approached the Peking Government, as well as the other Great Powers interested in China, suggesting the organisation and despatch of an International Scientific Expedition into Manchuria to study on the spot the problems associated with the epidemic of plague. As a result we learn that the Chinese Government has now sent out a Circular Note to the Great Powers requesting their coöperation in discovering the cause or causes of the epidemic, and in devising appropriate measures to cope with it, and also as to conducting scientific investigations regarding the disease. The Great Powers, we understand, have been each invited to nominate a plague expert to serve upon the International Commission, and it is intimated that all expenses incurred by that body will be defrayed by the Chinese Government. We are not sure that a committee of scientific experts is the best organisation at the present juncture with which to fight the plague epidemic in China. Rather do we think that what is most needed is the establishment of an administration to formulate preventive measures and with power to enforce them. The bacteriology of plague and the various modes in which the infection is conveyed to man have been carefully studied by the Indian Plague Commissions as well as by other experts on the European continent and at home. It is, in our opinion, the practical application of all the acquired knowledge by able administrators rather than the advice of scientists that is most needed at the present crisis in order to arrest the sacrifice of human life that is now going on and which threatens to increase. Should an international commission of plague experts, nominated by the Great Powers, be despatched to China to deal with the epidemic, we fear that they will have a hard and up-hill task before them. In China there is at present no machinery for the notification of disease nor for registration of deaths; there is no existing sanitary service the officials of which could be trusted to carry out the measures framed by the international body of experts. There is, moreover, to be faced the deadweight of passive resistance and obstruction by the Chinese themselves. The Chinese, or many of them, are fanatics where their own habits and customs are concerned; they are still distrustful of the "foreign devils" and their remedies. At times, indeed, the distrust is apt to find expression in rioting and in the destruction of the foreigner's life and property. China, with its 400 millions of inhabitants, has not yet awakened to the need of sanitary progress, and many of its towns and districts are in a deplorable sanitary condition.

Every circumstance unfortunately seems in favour of the spread of plague, especially if introduced in the pneumonic form. Like other countries, China has more than its share of rats and other rodents, so that there is a distinct probability, if plague penetrates into the interior of China, that it will make a long stay and leave its mark on that country for years to come. China's cry for help will no doubt receive a sympathetic response from all the Great Powers. Immediate

action is obviously called for and will, no doubt, be forthcoming from the International Commission as soon as it is formed. The matter is one of the greatest urgency if the spread of plague into the interior of China is to be arrested. We have grave fears that if the epidemic goes on increasing at its present rate we may have to witness in China a sacrifice of human life compared with which even the Indian experiences may sink into comparative insignificance.

## Operating Without Skilled Assistance.

IN an address delivered before the Students' Medical Society in Aberdeen and published in our columns on Dec. 24th, 1910, Mr. G H. COLT drew attention to the necessity which occasionally arises for a surgeon to operate without the assistance which he would like to command. To those who are accustomed to have skilled assistants in operating it may appear difficult to perform extensive and serious operations with little help and even with none, or with help of an unskilled kind. It is on board ship that emergencies of this kind usually arise. Many a surgeon on board ship has to operate in cases of emergency with no more help than can be obtained from the passengers or crew. Say that an operation for appendicitis has to be done, and there is no anæsthetist on board. A stewardess, with certain instructions, has to carry out the administration of the anæsthetic, anæsthesia having been induced by the surgeon, who has to keep a watchful eye on the progress of the anæsthesia and the general condition of the patient. A passenger, perhaps, or one of the crew may be called upon to hold retractors, and generally sufficient assistants can be obtained who make up by willingness for their lack of skill. Should any of the helpers have assisted at a previous operation he feels that he knows the work, and is regarded by his fellow assistants as well-qualified to supply skilled help. The difficulties of performing an operation at sea are not small, even when the sea is calm, yet the outcome is generally good, and most of the patients do remarkably well, even though the operation has been performed in mid-ocean —as our columns have not infrequently testified. When the emergency has arisen in the tropics the cabin is likely to be both ill-ventilated and hot, but still, for the most part this does not seem to have a harmful effect on the patient. It is seldom that any private cabin is sufficiently large to serve for an operating theatre, so, as a rule, the saloon or chief cabin is used. Some of the larger and more modern liners have sections of the vessel which can be devoted to what may be called hospital purposes, but there is seldom sufficient room therein for operating in comfort. Even when the sea is at a dead calm the difficulties of performing a major operation are not small, but they can generally be overcome. If, however, the emergency arises during rough weather the difficulties are enormously increased, and few professional experiences are more exciting, from the terrible responsibility of their nature, than operating for the relief of a strangulated hernia or applying midwifery forceps during a storm at sea. In such circumstances every position is unstable, two or three helpers may be required to keep the patient from sliding about the cabin, and the table or mattress on which the operation is performed will generally need to be lashed in position, so that the patient can be held on it with less difficulty. The surgeon himself may need some assistance in maintaining his equilibrium, and the instruments, lotions, and dressings will need special supervision if they are not to be thrown about with the rolling of the vessel. It is a little wonderful that the results of these operations at sea are so good; the fact speaks clearly for the possession by the surgeon of imperturbability, and of resolution despite distracting circumstances to carry out the essentials of his scientific procedure without hurry or scamping.

In operations undertaken at sea the surgeon has help, unskilful though it may be, and his task would in such troublous conditions be well-nigh impossible if he were deprived of that measure of aid. In some professional situations, however, this degree of assistance is not vouchsafed to the operator, and he is compelled to rely on himself alone. He has to do what needs to be done without any form of help whatever. Where the surgeon has not only to administer the anæsthetic, but to perform the operation, and that single-handed, he is in a very arduous place. Spinal anæsthesia has removed in great part the absolute need for general anæsthetics in operations on the lower half of the body, and the various forms of regional and local anæsthesia also afford aid to the surgeon operating by himself, but all these things bring with them liabilities to error. Many varieties of automatic retractors are now obtainable, and these have relieved the surgeon of the need of an assistant for retracting the edges of the wound. It is probable that most major operations, such as amputations and abdominal sections, can be carried through successfully without any assistance at all, but performances such as these must be regarded rather as *tours de force* than as ordinary efforts of surgical skill. To almost every surgeon occasions will come when he will have to rely on his own unaided efforts, and he will probably obtain better results if he has taken thought beforehand as to what may be expected of him in different junctures. Surgeons are so much in the habit now of relying on a good supply of instruments that many of them are hardly aware with how little it is possible to do all that is necessary. Not that we would undervalue the many forms of instruments which the ingenuity of surgeons and the assiduity of instrument-makers have placed within professional reach, but we may recognise that, when necessary, surgeons can do without them. Should all ordinary surgical instruments be absent a razor or penknife may replace the scalpel, a piece of wire or a hairpin may serve as a probe or a retractor, and an ordinary sewing needle and cotton may supply the sutures. As to skilled assistants, the better the surgeon the more he will value skilled help, for the difference is readily felt when an assistant accustomed to the operator's methods is exchanged for one who is unfamiliar to the special routine. But the emergency of having to operate without help is more easily overcome if preparation has been made for such an eventuality—i.e., if the practitioner, when not oppressed by the imminent call for his services, has thought out for

himself how he would act in certain situations when circumstances had deprived him of his proper instruments and all assistance.

## "Fertility."

THE problems connected with the questions of fertility and fecundity, not only among animals but also in the human race, are exceedingly complex, and our knowledge of the laws governing them is far from perfect. The subject is one of importance, not only to medical men and economists, but also to breeders of animals, and it has not failed to attract the attention of some of the acutest thinkers of the age. It is discussed at length by DARWIN, and HERBERT SPENCER also devoted a considerable amount of attention to the subject. An important fact in relation to the subject is that the birth-rate is falling steadily at the present day, not only in almost all the countries of Europe, but to even a more marked degree in our own colonies. In the Registrar-General's report for the year 1907 an interesting table is given showing, as far as is possible, the comparative fertility of the married women of those countries from which the necessary data can be obtained, and these figures form a valuable measure of human fertility in the several countries. From this table it appears that among the continental countries from which it has been possible to obtain returns there were only two, Austria and Spain, in which the fertility of wives during the 20 years 1881–1901 showed a tendency to increase, and this also applied to Ireland. The fall in the other countries varied from as little as 2·5 and 3·7 per cent. respectively in Italy and Norway to as much as 17·7 per cent. in England and Wales, and nearly 20 per cent. in France and Belgium. In New Zealand and in the States of the Australian Commonwealth the decrease in the legitimate birth-rate was even more striking and ranged from 23·2 to 30·6 per cent. All the evidence available tends to show that while a very small proportion of this decrease may be due to an increase in the age constitution of the married women of conceptive ages, the main part of it must be attributed to a deliberate limitation of child-bearing on the part of the people themselves. The influence of age in diminishing the fertility of married women has had attention drawn to it by MATTHEWS DUNCAN, COGHLAN, and other writers. COGHLAN has shown that the probability of a birth occurring within one year after marriage in the case of a woman aged 21 at the time of her marriage is 396 per 1000, while the probability in the case of a woman married at the age of 36 is only 125 per 1000. In the same way, the effect of age on the average issue is shown by the fact that while the average number of children to a marriage is five when the mother is aged 20 years at the time of her marriage, it is only 1·36 when she is aged 35 and 0·52 when she is aged 40. The average issue of women at the 1901 census married before 1881, when married between the ages of 20–25, was in England and Wales 7·27, while for those married between the ages of 35–40 it was only 1·75; and if recent periods are compared with remote ones there is a definite diminution in the degree of fertility at all ages at the present time.

In considering the factors which influence fertility and fecundity it is necessary to devote our attention to animals rather than to man, because of the fallacies introduced by the prevention of pregnancy among the latter. HERBERT SPENCER put forward the view that the power to sustain individual life and the power to produce new individuals are inversely proportional, so that with an abundant food-supply and a favourable environment there is a high degree of fertility, while with the opposite conditions prevailing the degree of fertility is reduced. There are, however, many other factors which must be taken into account, and one of them, as we have seen, is the influence of age. In this respect, no doubt, the same law applies to animals as to man, and, as MARSHALL points out,[1] GEYELIN has shown that the fertility of the domestic fowl rises to a maximum in the third year after hatching, and in further years gradually falls to a minimum. The marked effect produced by the surroundings and food of an animal upon its fertility was noted in a special way by DARWIN, who attributed the fertility of many of the domestic animals to the regular and abundant food-supply they obtained with a minimum of labour. A very good example of this, cited by him, is the case of the wild duck, which lays perhaps some ten eggs a year, as contrasted with the domestic duck, which may lay as many as 80 or 100 in the course of the year. That good feeding is not the only factor concerned is seen, however, in the case of many wild animals kept in captivity which are often completely sterile in such surroundings even when they couple freely. As DARWIN points out, this condition is common to so many different types of captive animals that it cannot be attributed to any one factor such as change of food, or alteration in the amount of food, or change of climate, or want of exercise. Some further explanation is required, and no doubt it is to be found, as he suggests, in any change in the habits of life which may, when great enough, be found to affect the powers of reproduction. That an excessive amount of food or an improper kind of food may produce such a condition is shown by the notable sterility of animals which have been especially fattened, such as cows which have been fed for the butcher. A similar condition is not infrequently met with in women, and every practitioner is familiar with the young woman who grows rapidly fat and at the same time suffers from complete or partial amenorrhœa and sterility. In this relation the observations of HEAPE and MARSHALL on the conditions which influence the fertility of sheep are of great interest. The former has shown that the fertility of a flock depends largely upon its management, the quantity and quality of the food, the climatic conditions, and the character of the pasture. In an investigation on the fertility of Scottish sheep MARSHALL points out that the practice of "flushing," or the artificial stimulation of the ewes by an extra supply of food at the approach of the breeding season, is undoubtedly beneficial, and the percentage of lambs born is highest among sheep which have been subjected to this process. Not only does this practice tend to increase the fertility of the sheep,

[1] The Physiology of Reproduction, 1910.

but it also hastens the onset of the sexual season, and this result may be ascribed, according to MARSHALL, to a general increase in the ovarian metabolism. At the same time, if the excessive feeding is overdone and the sheep are forced to depend for the rest of the year on a mere sustenance diet, their fertility ultimately tends to become impaired.

Among other factors which must be taken into account in a consideration of fertility and fecundity are the influences produced by in-breeding and by heredity. The inheritance of fertility in man has been investigated by KARL PEARSON, who has demonstrated that fertility is transmitted equally through the male and female parents, while he has also shown in the case of thoroughbred horses that the sire hands down to his daughter a portion of the fertility of his dam. The great importance of the questions to all those who have the welfare of the race at heart was never more apparent than it is at the present day, and these problems will well repay further research, since the volitional limitation of the birth-rate, prevailing as it does chiefly among the more responsible members of society, is associated with no diminution, if not indeed with an actual increase, in the numbers of the mentally and physically unfit. In this connexion we may refer our readers to a striking if unscientific compilation, entitled "Racial Decay," made by Mr. OCTAVIUS CHARLES BEALE, and just published at Sydney, New South Wales.

# Annotations.

"Ne quid nimis."

## STANDARD BREAD.

WE have often enough appealed in our columns for a nutritious loaf of bread, which was also appetising, to replace the dazzling white tasteless rolls and slices which modern machine methods have given us. We have written long since against reducing bread to a mere mass of bleached starch. Nature endows wheat flour with things other than starch, and these things form essential elements in wheat which are of the utmost value to the human animal. We are tired of hearing that "the thing can't be done" when it was done for centuries and centuries before our time, and we are always in some doubt when modern and improved methods are mentioned as to whether the improved method is to the advantage of the consumer. The making of bread has been brought to a remarkably constant standard of recent years, but unfortunately the standard is a poor one, and pays but little compliment to nature's original product. It is based merely on colour, texture, lightness, or any other quality which has no reference to dietetic value at all. Real bread has been taken out of our mouths by modern methods of impoverishment, and it is time to fasten the standard on an altogether different requirement. It is one thing, however, to suggest a standard and another to bring that standard within the range of practical politics. Between the extreme schools let a compromise be made. We are told, on the one hand, that in roller-milled flour certain valuable constituents represented in the germ and the bran are eliminated; those who lay stress on this point seem to forget readily that bread made from such a flour is practically completely absorbed by the eater. On the other hand, while whole-meal contains these valuable constituents its absorption is far from complete, and there is a consequent waste of food material. Physiological experiments have demonstrated these facts, and the husk in the whole-meal is responsible for preventing a certain amount of the bread from being assimilated. The standard bread, it seems to us, should not contain the husk of the wheat, but it should contain the germ, as is the case with stone-ground flour. But the practical baker says of this method of manufacture that the presence of the germ discolours the flour and gives it a decided tendency to become rancid. The germ also contains active diastase which interferes with the production of a satisfactory sponge and dough. If that is the case, it is difficult to understand why very excellent bread with attractive flavour and texture was ever successfully produced in the pre-roller-milling days. We are not prepared to accept the statement that, if the germ offers any difficulty at all, the difficulty cannot be removed. The disadvantages of the presence of the germ in the making of the loaf, if and when they are present, can be overcome and turned into advantages. If we are right here, there can be no question of what the standard for bread should be, though the quality of the wheat must be reckoned with.

## THE HEALTH OF THE ARMY IN 1909.

THE continuous improvement in the health of the British Army that has now been in progress for several years, and to which we are getting accustomed, is more noticeable than ever in the statistics for 1909 which have just been published. We hope to deal with the report in an early issue: at present we merely wish to draw attention to the remarkably high standard of efficiency that has now been reached. The proportionate numbers of men admitted to hospital, and of cases constantly sick in hospital, are practically only half what they were according to the decennial average, 1889–1898; the invalids finally discharged from the service are rather more than half, and the deaths appreciably less than half, the proportionate numbers of that decennium. The improvement has been taking place steadily year by year since the end of the South African war in 1901. It cannot be expected that this progress will be maintained year after year indefinitely—finality must be reached some day; but, as the Director-General intimates, further improvements in the sanitation of barracks and camps, and the advance of preventive medicine, should ensure the maintenance of the present state of health that is so satisfactory. Putting on one side for the moment the professional aspects, whether viewed from the military or the medical standpoint, and considering merely that of the taxpayer, we find that more than 2200 beds in military hospitals at home stations have been closed down as no longer required; while in the colonies a further 901 have been found to be unnecessary. The number of men sent home as invalids has been reduced by 570, compared with the previous year, although the strength of the army is numerically greater. The improvement is manifest in nearly all the preventable diseases that are of importance in military service. Thus, for enteric fever, the admissions were in a ratio of 3·8, compared with 7·2 per 1000 during the previous quinquennium; Malta fever has practically disappeared; venereal affections caused 73·4 admissions, compared with 105 per 1000. Malaria, however, in spite of all efforts at prevention, caused 75·3 per 1000 admissions, a perceptible increase on the decennial average of 64·1, Jamaica, Straits Settlements, and India having suffered severely; though in Mauritius and South China there has been an improvement. Enteric fever is always a source of anxiety to the military medical officer charged with the care of large bodies of men brought together, often under circumstances of urgency; it is gratifying to find that at neither of the large camps at the Curragh or on Salisbury Plain did any outbreak occur during 1909. It is stated that over 80,000 troops were brought together during the summer

on Salisbury Plain under canvas. We have some idea, therefore, of the magnitude of the sanitary problems involved and of the success that attended their solution. Another instance of successful sanitation is that of the territorial camp at Caerwys in Flintshire, where 14,000 men were concentrated; the water-supply had been condemned, and all drinking water was sterilised by means of a heat exchange apparatus with complete success. In India, also, and South Africa there has been a most satisfactory decrease in enteric prevalence. In the former command it is interesting to learn that an increasing number of cases are being reported which show infection by paratyphoid bacilli; in South Africa most of the cases occurred at Pretoria and were of very mild character, such as, in former years before agglutination tests were carried out, would have been returned as simple continued fever or influenza. We notice, by the way, that in this fifty-first volume the title has been changed from "Army Medical Department Report" to "Report on the Health of the Army." If the condition of things during the past year be compared with that existing, say, 30 years ago, there can be no doubt that its description is more fitly styled a report on the health, than on the sickness, of the population concerned. The military authorities generally, and the Director-General and his colleagues in the Army Medical Service in particular, are to be congratulated on the excellent state of the health of the army, which is a source of satisfaction to every citizen of the Empire.

## THE POSITION OF THE GENERAL PRACTITIONER.

A PAPER recently read by Mr. Edward Jessop (President) before the Hampstead Medical Society drew attention to the gradual change which is taking place in methods of treatment of disease and the effect this is having upon the interests and position of the general practitioner. Without containing anything new, Mr. Jessop's views form a good *résumé* of some urgent questions. Whereas formerly treatment mainly consisted in the administration of drugs, new and expensive drugless methods are now replacing the old, and there is a tendency to substitute institutional treatment for treatment in the home, on the ground that the most efficient treatment of disease needs the safeguard and apparatus which are to be had completely only in a hospital or institution, and not in a private house of any kind. The effect of such an opinion, if it become general, will be to deprive the family practitioner of a large part of his practice, at any rate of most of his serious cases. "However much anxiety the present may give the thoughtful practitioner," says Mr. Jessop, "his future is still more precarious, every man's hand is against him; the medical official seems desirous of controlling some ever-expanding portion of the community in order to advance his own sphere of interest, by getting under his own organisation whole masses of the public and pauperising them by offering them free or inefficiently paid medical service." Although we cannot agree entirely with Mr. Jessop in attributing to the rapacity of the medical official the loss which the general practitioner sustains nowadays in many directions, there is much that is true in his complaints and fears. The suggestion of remedies for this state of things is a much more difficult matter than the statement of their many causes. Mr. Jessop finds salvation in professional coöperation in the form of local unionism. As far as the rivalry of out-patient departments goes this form of action is sound. His proposals for the opening and upkeep by the local medical practitioners of a bacteriological and X ray laboratories are novel but not too enterprising for such a district as Hampstead, and would, if carried out, be a practical evidence of local coöperation which it would be pleasant to record. There is a danger, however, of local unionism running to excess and impeding that coöperation between all branches of the profession which the institution of consultative out-patient departments would do much to establish and consolidate.

## ONCHOCERCIASIS.

SINCE the establishment of the Foods Department of the Local Government Board some five or six years ago much admirable work has been done by it in the way of supervision of our foodstuffs and of investigation into the soundness of our meat supplies and the adulteration or sophistication of other articles of diet. The latest contribution furnished by this department deals with a parasitic condition to which the new and strange name of "onchocerciasis" has been given, and which is met with in frozen quarters of beef imported into this country from Australia. The inquiries upon this subject were conducted by Dr. A. W. J. MacFadden, the present Acting Chief Inspector of Foods, in conjunction with Dr. Robert T. Leiper, the well-known helminthologist of the London School of Tropical Medicine.[1] It appears from the reports of these experts that for the last 12 months or more the attention of the department has been directed to the presence of nodular masses, varying in size from that of a pea to that of a walnut, in frozen meat arriving at certain of our English ports from Australia. These nodules, known to butchers and others under various names such as "worm-nests," "white kernels," or "parasitic tumours," contain a thin thread-like worm which Dr. Leiper has identified as belonging to the family Filariidæ, genus Onchocerca, hence the name onchocerciasis. These parasitic nodules are practically confined to the region of the flank and brisket of the forequarter of the animal, though they may occasionally be found in the hindquarter, but in that case limited to a small area over the stifle, or knee-joint. This localisation is of importance, as will be seen, when the meat has to be passed for human consumption or rejected. The condition is not confined to cattle in Australia, but has been found in animals in the United States of America and elsewhere. Happily, the encysted parasitic worms and their young do not survive for more than a few hours the death of the cattle in which they exist. It is interesting to learn that the parasite belongs to a class which needs the intervention of a biting insect in which it has to undergo a portion of its development; without the intervention of this insect the young worms cannot leave their bovine host or enter into the body of another animal. The transmitter or intermediate host of the onchocerca is in all probability either a Stomoxys, Hippobosca, Tabanid, or one of the Ixodidæ. It is very reassuring to hear from the experts that the direct development of the parasite in man as a result of eating the affected meat is *impossible*. From the butcher's point of view the nodules may be regarded as merely interfering with the general appearance of the beef. But the report very properly points out that certain other parasites present in meat foods are of a dangerous and communicable character, and the public are not in a position to differentiate one kind of encysted parasite from another without skilled assistance. It is therefore very undesirable to encourage in the public mind an attitude of indifference towards the presence of any parasitic condition in meat. Although the worms themselves in the beef cannot when eaten by man affect him by producing onchocerciasis in his flesh, yet there can be no

[1] Reports to the Local Government Board by Dr. A. W. J. MacFadden and Dr. Robert T. Leiper, F.Z.S., on a Parasitic Condition (Onchocerciasis) met with in Australian Beef [Food Reports No. 11]. Published by H.M. Stationery Office. Price 6*d*.

question as to classing meat so affected as unsound, for both the worms and the local inflammatory products by which they are surrounded in the nodules are foreign to sound beef and must be objectionable to the consumer. The chief ports at which the affected carcasses are imported are London and Liverpool, and in both of these ports a nearly similar course of action has been, after due consideration, adopted with a view to prevent the use of meat infected by the onchocerca. All forequarters of Australian frozen beef are detained on arrival in cold store until the affected parts —namely, the flanks and briskets—have been sawn off each quarter. The remainder of the forequarter is then released, the flanks and briskets being detained by the sanitary authority in cold store until the importer has given notice that he wishes to dispose of them either for industrial or for food purposes. If it be desired to use the detained parts purely for industrial purposes examination of the meat is not called for; it only remains for the local authority to take the necessary steps, by denaturing or otherwise, to secure that no part of the meat can be used for human consumption. If, on the other hand, the importer wishes to utilise the detained flanks and briskets for food, he is required to have the pieces thawed out and cut up under supervision of an officer of the sanitary authority, who in each case directs on the spot what is to be done should he regard the meat as unfit for food. In the large majority of instances the importers have not availed themselves of the option of having the detained portions examined; they have found it more convenient to surrender the parts in question to the authorities for destruction without examination. This method has necessarily caused financial loss to the importers; but it is to their credit that notwithstanding this they have have shown a ready willingness to comply with the requirements of the sanitary authorities and the central department. The provisions made by the Local Government Board in the Foreign Meat and Unsound Food Regulations, 1908, have enabled the large importations of affected meat to be dealt with efficiently at the port of entry. The extent of these importations may be gathered from the fact that between July and October of last year the port of London alone was receiving between 60,000 and 70,000 quarters of Australian beef per month. The report is reassuring, and shows that we need not be afraid of consuming beef imported from Australia so long as the present method of dealing with it at the port of entry is followed, little if any of the affected meat reaching the market. The report also indicates the value of the work which is being done by the Foods Department and its officers. As the area of distribution of the onchocerca is far wider than Australia we may trust our port sanitary authorities, with the assistance of the Local Government Board and its food inspectors, to maintain a close watch upon all beef carcasses imported from other countries.

## OCCULT PHENOMENA.

THE desire for knowledge which is characteristic of the human intellect has in all ages led men to study the explanation of facts, or rather what appear to be facts. For sometimes the fact turns out not to be a fact. Every one will remember the problem of the fish and the bucket of water which Charles II. propounded to the Royal Society. As an example of an opposite nature, it was evident that the perturbations of the planet Uranus were due to some other body attracting it, and it was suggested that this other body was another and as yet undiscovered planet. This planet, afterwards called Neptune, was assigned a place in the heavens solely by mathematical calculation, and these calculations were carried out independently and practically identically by Adams and Leverrier. Dr. Joseph Grasset of the University of Montpellier, being anxious to record the manifestations of occultism which have been reduced to a scientific basis, has written a book entitled "L'Occultisme Hier et Aujourd'hui; le Merveilleux Prescientifique," and an English translation of this work now lies before us.[1] In Dr. Grasset's words, "Occultism is not a survey of all things hidden from science (I mean to positive science, after Auguste Comte's manner) but which may belong to it." He shows how some occult phenomena have been "redeemed from the domain of occultism," such as hypnotism, the involuntary and unconscious movements which are revealed in table-turning and "the sensation of memory, so-called polygonal." To this last are due crystal visions and the imaginations of mediums. The polygon, we should say, is Dr. Grasset's name for the lower psychical centres. Telepathy and presentiments are phenomena the scientific demonstration of which Dr. Grasset considers at present to be very far off, while mental suggestions and the moving of objects without human contact, such as levitation, are, in his opinion, less difficult to demonstrate and should be at once investigated. We can recommend the work as well worthy the attention of our readers, but if possible they should read it in the original, for M. Tubeuf's English, although wonderfully good for a foreigner, is somewhat difficult to read, as witness the following sentence on p. xxi.: "One takes the risk of being misled because one believes a little in advance, and one hopes that the case, about which one asks oneself if it is true, will prove to be true indeed." There is a danger for some classes of persons that the study of the occult will unbalance a mind which starts in a more or less unstable condition. A study of Dr. Grasset's book will give them a safe chart by which to steer and safe data by which they may, as M. Faguet says in his preface, "calculate the reckoning of the ship." And the limitations and rules laid down will be no less useful to the truly scientific explorer of the borderlands of science as at present known.

## "CHAMPAGNE AND ITS SIMILARS."

IN an annotation last week under the above heading we suggested, when discussing certain fraudulent practices which had been brought to light by the peasants' strike in the Champagne district, that the French Government might do well to inaugurate a system of control, designed to secure the bottling of nothing but the Champagne-grown product under a Champagne label, other designations being reserved for other wines. We now learn that this is exactly what the French Government proposes to do, and a Bill to this effect was placed upon the table of the Chamber of Deputies on Monday last. The Bill provides for a system of State control by which the transport of the wine from the presses of the growers to the cellars of the manufacturers will be under official eyes, and the manufacturers will be bound to store all sparkling wines made from grape-juice produced outside the true Champagne area in cellars which are to remain separate and distinct from the champagne cellars. The cost of this State control is to be met by a tax of five centimes per bottle to be borne by the manufacturer. Finally, a year after the Bill has passed into law wines coming under the definition of champagne will only be allowed to be placed on the market if they bear the word "champagne" in very distinct characters. It is obvious that the measure suggested is calculated to increase the confidence of the consumer, and at the same time the Champagne district will be protected from outside competition and from

[1] The Marvels Beyond Science. By Joseph Grasset, M.D., with a Preface by Emile Faguet of the French Academy; authorised English translation by René Jacques Tubeuf. New York and London: Funk and Wagnalls Company. 1910. Pp. 387. Price 7s. 6d. net.

tactics which were not fair to either. The law may press hard upon the manufacturer in times of shortage; but as the consumer will no doubt be asked to pay for any increase in the cost of production, he may well have his attention drawn to the fact, pointed out by us last week, that champagne "similars," as for example the sparkling saumurs, show dietetic qualities not a whit inferior to genuine champagne. Flavour, after all, may be a costly affair.

## MEDICAL ADMINISTRATION IN TRINIDAD.

IN our issue of Sept. 17th, 1910 (p. 904), we alluded to the proceedings of a commission appointed by the Governor of Trinidad to inquire into the circumstances of an alleged case of plague admitted into the Colonial Hospital and certain statements made concerning the medical administration of the colony. The report of this commission has now been published. It is an exceedingly lengthy document, extending to 146 folio pages, and with the minutes of evidence and appendices forms a volume of 860 pages. The commission sat for 27 days, counsel were engaged on either side, and everything that could possibly be said or written on the matter appears to have been written or said, not once, but many times over. We have, first, an exhaustive report by the chairman, Mr. Justice A. D. Russell; then three separate reports by three of the commissioners; then a joint report by these same four gentlemen; lastly, an independent report by the fifth member of the commission, who, however, agrees in all essentials with his colleagues. We are glad to learn that the commission did not find any of the serious allegations that had been made against the medical administration and personal character of Dr. H. L. Clare, the surgeon-general of the colony, borne out by the facts disclosed in this protracted inquiry. With regard to the alleged suppression of cases of infectious disease the commission does not consider that the surgeon-general acted in bad faith, but finds that his tendency not to recognise such cases became so marked as to expose him to reasonable suspicion of the intention to suppress them, and that owing to the methods he adopted precautions which ought to have been taken were omitted or unduly delayed. As to complaints regarding the cutting down of supplies of drugs and curtailment of the food supplies to hospitals, the commission considers many of these to have been trivial, and that there was no evidence to show that the hospitals had suffered; the surgeon-general's purpose, to ensure economy and check waste, was a good one, whatever may be thought of the means adopted. With regard to the understaffing of the hospitals, it finds that the medical service has been in a dislocated condition, owing to permanent appointments not being made, and that it is a question for hospital experts to decide what an adequate staff for these hospitals should be. It finds that the alterations made in the hospital rules by the surgeon-general were made with good intentions, and, if given a fair trial, might have produced decided improvements. In one instance it was alleged that the surgeon-general, in his capacity of senior consulting surgeon, had neglected his duty in not visiting the hospital to see a case of suspected plague. The commission finds that he was in error in not realising that it was his duty, as well as his right, to visit and advise upon cases, to assist in the diagnosis, and to direct precautionary measures. In recommending the dismissal of a young medical officer in connexion with a supposed case of plague, the commission finds that the surgeon-general acted unjustifiably, and in various respects improperly, especially in keeping back documents which had a bearing on the junior officer's defence, and which it was his duty to forward to the Governor. We are sincerely glad to hear that the chairman of the commission, although not able to acquit Dr. Clare of failings in administrative capacity, finds no proof of any lack of honour or integrity in his character. The other three signatories to the joint report, in their separate addenda, criticise Dr. Clare's action somewhat unfavourably. The lengthy report by the chairman is a careful *résumé* of the circumstances of medical administration in Trinidad during recent years, and includes a psychological study of the surgeon-general, which must be a document of great interest to this officer to read at his leisure, although perhaps not so agreeable for the subject of the study to peruse as for its author to compose. It exhibits an air of philosophic detachment that affords an agreeable contrast to the heated discussions at the court of inquiry. This inquiry was virtually a public trial. Certain letters had been written to the public press of Trinidad by Dr. Fernand de Verteuil, upon which certain charges were based. Counsel appeared for this gentleman, who in the public interest came forward as prosecutor; counsel also appeared for Dr. Clare, the surgeon-general of the colony and responsible medical administrator. The proceedings therefore came to be a forensic battle, each side trying to prove its case, and neither trying to bring out the whole truth. In the course of the contest the surgeon-general was exposed to cross-examination for six whole days; in the words of the chairman of the commission, "over a range of subjects quite unprecedented in my experience." Mr. Justice Russell congratulates Dr. Clare on having come so well out of it, admits that it is a most dangerous ordeal to which to submit an accused man, and apparently would not allow such an occurrence again. We think that the dispassionate form of inquiry, or commission, to which we are accustomed at home, in which the object is simply to get at the facts of the case, not to secure a forensic victory for one side or another, is much to be preferred.

## SEROLOGICAL TESTS FOR BLOOD.

AT a special meeting of the Medico-Legal Society held at the Royal Institute of Public Health on Jan. 25th, Dr. W. R. Smith read a paper giving a *résumé* of the methods employed for the differentiation of human blood stains from those of animals. This was followed by an interesting demonstration of these methods by Mr. L. Rajchman, demonstrator of bacteriology at the institute. The technique of carrying out the precipitin test was demonstrated and explained at length. The principles on which this test is founded are now definitely accepted, and in Prussia, Austria, Würtemberg, and other states the procedure has received official recognition. Unfortunately, the test is a complicated one and can only be satisfactorily carried out by an expert in a well-appointed laboratory. As is well known, the test is based on the fact that if an animal be immunised by injections of a culture of a micro-organism a serum may be obtained from its blood which will cause a precipitate in a filtered broth culture of the same organism. Further, if an animal be injected with the blood of an animal of a different species, there can be obtained from the blood of the injected animal a substance which will produce a precipitate in the serum of the blood of animals of the same species as the animal whose blood was used for injection. For medico-legal purposes, a rabbit is injected with the defibrinated blood of a man, and from the rabbit's blood a serum is obtained which, when dropped into a clear solution of human blood, causes a cloudiness or precipitate to form, a result which is not produced in a solution of blood from another animal. The main difficulty in the process lies in obtaining from the rabbit an anti-human precipitating serum of the required strength. To be thoroughly reliable the reaction (that is, the

formation of the precipitate) must begin in five minutes and be complete in 20 minutes; any cloud appearing after that time cannot be considered as specific. Also, the dilution of the blood to be tested should be 1 in 20,000; more rapid results can be obtained if the dilution is 1 in 1000. Precipitates can be obtained by an anti-human rabbit serum of a less strength if the test is prolonged by incubating the tubes in which the mixed sera are placed, but the results are then found not to be so reliable. It is to be hoped that for purposes of the law opportunities will be afforded by the State for the preparation and further study of the serological tests. The detection and differentiation of blood stains in criminal trials are of such importance that every facility should be officially given for carrying out the necessary laboratory methods. It is an important fact that old blood stains will respond to the test as well as recent ones. Indeed, it seems difficult to fix a limit to the length of time which is required to destroy the substances which produce the reaction. Von Hannmann and Meyer maintain that they have been able to recognise, by means of the precipitin tests, the human origin of mummies 3000–5000 years old. Uhlenhuth and others, however, have not been able to corroborate these observations.

## THE VITAL STATISTICS OF DURHAM COUNTY.

Dr. T. Eustace Hill has been commendably prompt in preparing the vital statistics of the year just closed for the administrative county under his jurisdiction as medical officer of health. We have therefore pleasure in drawing attention to the general improvement he is able to record in the death-rates from most of the chief diseases as compared with the average rates in the decennium 1900–09. In the middle of 1910 the Administrative County of Durham is estimated to have contained a population of 865,960 persons, an increase of 11,160 on the estimated population of the preceding year. In the following table, which is copied from a print issued on the authority of the county medical officer, will be found the vital statistics of 1910, compared with those of the previous year, and also with the average statistics for the years 1900–09:—

| Administrative County of Durham. | Annual rates per 1000 living— | | Mean rates 1900-09. |
|---|---|---|---|
| | 1910. | 1909. | |
| Birth-rate | 34·4 | 35·5 | 35·5 |
| Death-rate (all causes) | 15·1 | 15·7 | 17·5 |
| Zymotic death-rate | 1·62 | 1·61 | 2·20 |
| Infant mortality (per 1000 births) | 126 | 124 | 153 |
| Small-pox | *Nil.* | *Nil.* | 0·007 |
| Scarlet fever | 0·08 | 0·09 | 0·14 |
| Diphtheria and membranous croup | 0·17 | 0·17 | 0·21 |
| Fever (enteric and continued) | 0·09 | 0·12 | 0·17 |
| Measles | 0·20 | 0·37 | 0·39 |
| Whooping-cough | 0·25 | 0·25 | 0·36 |
| Diarrhœa | 0·81 | 0·59 | 0·89 |
| Phthisis | 0·88 | 0·91 | 1·05 |
| Other tuberculous diseases | 0·65 | 0·73 | 0·83 |
| Acute respiratory diseases | 2·42 | 2·38 | 2·94 |

From this table it will be seen that so far from any recovery in the birth-rate there has been a still further fall from 35·5 per 1000 in the ten years ended 1909 to 34·4 in the year 1910. The general death-rate, which in the preceding decennium had averaged 17·5 per 1000 of the estimated population, fell to 15·7 per 1000 in 1909, and further fell to 15·1 in the following year. Infantile mortality last year was in the proportion of 126 per 1000 births, and although this rate was slightly higher than in the previous year it was lower by 27 per 1000 than the average rate in 1900–09. The mortality from tuberculous phthisis, which in the ten-year period ended 1909 was equal to 1·05 per 1000, fell to 0·88 in the year 1910. All the common infectious diseases showed a decline last year as compared with the decennial average; and this decrease is particularly satisfactory in the case of enteric fever, in view of the fact that, according to the Registrar-General's reports, the county of Durham forms part of the northern area of high enteric fever mortality, in which that disease has been exceptionally fatal in recent years. Later on we shall doubtless receive from Dr. Hill the usual more detailed account of the public health in the county of Durham, including particulars of the local distribution not only of mortality but also of the notified cases of enteric fever and other diseases that are known to depend for their propagation mainly on insanitary conditions.

## THE HEALTH OF THE NAVY IN 1909.

WE have received the Statistical Report on the Health of the Royal Navy for 1909, a detailed review of which will be published in a succeeding issue. An outstanding feature of this report is the inclusion in the appendix of papers upon various important medical subjects by surgeons of the service—contributions to professional literature which we welcome with great heartiness. Pyrexia of uncertain origin caused numerous cases of illness in the Mediterranean Command, and we look to the surgeons of the Royal Navy for their share in the elucidation of these diseases. Among noteworthy features are the statistics for venereal diseases, which do not show any diminution in severity nor acceleration of recovery in spite of the improved methods of treatment now available and adopted, and the much-increased prevalence of rheumatic fever in all commands except the Australian. The admission ratio for rheumatic fever compared with the previous five years has been more than doubled, and although some part of the increase has been due to more accurate classification, it is not entirely thus accounted for. The statistics for alcoholism are wonderful—viz., 115 cases in the whole force of 112,700 men. This is a condition of sobriety of which even the most ancient alcohol-immunised nation might be proud, and which reflects the greatest credit upon all concerned, officers and men alike.

## THE DENTAL CURRICULUM.

IN the current issue of the *British Dental Journal* reference is made to the advisability of substituting hospital for private training in dental mechanics. The subject is one on which those intimately connected with the teaching and examining of dental students are deeply interested. In our view systematic instruction at a properly equipped dental school must have a great advantage over training obtained under a private practitioner. It is, perhaps, a pity that our contemporary has not referred more fully to the dental curriculum as at present constituted, for we cannot help feeling that it seems to be out of touch with the modern development of dental surgery. If we go back about 50 years we find that the average dental practitioner was principally occupied with the manufacture of artificial dentures, and that conservative operations, or, to speak perhaps more correctly, dental surgery, occupied but little of his time. We find that the curriculum designed about this period required three years' training in mechanical dentistry and two years' general and dental hospital practice. The practice of dentistry was mechanical rather than surgical. During the "seventies" and

more especially during the "eighties," greater attention was bestowed on conservative operations, and with a corresponding growth in pathological knowledge the practice of dental surgery began to be considerably more surgical, requiring from the practitioner a more thorough knowledge of medicine and surgery. In other words, the practice of dentistry became more the practice of dental surgery than that of dental mechanics. The curriculum, however, demanded by the various examining bodies still continued to insist on three years' mechanical training and two years' general and dental hospital practice. Within the last 20 years, and especially during the last 10, our knowledge of the important relationship between dental and general diseases has made marked progress, dental pathology has made rapid strides, and the practice of dentistry has become more and more surgical in character and less and less mechanical, and there is every indication that the purely surgical aspect will continue to grow. Dentistry, therefore, at the present time demands that the surgical and medical training should be greater than the mechanical. The curriculum, however, has not moved with the gradual evolution of dentistry, for although the Royal College of Surgeons of England has reduced the mechanical training to two years, the time still allotted equals that given to the more important part of the training—namely, the surgical and medical. Without wishing to enter into detailed reasons, it seems to us more in keeping with the actual knowledge required of the dental surgeon that the time allotted to the mechanical training should be reduced and that given over to the medical and surgical training lengthened. In connexion with the general and dental hospital training it does not seem rational that these should be taken concurrently, for it is unwise to try to learn a specialty before the ground principles of medicine have been mastered. The training would be more rational, and without doubt more efficient, if the instruction at the general hospital were completed before the special study of dental diseases is undertaken, and it would be well if the hospital course included instruction in general pathology.

## THE LIABILITY OF AN EDUCATION AUTHORITY FOR ACCIDENTAL INJURY TO A PUPIL.

A CURIOUS case of accidental injury to a child attending a public elementary school at Darnall led recently to an action in the Sheffield county court against the Sheffield Education Authority. The desks used in the school were of a type described as "dividing desks," a portion of which apparently is hinged to the rest and capable of being raised. These had been in use without any recorded accident for 20 years. The plaintiff, a child 6 years of age, managed to insert the tip of the little finger of his left hand in a hole in the hinge of the desk in front of him, and when on the order "to push up desks" being given by the teacher the moveable portion of the desks was raised his finger was caught and injured, a portion of the tip about equal to the length of the nail being torn off. The child was treated at the infirmary, so that no medical attendance had to be paid for, and the evidence did not predict any serious loss of power in the hand; the injury to the finger-tip was disfiguring and the child had suffered pain. The jury awarded £10 damages to the plaintiff against the Education Authority, which presumably implies that they were of opinion that the type of desk used was dangerous, as to which there was evidence that the hole in which the child inserted his finger was not a necessary feature in the hinge. A point of law as to the liability of a local education authority for such an accident occurring in a non-provided school during the hours devoted to secular instruction was argued and was decided by his honour Judge Benson in favour of the plaintiff. Stay of execution was granted when judgment was given in the child's favour so the question as to what may constitute evidence of negligence in a case of this kind, as well as that of the responsibility of the education authority, may be raised again in the Divisional Court. Whatever the final result may be, however, the case shows what extreme care is necessary on the part of school managers to prevent the presence of anything in a school building or playground that is capable of leading to an accident. Certainly no one who has the duty of examining in any capacity the fittings and apparatus used should be reproached with "fussiness" or excess of zeal, because he points out the possibility of an ingenious or careless child being hurt by something which for years has proved harmless to his fellows.

## THE POSITION OF INSPECTORS OF NUISANCES.

SOME additions are made by the new Order of the Local Government Board with regard to public health administration[1] which, while they relate to the duties of the inspector of nuisances, are of great general interest and of far-reaching importance in public health. The inspector of nuisances is now required, if so directed by the council, to remove cases of infectious disease to hospital and to disinfect infected premises. He is also, if so directed, to act as inspector of canal boats and as officer under the Canal Boats Acts, 1877 and 1884. Another duty devolving on the inspector is to furnish annually to the medical officer of health a tabular statement as to the inspections made by him, the number of statutory and other notices served, and the results of such service, data which it is presumably intended should be embodied by the medical officer of health in his annual report. With respect to the work of inspectors of nuisances, the Board takes the view that in places with a population of over 10,000 it is generally desirable that the inspector should devote his whole time to his duties, but in smaller districts the opinion is expressed that the inspector may act as surveyor under the Public Health Act, 1875, as inspector under the Infant Life Protection Act, under the Shop Hours Acts, or the Factory and Workshops Acts, or as assistant officer under the Unsound Food Regulations. He may also act as superintendent of scavenging. All these changes make for the appointment of better qualified and whole-time inspectors, and as such are steps in the right direction.

## TWO RAPID METHODS OF STAINING THE SPIROCHÆTA PALLIDA.

A SUBSTITUTE for the ordinary Giemsa method of staining the spirochæte of syphilis is described by Dr. E. Klausner in the *Berliner Klinische Wochenschrift* of Jan. 23rd. The staining reagent is prepared in the same manner as in the Gram method of staining bacteria. Three cubic centimetres of anilin oil are shaken with 20 cubic centimetres of distilled water for five or ten minutes, and the emulsion so prepared is filtered through a moistened filter-paper. To the clear fluid thus obtained half its volume of a concentrated alcoholic solution of gentian violet is added. The serum or secretion to be investigated is spread out in thin parallel smears along an ordinary microscopic slide and fixed by holding over a 1 per cent. solution of osmic acid for one or two minutes. The gentian violet solution is then poured over the specimen and it is heated for 20 to 30 seconds over a flame. The stain is then washed off with water; the specimen is dried and examined microscopically with an oil immersion lens. The spirochætes are rendered clearly visible by this means, appearing reddish blue against a rose-coloured

[1] THE LANCET, Jan. 21st, p. 175.

ground. The spirochæta refringens is more deeply stained and can be differentiated. Dr. Klausner claims for this method that it is rapid and reliable, that the reagent is easily prepared, and that it will keep for one or two months. He lays great stress upon the strength of the gentian violet, believing that that recommended by him gave the most satisfactory results. Another method is described by Dr. Albert A. W. Ghoreyeb.[1] A smear preparation is made and fixed by exposure to a 1 per cent. aqueous solution of osmic acid for 30 seconds. It is then washed in water and covered for 10 seconds with a solution consisting of liquor plumbi subacetatis diluted 100 times with distilled water. It is again washed and covered for 10 seconds with a 10 per cent. aqueous solution of sodium sulphide. It is then washed and the whole process is repeated twice, the osmic acid solution is then applied for 30 seconds, the specimen is washed in water, dried, and mounted in balsam. Spirochætes, bacteria, and cellular débris are stained black by this method.

## NEW CHEMICAL LABORATORIES AT UNIVERSITY COLLEGE, LONDON.

IN April of last year we brought before our readers an appeal for £70,000 for providing new chemical laboratories at University College, London, including the purchase of a site in Gower-place; and in November we drew attention to the urgency which then existed for the collection before Christmas of £25,000 (the cost of the site) in order that the Senate of the University might be in a position to exercise its option of purchase. By Dec. 10th a sum of £10,000 had been raised towards the required amount, but the total sum was not forthcoming at Christmas. The option to purchase was, however, extended to Jan. 31st, and we are now able to state with much pleasure that the fund has been completed by a generous gift of £4500 from Mr. Ralph C. Foster, and the option on the site has been exercised. Prince Arthur of Connaught now appeals for subscriptions towards the second object, the erection of the building. For this purpose it is estimated that a sum of between £45,000 and £50,000 will be required, and it is hoped that the generous example of all those who have already contributed to the fund for purchasing the site will be followed by other public-spirited citizens so that the cause of scientific research may be advanced in a manner worthy of London. There are cogent reasons why this appeal should find a generous response, for a debt is owed by the public to Sir William Ramsay and his co-workers in the University College laboratories. The application of radio-activity to human needs has become possible largely through their labours and researches, and they are entitled to ask for relief from their present hampered accommodation, in order that they may pursue their labours in adequate and well-equipped laboratories.

IN view of the great practical importance of the newer methods of investigating cardiac disease, especially by the record of the electric changes in the heart with the string galvanometer, the general committee of University College Hospital, London, has established a special cardiographic department, and has placed it in the charge of Dr. Thomas Lewis, whose work in this direction is so well known.

FOUR lectures on Plague (the Gresham Lectures, 1911) will be delivered on Feb. 14th, 15th, 16th, and 17th by Dr. F. M. Sandwith, Gresham Professor of Physic, at the City of London School, Victoria Embankment, E.C. (three minutes' walk from Blackfriars Bridge). The lectures are free to the public, and will begin each evening at 6 o'clock.

THE Hunterian Oration of the Hunterian Society will be delivered at the London Institution, Finsbury-circus, E.C., on Wednesday, Feb. 8th, at 8.30 P.M., by Dr. J. H. Sequeira, on the Progress of Dermatology since Hunter's Time.

PARLIAMENT opened on Tuesday, Jan. 31st, with the election of the Speaker.

[1] Publications of the Massachusetts General Hospital, vol. iii., No. 2, p. 367, a paper reprinted from the Journal of the American Medical Association, May 7th, 1910.

# ANNUAL REPORT FOR 1909 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

## I.

AMONG many important matters discussed in Sir Shirley Murphy's report, upon which we commented briefly in a leading article in THE LANCET of Jan. 14th, attention is once more directed to the difficulty experienced by sanitarians in estimating populations for periods remote from the census. The difficulty is considerable where the area is large, such as that of the County of London. Where the areas are smaller, like those of the metropolitan boroughs, the difficulty is greatly increased, whilst it is well nigh insuperable in the case of foreign cities, concerning which the necessary particulars are seldom available.

*Natural Increase by Excess of Births over Deaths.*

In existing circumstances it is probable that the most reliable measure of vitality will be attained by ascertaining the *natural increase of a population*—i.e., the difference between the births and the deaths occurring in a given period. The *actual increase of a population* cannot be estimated, even approximately, otherwise than by taking account, among other factors, (*a*) of the difference between emigration and immigration, (*b*) of the varying sex and age constitution of the people, and (*c*) of the balance between births and deaths. Consequently, at the present distance from the 1901 census, any estimate of the actual increase of the population must partake of the nature of guesswork. The comparability of separate communities, as regards the natural increase of their populations, is sometimes affected by migration. It may also be affected even more seriously by differences in the age and sex constitution of the living. Nevertheless, the combined effect of these disturbing agencies can hardly suffice to vitiate general comparison of the crude rates of natural increase as among separate communities.

From a table exhibiting the local rates of natural increase it appears (1) that in all the largest English towns except Hull the rate of increase in 1909 was below that of the preceding five years, and (2) that in the same year the rate exceeded that of London in six of these towns, and was below it in seven others. From another table comparing the rate of increase in London with that of the chief foreign cities we learn that the rate was above that of London in Amsterdam, Copenhagen, and New York, but below it in seven other cities—the lowest rate obtaining in Paris, where it was only 0·3 per 1000. We further learn that in 1909 the excess of births over deaths was below the quinquennial average in all the chief foreign cities except Copenhagen, St. Petersburg, and New York. With reference to this table Sir Shirley Murphy remarks that where the populations concerned are of different nationality the factors affecting the rate of natural increase tend to vitiate comparison even more seriously.

*Continued Fall of the London Marriage-rate.*

Concerning the proportion of marriages among Londoners the county medical officer remarks that in the year under notice it was only 15·8 per 1000 living—a rate which is not only the lowest on record, but is below the mean rate in 1851–60 by 4·8 per 1000. Throughout the closing 30 years of the last and the first nine years of the current century there has been an almost uninterrupted decline in the London marriage-rate. For many past years the proportion

of minors in 100 marriages at all ages has been diminishing steadily. In the year under review 3·1 per cent. of the husbands and 11·1 per cent. of the wives were under the age of 21 years, the percentages in the decennium ended 1890 having been 18·9 and 20·8 respectively. Calculated on the total number of marriageable persons—i.e., on the unmarried and widowed portions of the community aged 15 years and upwards—the London marriage-rate has declined during the last 37 years by not less than 27 per cent.

*Decline in the London Birth-rate.*

The decrease in the birth-rate of the metropolis noticed in previous reports has continued through the year 1909, when the proportion did not exceed 24·2 per 1000 living at all ages; this is the lowest rate recorded since the establishment of civil registration, and is lower by 11·2 per 1000 than the rate in 1861–80, in which decennium the birth-rate attained its highest point. In this connexion Sir Shirley Murphy quotes a recent statement by the Registrar-General to the effect that as compared with 1870–72 the London birth-rate in 1909, calculated on the female population aged 15–45 years, has declined by 34·0 per cent. By means of another table the birth-rates of London are compared with those of other large English towns and cities. In the calculation of rates for this table the births in the principal lying-in institutions have been referred to the districts from which the mothers originally came. Another table is presented showing the rates of legitimate births in each metropolitan sanitary area in every 100 married females between the ages of 15 and 45 years. From this table it appears that the legitimate birth-rate ranges from 13·1 per cent. in Hampstead and 14·7 per cent. in Holborn, to 24·7 per cent. in Bethnal Green and 25·5 per cent. in Bermondsey. In another table the London birth-rate is compared with that of other large English towns, and from this it appears that in the year under notice the London rate was exceeded in nine out o 13 of the chief English towns, the remaining four alone showing rates below that of London. In contrasting the decrease of birth-rate in the different towns it is necessary to bear in mind that the value of these rates depends on the accuracy of the population estimates, which may, and probably does, vary considerably. In yet another table it will be seen that the decrease in the birth-rate which still persists in England and Wales is shared by all the principal foreign capitals, and that the birth-rate of London still compares not unfavourably with that of the majority of those capitals.

*Relation of Fertility to Social Condition.*

With respect to the standard adopted for the purpose of grouping sanitary districts in order of social condition the following facts are important. In tables going back to 1901, or in tables published in previous reports, the grouping of London districts in five groups of differing social condition has been based on the percentage of persons living in overcrowded tenements of less than five rooms, as shown by the latest census returns. But in tables appearing for the first time in the present report, or in tables dealing with figures for recent years only, the grouping is based on the proportion of children aged from 5 years to 14, scheduled for education purposes in the schools of the County Council. According to the latter classification we observe that Group I. consists of districts where the proportion of children scheduled for education purposes is less than 79 per cent., Group II. from 79 to 85 per cent., Group III. from 85 to 91 per cent., Group IV. from 91 to 97 per cent., and Group V. where the proportion exceeds 97 per cent. In this connexion, however, it is important to realise the fact that the proportion of children thus scheduled can only be ascertained by relying on an estimated total of children at school ages in each borough, and that these estimates are based upon the population of 1907 calculated for purposes of rate equalisation. Consequently, if there has been a movement of population limited to persons of one social grade it is obvious that the resulting comparisons will be to some extent affected. It is common knowledge that the fertility of married women decreases with advancing age; accordingly a comparison of the fertility rates of different sections of a community will be affected to a considerable extent by differences in the age constitution of married women in each community. Among married women in the poorer metropolitan districts the percentages living at the younger ages are higher than in the districts of a better class. With the object of correcting as far as possible for these differences, a factor has been calculated, based upon observations made in Sweden during the period 1891–1900, of the number of accouchements at certain ages among married women between the ages of 15 years and 45. No similar figures for the United Kingdom are available for recent years, but the Swedish figures do not differ materially from those relating to Edinburgh and Glasgow for the year 1855. From a table showing the results of applying this correcting factor to the London figures for 1903–09 we gather that if the fertility-rate of the metropolis as a whole, corrected as here indicated, be taken as 1000, the corrected rate will range from 873 in the first or best group of districts, and 914 in the second group, to 1112 in the fourth group, and 1264 in the fifth or worst group.

*Compulsory Notification of Births.*

In October, 1909, the Local Government Board, at the instigation of the County Council, made an order declaring the Notification of Births Act to be in force throughout the metropolis, eight of the metropolitan borough councils having refused or neglected to voluntarily adopt the Act. Under the Board's order the County Council now receives intimation of the whole of the births notified in London to the borough medical officers of health. Comparison of the number of births notified under the recent Act, with the number registered under the Act of 1874, reveals the fact that in some boroughs the requirements of the Births Notification Act have not as yet been fully complied with, notwithstanding the efforts of the sanitary authorities to make those requirements known. In Southwark and Finsbury the number of births notified slightly exceeds the number registered; this is due to the circumstance that the average interval between birth and registration is considerably longer than the interval between birth and notification. In several of the metropolitan boroughs the excess of registered over notified births is noteworthy.

*London Mortality in 1909.*

In consequence of favourable meteorological conditions and of comparative freedom from excessive epidemic prevalence the mortality of London continued to be very low in the year under review. Corrected for age and sex constitution of the population, the rate was only 14·7 per 1000 of the living at all ages—a rate which, although higher than that of the preceding year, was lower by 1 per 1000 than the mean rate in the five years 1904–8. The rate of London was lower than that of any other great English town, except Bristol and Leicester, and was also lower than that of any of the chief foreign cities, except Brussels and Amsterdam.

Among the metropolitan sanitary districts the corrected death-rates continue to show the usual wide variation. Thus, in the year under notice, whilst the rate did not exceed 10·1 per 1000 in Hampstead and 10·8 in Lewisham, it rose to 20 per 1000 in Shoreditch and 22·3 in the City of London. In this series of reports the death-rates of the London sanitary areas are fully corrected for institutional mortality. In the text of the present report attention is again drawn to the circumstance that in calculating the rates of mortality the populations have been estimated on the assumption that the rate of increase observed in the last intercensal period has since been maintained. The validity of this assumption may well be questioned, especially in view of the fact that a period of eight years has elapsed since 1901, the date of the last census enumeration. Moreover, we must remember that emigration and the declining birth-rate of recent years, besides affecting the numbers of the population, have probably altered its age constitution, in many instances considerably, and it is obvious that for this disturbing agency no reliable correction can be made until the figures of the forthcoming Census are available.

The statistics already discussed in this article relate to the mortality at all ages; but the report contains additional tables in which the rates of mortality at several stages of life are compared with corresponding data in the preceding decennium. From one of these tables we gather that in the year under notice the rate of mortality at each age period of both sexes was considerably lower than the average in the preceding decennium, except at ages above 65 for men and at ages above 85 for women.

*Saving of Life Expressed in Terms of "Life-Capital."*

Sir Shirley Murphy again draws attention to the fact, emphasised in several of his previous reports, that a more accurate estimate than the foregoing of the effect on the community of fluctuations in mortality can be obtained by the use of a life-table. The advantages of that method with the formulæ employed in its application are set forth in detail in the London life-table appended to the report for 1901. From instructions contained in that document it appears that in order to apply this method it is necessary in the first place to ascertain from the life table the mean future lifetime of males and females in groups of ages corresponding to the age groups in which the deaths appear. With the help of the life-table for 1891–1900 this has been done for the purposes of the present report, which contains a table showing the mean future lifetime, or expectation of life, of males and females respectively at several groups of ages. Incidentally we observe that in London the expectation of life at birth amounts to rather more than 50 years for males and to nearly 54 years for females. In a further table the number of deaths occurring in the year 1909 is compared with the number that would have occurred had the death-rates of 1891–1900 been maintained in 1909. The number of lives gained in the latter period is also shown, and this gain is expressed in terms of "life-capital," which is obtained by applying the mean future lifetime to the number of lives saved at each group of ages. From this table we learn that in the year 1909, compared with the decennium 1891–1900 there has been a saving of 24,902 lives, representing a gain to the community of 1,080,784 years of "life-capital."

*(To be continued.)*

## ROYAL SOCIETY OF MEDICINE.

A SPECIAL general meeting of Fellows of the Royal Society of Medicine was held at Steinway Hall, London, W., on Jan. 31st, when Sir HENRY MORRIS, the President, occupied the chair. The business before the meeting was the consideration of a communication from the council of the society to the Fellows in regard to the new premises of the society, to which it was proposed to add one storey.

A memorandum on the society's new premises signed by Sir Henry Morris pointed out that on Oct. 28th, 1910, the council of the Royal Society of Medicine entered into a contract with Messrs. Godson and Sons for the erection of a building of three storeys—i.e., ground-floor and first and second floors—at a cost of £27,286. This building included ample meeting room and sufficient library accommodation to last for many years—indeed, for as long as the present lease. The question of a third and a fourth floor was left undecided, but the council reserved the right to order an additional or third floor, according to the approved plans, and at a fixed price (£2051), and also the right at a later date to order another or fourth floor, according to plans approved, at a price fixed (viz., £2347)—that is, at a total cost of £4398 for the two additional floors. When the contract was signed the council did not feel justified in incurring more expense than was absolutely necessary for the immediate needs of the society. They hoped that before the limit of time fixed for the notice to be given for a third floor had arrived they might see their way to order an additional floor or floors, if thought advisable. A third floor would provide a more spacious common room for the use of Fellows, a room in which to conduct the examination of morbid growths and other specimens, a room for the use of the president and presidents of sections, a secretaries' room (including writing and conference conveniences for the sectional secretaries), and a Fellows' smoking-room. Some or all of these rooms would also, when required, provide additional storage for books. These rooms were all desirable for the full and satisfactory working of the society from the outset, and should be provided if possible. If the notice to erect the third floor was given on or before Feb. 7th the cost would be £2051. If the additional floor was not built now, and the Fellowship of the society increased and new sections were formed, it would certainly become necessary within a few years. The cost would then be at least £4000, and the building operations would necessitate the closing of the society's house for nine months or longer. The council were of opinion that the erection of the third floor was desirable, but they sought to ascertain the opinion of the Fellows before giving notice to the architect, as they must do, on or before Feb. 7th, if the work was to be carried out. The total cost of the building would then be under £30,000. The building fund at present stood at a total of between £10,000 and £11,000, made up as follows: Donations and subscriptions already received, £6725 16*s.*; donations and subscriptions promised, £2519 18*s.*; debentures surrendered, £1450. As only 678 Fellows and members had contributed to that amount, the council appealed to each of the remaining 2700 to help, by subscribing a sum of from 1 to 5 guineas annually for three or five years. In this way a large portion of the balance required might be provided before the building was finished. It should be remembered that before the amalgamation many Fellows belonged to several societies, and paid in annual subscriptions—few less than £5 5*s.*, many as much as £10 10*s.*, and even more. As these Fellows now obtained much greater advantages for a subscription of £3 3*s.*, it was hoped that they would make a special effort, in the manner suggested or in some other way, to bring up the building fund to the requisite amount.

Sir HENRY MORRIS said that the memorandum which had been circulated contained a full account of the whole matter. He particularly emphasised the fact that the proposal was a financially sound one, and went on to assure the Fellows that there was not the slightest intention of the new premises being used in any way as a club-house. On the contrary, the whole of the building would be used strictly and entirely for scientific purposes.

Sir THOMAS BARLOW, President of the Royal College of Physicians of London, then submitted a motion confirming the resolution of the council as to the desirability of building an additional storey, and he pointed out that in his opinion the plan commended itself as business-like and as dealing with the pressing needs of the society in a satisfactory manner. He was sure he expressed the sentiments of a large number of Fellows in stating his satisfaction at hearing that in the new building every part of it would be used for the needs of the society itself, and that the premises would not in any way constitute a club-house.

Mr. BUTLIN, President of the Royal College of Surgeons of England, in seconding the proposal, said that it would be absolutely ridiculous on the part of the society to hesitate to face the financial liability incurred in building the additional storey.

Mr. G. H. MAKINS and Dr. C. THEODORE WILLIAMS supported the motion, and Dr. W. HALE WHITE was instrumental in the secretary of the society demonstrating to the Fellows on a large plan the particular storey concerning which the motion was put forward.

After Sir WILLIAM CHURCH had explained, in reply to some remarks of Mr. L A. BIDWELL, that the necessity for establishing the present financial arrangements of the society was to be found in the need of financing the society on an annual subscription of 3 guineas from each Fellow, the resolution proposed by Sir Thomas Barlow was duly voted for and carried *nem. con.*

## PUBLIC HEALTH IN THE STRAITS SETTLEMENTS.

THE report on the medical department of the Straits Settlements for 1909 is somewhat late in its appearance; but this is not at all to be wondered at when we consider how extremely scattered is the collection of districts or provinces to which it refers. The principal medical officer, Dr. W. Gilmore Ellis, has his headquarters at Singapore, and presents his report in the form of a very short condensation of the various provincial reports, which are given *in extenso* in a series of appendices. The total population was estimated at 636,691, the birth-rate being 26·69, and the death-rate 37·58 per 1000; it is stated that the birth-rate has declined in all the settlements, also that the death-rate was the lowest since 1899. No comparative statistics are given relating to previous series of years; perhaps they are not available, owing to changes in the areas and populations of these provinces. The four "settlements" constituting the colony are, or rather were, at the beginning of 1909—(1) the island of Singapore; (2) the island of Penang; opposite which, on

the mainland of Malacca, are (3) Province Wellesley, and further south the district of the Dindings; further south again (4) Malacca, the largest of the settlements. The island of Labuan, off the north-west coast of Borneo, is also included in the administration of the colony.

*Vital Statistics.*

Of the zymotic diseases, cholera caused 76 deaths (out of 84 cases), all in Singapore; of plague there were but 5 cases (all fatal), also at Singapore; of small-pox, 62 cases and 11 deaths. Of enteric fever there were 235 cases and 89 deaths in Singapore, a smaller number than in either of the two years preceding; but it is stated that the figures cannot be relied on, as many cases are probably included under "fever unspecified." Beri-beri caused 873 deaths in Singapore, a markedly smaller number than in 1907 or 1908; in Malacca there were 219 deaths, and in Penang 399 deaths, neither of these figures showing much improvement. Phthisis prevails to a considerable extent, having caused 2659 deaths, a lower figure, however, than in the two years preceding. Dr. Ellis considers that this high mortality is likely to continue until some practical measures are put in force in the large towns to lessen overcrowding, improve ventilation, and remove advanced cases. Malaria is credited with 2589 deaths, of which 1670 occurred in Singapore; but it is admitted that the figures are quite unreliable. It is not possible to form any satisfactory opinion as to the condition and progress of the public health from the figures presented in this report, as mere numbers give no intelligible idea unless expressed as a ratio to the population. Perhaps the information is not available for any long series of years on account of the changes that have taken place in the areas and populations of these provinces. We do not understand, however, why no ratios are given for the older settlements, such as Singapore and Malacca, the populations of which are presumably known with some degree of accuracy. No information is given as to race or nationality in any of the returns, except those relating to lunatic asylums; this materially detracts from their interest.

The health statistics of the Singapore jail were satisfactory. No case of beri-beri originated in the prison; this in the third year in succession in which this immunity has occurred; the total death-rate was 28·3 per 1000. In the municipality generally the rate was 38·56, showing a considerable improvement on the mortality ratio for 1908, when it was 46·78. In Penang Island the chief causes of death were phthisis, malaria, fever, and beri-beri; 901 deaths occurred from phthisis, rather fewer than in 1908, when there were 917, but more than in any of the four years preceding; the highest mortality previously having been 674 in 1906; no explanation is given of this great increase within the last two years. Malaria also was less fatal (712 deaths) than in 1908, when there were 820 deaths, but more severe than in any of the four years preceding; no explanation is suggested for this. The next most fatal disease was fever of unspecified nature, accounting for 432 deaths; under this heading there has been a continuous improvement since 1904, when the mortality amounted to 1111; we suppose more cases have been returned as "malarial" in recent years. Some anti-malarial operations have been undertaken in the way of filling in ditches and low-lying areas of land, draining ponds, oiling ponds, and extending the drainage system. Two deaths occurred from small-pox: one was that of a European lady landed from Rangoon at the quarantine camp; she was suffering from hæmorrhagic small-pox in a malignant form, and bore no marks of vaccination. Dr. J. Kirk, reporting on the ophthalmic work at the Penang District Hospital, again alludes to the large number of cases of trachoma treated, 38 in all; he considers it to be responsible for 80 per cent. of the eye trouble and blindness which exist in the station. Mr. D. M. Ford was in charge of the leper asylum at Pulau Jerejak; the average number of inmates was 396, the largest ever recorded. Whether this was due to spread of the disease or increased stringency in sending patients to the asylum we are not informed; no explanation is offered of this, on the face of it, important fact, which would appear to be disquieting and worthy of notice. The health of Wellesley province is reported by Dr. W. S. Sheppard to have been fairly good in 1909; there was no serious epidemic. On some estates in the south, however, there has been a prevalence of dysentery greater than in former years. The food- and water-supplies have received attention, and the only cause Dr. Sheppard can suggest is adulterated toddy; it is frequently only the adult Tamils that suffer, while Javanese and Chinese escape. The death-rate for Malacca province was 41·46 per 1000, practically the same as the birth-rate, which was 41 03; in the previous year the death-rate was even higher, 47·88; of the deaths, more than half were due to fever, malarial or other; and 30 per cent. were in children under one year, 1036 being due to convulsions. The bulk of the population consists of Chinese and Malays. Beri-beri caused 52 deaths; it is stated that parboiled rice is now used in the various Government institutions. One fatal case occurred at a police depôt; the victim, a sub-inspector, had been warned against Siam rice, but refused to alter his diet.

*Various Matters.*

As regards general sanitation we are not afforded much information. The question of sewage disposal in Singapore is not yet finally settled; an expert from home was called in during the year, and his report is now under consideration. Of nine samples of water analysed from Singapore, one was found to be highly contaminated by sewage and five consisted "for the most part of oxidized sewage."

There is a Government medical school at Singapore, giving the full curriculum for the Licence in Medicine and Surgery, attended by 72 full course students, mostly Tamils and Chinese; the results of the examination were satisfactory, except in the subject of pharmacy, for which a new lectureship has now been established. Graceful acknowledgment is made to Major E. M. Pilcher, R.A.M.C., and Dr. G. A. Finlayson for their enthusiasm and thoroughness in teaching clinical surgery and medicine.

The meteorological statistics supplied are meagre, inasmuch as they do not give any information whatever as to the normal conditions, as deduced from a series of years; neither is anything said as to the localities where observations are taken. Singapore had a rainfall of 110 inches and a mean temperature of 82·4°; at Penang the rainfall was 130 inches and the mean temperature 81·7°. For Province Wellesley, that is presumably Georgetown, 220 inches of rain were registered, and a mean temperature of 83·3°. Malacca had a rainfall of 87 inches and a mean temperature of 81·3°. Labuan is out of the zone of high rainfall, and had only 9·5 inches, with a mean temperature of 83·4°.

The preparation of this report has entailed great labour, and we are appreciative of the large amount of information conveyed in small space. Some attempt at generalisation and advancing the boundaries of knowledge in regard to tropical pathology in these somewhat remote regions would have been welcomed. We are surprised that no mention is made of the large addition of territory that took place in the early part of the year to which this report refers; an area of some 15,000 square miles, with a population of about half a million, was transferred by Siam to the British Government, a circumstance, we should have thought, that would have given occasion for some action and report on the part of the public health authorities of the colony.

## ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Jan. 26th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College: John Hay Burgess, M.D. Lond., L.R.C.P. (Captain I.M.S.), Lancelot Stephen Topham Burrell, M.B. Cantab., L.R.C.P., Frank Clayton, M.B. Cantab., L.R.C.P., David McCay, M.B. Roy. Univ. Irel. (Captain I.M.S.), Bidhan Chandra Roy, M.D. Calcutta, L.R.C.P., and Ernest Edwin Waters, M.D. Edin. (Major I.M.S.).

Seventy-five gentlemen who had passed the requisite examinations were granted licences to practise medicine.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following:—Scott Campbell Adam, Claude John Eddowes Bennett, Harold Boulton (Major I.M.S.), Herbert Maughan Brown, Percy Norman Cave, Roderic Arthur Clapham, Alexander Dawson (Captain R.A.M.C.), Kali Charan Dube, John Henry Jones, Charlotte Alice King (under the Medical Act, 1876), James Fitz-Gerald Martin (Captain R.A.M.C.),

Lawrence Pick, Arthur Meurig Pryce, Thomas Edwin Pryce, Norman Emil Henry Scott (Captain I.M.S.), Sidney Francis St. Germain Steadman, Sidney John Steward, Charles Henry Straton (Captain R.A.M.C.), May Thomson (under the Medical Act, 1876), Sydney Arthur Tucker, and Charles Wilfred Vining.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, reporting proceedings of the Council of that College on Dec. 8th and Jan. 12th last. 2. From the Director-General of the Medical Department of the Navy, reporting that Sir Gilbert Blane's medals had been awarded to the following officers: Fleet-Surgeon G. T. Collingwood, M.V.O., and Fleet-Surgeon A. R. Bankart, M.V.O. 3. From the Assistant Secretary to the Marine Department, Board of Trade, inviting the College to nominate a representative on a committee for revising the scales of medicines, &c., for merchant ships. The President nominated Dr. N. I. C. Tirard. 4. From the Registrar-General, concerning the substitution of the International List of Causes of Death for the list hitherto in use at the General Register Office. 5. From Mr. Alfred Parsons, asking permission to have a reproduction made of the late Dr. J. F. Payne's portrait. The request was granted. 6. From Professor Osler, on behalf of Dr. Harvey Cushing, asking permission to have the portrait of Vesalius photographed. This request was also granted. 7. From the University of St. Andrews, inviting the College to send a delegate to the celebration of the 500th anniversary of the University in September next. The President was requested and consented to represent the College. 8. From the Royal Sanitary Institute, inviting the College to send a delegate to its Congress at Belfast in July next. The Right Hon. Lord Ilkeston was nominated. 9. From the British Medical Association, concerning diseases of the eye as a compulsory subject for the curriculum and examination. The matter was referred to the Committee of Management.

The PRESIDENT announced that he had nominated Dr. C. Theodore Williams as Harveian Orator, and Dr. Graham Steell as Bradshaw Lecturer for 1911; also, that the Council had appointed Dr. F. A. Bainbridge as Milroy Lecturer for 1912.

The Right Hon. Lord Ilkeston, Sir H. Bryan Donkin, Dr. R. Caton, and Dr. J. Phillips were elected councillors.

Sir Dyce Duckworth was re-elected a representative of the College on the council of Queen Victoria's Jubilee Institute for Nurses.

Sir Francis Champneys was appointed a representative on the Central Midwives Board for one year from April 1st next.

A report was received and adopted from the representative of the College on the General Medical Council on the proceedings of the Council during its session in November last.

After some further business, the PRESIDENT dissolved the Comitia.

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DONATIONS AND BEQUESTS.—The late Mrs. Sarah Jenkins, of Edgbaston, Birmingham, has among other bequests left by will £500 each to the Royal Orthopædic and Spinal Hospital, Birmingham, and the Birmingham and Midland Free Hospital for Sick Children; £350 to the Birmingham and Midland Skin and Urinary Hospital; £250 each to the Birmingham General Hospital, the Queen's Hospital, Birmingham, the Birmingham and Midland Hospital for Women, the Birmingham Lying-in Charity and Maternity Hospital, the Birmingham and Midland Counties Sanatorium, Blackwell, Worcestershire, and the Birmingham and Midland Eye Hospital; £200 each to the Birmingham Branch of the Royal Society for the Prevention of Cruelty to Animals, the Birmingham District Nursing Society, the Moseley Hill Convalescent Home for Children, near Birmingham, Dr. Barnardo's Homes (Birmingham Branch), and the Dental Hospital, Birmingham; and £150 each to the Birmingham Branch of the Royal Institution for the Instruction of Deaf and Dumb Children, and the General Institution for the Blind, Edgbaston.—The late Miss Hampson of Radcliffe has left £1000 to the Manchester Royal Infirmary, £1000 to the Bury Infirmary, £1000 to the Southport Infirmary, £1000 to the Pendlebury Hospital for Children, and £1000 to the Trustees of the Radcliffe and Whitefield Relief Fund for Consumptives, besides other charitable bequests.—The late Miss C. C. Williams of Falmouth has bequeathed £6000 to the Royal Cornwall Infirmary.

# Public Health.

## ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Report of the Health Officer of Calcutta for the Year 1909.*—Dr. T. F. Pearse, health officer to the corporation and special health officer for plague, Calcutta, in his report for 1909 follows his usual mode of procedure, noticing in detail the meteorological data, the vital statistics, and the special diseases occurring during the year. He gives an interesting account of an outbreak of beri-beri or epidemic dropsy. It is now our pleasure to review the interesting facts he has collected. Dr. Pearse in his report for 1908 drew attention to the fact that the climate was on the whole cooler and drier than usual, the lessened humidity being a special feature. Concurrently with these meteorological conditions the year was an exceptionally healthy one, the estimated mortality being lower than for ten years previously. But in 1909 the meteorological conditions were different. The earlier part of the year was hotter and drier than usual, and the rainfall exceptionally small, but during the second quarter the humidity and rainfall were in excess. During the latter part of the year the humidity was of about the average, so that generally the humidity was distinctly higher and the atmospheric conditions not so favourable. The health officer points out that the vital statistics are entirely dependent upon the accuracy of the registration of deaths and upon the corrections made after inquiry into the cause of deaths as given at the several burning ghats and burial grounds. That these corrections are important is shown by the experience that nearly 50 per cent. corrections have to be made in the returns as given by the latter. Inasmuch as the causes of deaths are dependent upon the haphazard opinion of the individuals who happen to register each death, Dr. Pearse very rightly protests against any attempt to reduce his present small staff, as such reduction would inevitably be followed by a vitiation of the statistics which would render them practically worthless. He does not hesitate to say that the mortality returns before the year 1903 are of little value. The total number of deaths during 1909 was higher than in the previous year, but the increase was chiefly due to the larger mortality for small-pox, plague, and epidemic dropsy. Excluding these, the general mortality was in fact lower. The "crude" rate, moreover, is not really the correct one, since no allowance was made for the increase of population as regards the excess of males, of young adults, and the comparative paucity of children. The death-rate may in reality be taken as 28·7 per 1000, and is only slightly higher than in 1908. It compares favourably with that of Bombay, 35·5 per 1000. There was an excess of deaths amongst the females in every part of the city, in every district as well as in every ward. Bowel complaints gave a marked improvement, due no doubt to the recent drainage operations. These latter diseases were nearly double in the suburbs compared with the city. Malaria gave a lower mortality during the wet season. The cholera death-rate was 2·3 per 1000; that for small-pox 4·4 per 1000. This disease showed a severe outbreak in the spring of 1909; the severity is shown by the contrast with the mortality rate of the previous five years—viz., 1·2 per 1000. Vaccination was consequently performed to a much greater extent, 88,306 operations having been performed. An extremely interesting section of the report deals with an outbreak of beri-beri or epidemic dropsy. Dr. Pearse, as is well known, has strongly advocated the identity of these two diseases, and has adduced potent arguments in favour of his theory. In the account of the epidemic he details the symptoms, and draws attention amongst other points to the mode by which death is brought about—namely, by nervous disturbance of the heart's action. He also ably discusses the question as to the identity or non-identity of the two affections, and finally considers its causation, whether it be caused by some adulterant or poison contained in the food, or whether it is an acute specific communicable disease. His own opinion favours the latter supposition. With respect to malaria, the Calcutta corporation sanctioned the appointment of ten mosquito brigades for six months. Work was started with these on Oct. 1st. A large amount of work was effected with regard to the bacteriological examination of the Hoogli river water, of the filtered water-supply, and the analysis of foodstuffs. Many other points are mentioned in this

valuable report which space only forbids us to relate. It concludes with tabulated statements relative to the climate of Calcutta, death statistics, and deaths from various diseases. Dr. Pearse has produced as usual a most valuable exposition of the matters connected with his department.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 8232 births and 5310 deaths were registered during the week ending Jan. 28th. The annual rate of mortality in these towns, which had been equal to 14·3, 15·5, and 16·4 per 1000 in the three preceding weeks, declined to 16·1 in the week under notice. During the first four weeks of the current quarter the recorded death-rate in these towns averaged 15·6 per 1000. In London the mean death-rate during the same period was equal to 15·7 per 1000. The annual death-rates in the 77 towns during last week ranged from 6·8 in Hastings, 7·4 in East Ham, 8·4 in Handsworth, and 8·5 in Walthamstow and in Burton-on-Trent. The 5310 deaths from all causes in the 77 towns last week showed a decline of 101 from the number returned in the previous week, and included 461 which were referred to the principal epidemic diseases, against 392, 448, and 455 in the three preceding weeks; of these 461 deaths from epidemic diseases, 208 resulted from measles, 113 from whooping-cough, 58 (of infants under two years of age) from diarrhœa, 48 from diphtheria, 17 from enteric fever, and 17 from scarlet fever, but not one from small-pox. The fatal cases of measles, which had increased in the three preceding weeks from 160 to 204, further rose last week to 208, and caused the highest annual rates, 1·9 in Coventry, 2·6 in Bury, 2·8 in Grimsby, 2·9 in Sheffield, and 4·6 in Rotherham. The 113 deaths from whooping-cough also showed a further increase upon recent weekly numbers; the highest rates from this disease last week were 1·6 in Croydon, and 2·1 both in Norwich and in Warrington. The deaths of infants under two years of age attributed to diarrhœa and enteritis, which had been 56 and 68 in the two previous weeks, declined again last week to 58. The fatal cases of diphtheria, which had been 63 in each of the two previous weeks, declined last week to 48, of which 12 occurred in London and its suburban districts, 6 in Liverpool, 3 in Manchester and Salford, and 3 in Leeds. The 17 deaths referred to enteric fever exceeded the number in the previous week by 2; 5 were recorded in London, 3 in Manchester, and 3 in Bradford. The fatal cases of scarlet fever, which had been 31 and 20 in the two preceding weeks, further declined to 17 last week; 3 occurred both in London and in Liverpool, and 2 each in Portsmouth and in Cardiff. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the 11 preceding weeks from 1882 to 1349, had further fallen to 1311 on Saturday last; 129 new cases of this disease were admitted to these hospitals during last week, against 154, 135, and 126 in the three preceding weeks. These hospitals also contained on Saturday last 891 cases of diphtheria, 310 of measles, 127 of whooping-cough, and 69 of enteric fever. The 1538 deaths from all causes in London last week (showing a decline of 75 from the number in the previous week) included 374 which were referred to diseases of the respiratory system, against numbers increasing in the four preceding weeks from 263 to 366. In the 77 towns 159 deaths resulted from different forms of violence, against 180 and 169 in the two previous weeks; and 427 inquest cases were registered. The causes of 41, or 0·8 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and in each of its eight suburban districts, in Manchester, Leeds, Bristol, Bradford, Hull, Nottingham, Leicester, and in 40 smaller towns; the 41 uncertified causes of death in the 77 towns last week included 6 in Liverpool, 4 in Stoke-on-Trent, and 3 each in Sheffield, Birmingham, and St. Helens.

## HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 889 births and 576 deaths were registered during the week ending Jan. 28th. The annual rate of mortality in these towns, which had been equal to 16·6 and 14·8 per 1000 in the two preceding weeks, rose again to 15·7 in the week under notice. During the first four weeks of the current quarter the death-rate in these towns averaged 15·4 per 1000, and was 0·2 below the mean rate during the same period in the 77 English towns. The annual death-rates during last week in the eight Scotch towns ranged from 11·1 and 11·3 in Perth and Aberdeen, to 18·4 in Leith and 19·0 in Greenock. The 576 deaths from all causes in the eight towns last week showed an increase of 32 on the number returned in the previous week, and included 46 which were referred to the principal epidemic diseases, against 56, 51, and 43 in the three preceding weeks; these 46 deaths were equal to an annual rate of 1·3 per 1000, the highest epidemic rates being 3·3 in Paisley and 4·8 in Leith. Of these 46 deaths from the principal epidemic diseases, 14 resulted from whooping-cough, 14 from diarrhœa, 8 from diphtheria, 6 from scarlet fever, 3 from enteric fever, and 1 from measles, but not one from small-pox. The fatal cases of whooping-cough, which had been 18 and 20 in the two previous weeks, declined to 14 last week, of which 5 occurred in Glasgow, 3 in Dundee and in Leith, and 2 in Paisley. The 14 deaths attributed to diarrhœa (of which 10 were of infants under two years of age) exceeded by one the number in each of the two previous weeks. The deaths from diphtheria, which had been 14, 9, and 6 in the three preceding weeks, rose again to 8 last week, including 2 each in Glasgow, Paisley, and Leith. The 6 fatal cases of scarlet fever exceeded the number in the previous week by 4, and included 4 in Glasgow. Of the 3 deaths referred to enteric fever, 2 were returned in Glasgow and 1 in Paisley. The fatal case of measles occurred in Edinburgh. The deaths in the eight towns referred to diseases of the respiratory system, which had been 98, 130, and 121 in the three preceding weeks, further declined last week to 117, and were 6 below the number returned in the corresponding week of last year. The deaths resulting from different forms of violence in the eight towns, which had been 26 and 15 in the two previous weeks, increased again to 20 last week; and 190, or 33 per cent., of the deaths occurred in public institutions. The causes of 21, or 3·6 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

## HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596, 597 births and 476 deaths were registered during the week ending Jan. 28th. The annual rate of mortality in these towns, which had been equal to 19·9 and 19·3 per 1000 in the two preceding weeks, rose to 21·3 in the week under notice. During the first four weeks of the current quarter the annual death-rate in the city averaged 20·0 per 1000, whereas in the 77 largest English towns during the same period the death-rate did not exceed 15·6, and in the eight principal Scotch towns the rate was 15·4 per 1000. The annual death-rate last week was equal to 27·5 in Dublin, 15·4 in Belfast, 25·3 in Cork, 22·6 in Londonderry, 20·5 in Limerick, and 11·7 in Waterford; in the 16 smallest of the Irish town districts the annual death-rate last week averaged 20·4 per 1000. The 476 deaths from all causes in the 26 towns last week showed an increase of 46 upon the number returned in the previous week, and included 25 which were referred to the principal epidemic diseases, corresponding with the number in the previous week; these 25 deaths were equal to an annual rate of 1·3 per 1000, corresponding with the rate from the same diseases in the principal Scotch towns. Of these 25 deaths from the principal epidemic diseases, 18 resulted from whooping-cough, 3 from diphtheria, 2 from enteric fever, and 1 each from measles and scarlet fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 8, 9, and 11 in the three preceding weeks, further rose to 18 last week, of which 10 occurred in Dublin, 4 in Cork, 2 in Londonderry, and 1 each in Belfast and in Newtownards. Of the 3 fatal cases of diphtheria, a decline of 4 from the number in the previous week, 2 occurred in Belfast and 1 in Dublin. Both the deaths from enteric fever and the fatal case each of measles and scarlet fever were also

returned in Dublin. The deaths in the 26 towns referred to diseases of the respiratory system, which had been 96 and 105 in the two preceding weeks, further rose to 113 in the week under notice. The 476 deaths from all causes last week included 149, or 31 per cent., which occurred in public institutions. The causes of 23, or 4·9 per cent., of the deaths in the 26 towns last week were not certified either by a registered medical practitioner or by a coroner; the proportion of uncertified causes last week did not exceed 0·8 per cent. in the 77 English towns, and was equal to 3·6 per cent. in the principal Scotch towns.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Deputy Inspector-General G. Welch to the *President*, for special service at Admiralty, reappointed, temporarily, on promotion. Staff-Surgeon: F. R. Mann to the *Terpsichore*, temporarily.

### ROYAL ARMY MEDICAL CORPS.

Colonel T. J. O'Donnell, D.S.O., principal medical officer at Aden, has taken over duty as Principal Medical Officer of the First (Peshawar) Division. Colonel T. P. Woodhouse, Principal Medical Officer of the Scottish Command, has been granted two months' leave of absence with permission to travel in France and Switzerland. The following officers have been appointed Senior Medical Officers of the Coast Defences, as noted against their names: Lieutenant-Colonel R. P. Bond, Eastern; Lieutenant-Colonel G. Wilson, South-Eastern; Lieutenant-Colonel R. R. H. Moore, North Irish; Lieutenant-Colonel T. E. Noding, South-Irish; Lieutenant-Colonel H. M. Adamson, North-Eastern; Lieutenant-Colonel F. S. Heuston, C.M.G., Scottish; Lieutenant-Colonel R. E. R. Morse, Southern; Lieutenant-Colonel R. Kirkpatrick, C.M.G., South-Western; Lieutenant-Colonel A. Dodd, North-Western; and Lieutenant-Colonel P. C. H. Gordon, Western. Lieutenant-Colonel E. J. E. Risk, late administrative medical officer at Belfast, has taken over duties as Commandant and Director of Studies at the Royal Army Medical College, Millbank, in succession to Colonel D. Wardrop, C.V.O. Lieutenant-Colonel H. P. G. Elkington, from Queenstown, has been transferred to the Southern Command. Lieutenant-Colonel J. Maher, from Wynberg, has taken over charge of Queen Alexandra's Military Hospital, Grosvenor-road. Major F. J. W. Porter, D.S.O., from the recruiting staff of the London District, has been transferred to the Southern Command. Major C. R. Elliott, sanitary officer of the Third (Lahore) Division, has been granted eight months combined leave in India from Feb. 1st. Major S. de C. O'Grady has been transferred from Cairo to Khartoum. Major F. Ashe, from Colchester, has taken up duty as Specialist in Midwifery and Diseases of Women and Children to the Ninth (Secunderabad) Division. Major G. E. F. Stammers, from Tidworth, has arrived for a tour of service in India. Major H. J. M. Buist, D.S.O., has joined for duty at Pretoria. Major C. J. Gorman, D.S.O., has been appointed to the temporary command of the station hospital at Peshawar. Captain A. A. Sutcliffe, on arrival home from Straits Settlements, has been posted for duty to Alderney. Captain W. R. P. Goodwin, Captain H. E. J. A. Howley, Captain C. H. Furnivall, and Captain G. F. Rugg have arrived in India. Captain J. W. West, from Dublin, has been appointed Specialist in Advanced Operative Surgery to the Second (Rawalpindi) Division. Captain W. M. B. Sparkes has taken over duty as medical officer in charge of the staff and departments at Beggars Bush Barracks, Dublin, in succession to Major E. G. Browne, who has embarked for India. Major H. L. W. Norrington, from Chatham, has been detailed to embark for Malta in the transport ss. *Soudan* on Feb. 25th. Captain T. W. Browne has been granted six months' leave of absence from India. Captain J. Fairbairn, from Glasgow, has been detailed for a tour of service on the West Coast of Africa (Sierra Leone), embarking about the middle of February. Captain A. Dawson and Captain T. W. O. Sexton have arrived home on leave. Lieutenant J. D. Bowie has taken up duty in the Aldershot Command. Lieutenant H. H. Leeson, from Woolwich, has joined at Cairo.

### INDIAN MEDICAL SERVICE.

Colonel G. W. P. Dennys, on return to India from leave, has been appointed Principal Medical Officer of the Bannu and Derajat Brigades, in succession to Brevet-Colonel J. S. Shearer, C.B., D.S.O., retired. Lieutenant-Colonel A. Buchanan, civil surgeon of Amraoti, has been appointed to officiate as Inspector-General of Civil Hospitals in the Central Provinces, in succession to the late Colonel J. A. Cunningham. Lieutenant-Colonel J. T. Calvert has been appointed to officiate as Principal of the Medical College at Calcutta during the absence on deputation of Lieutenant-Colonel F. J. Drury at Lucknow. Major R. H. Price has been appointed Specialist in Midwifery and Diseases of Women and Children to the Fourth (Quetta) Division. Major F. D. Browne, medical officer of the 112th Infantry, has been appointed to the Medical Charge of the 30th Mountain Battery and the Frontier Garrison Artillery at Kohat. Major W. H. Kendrick, civil surgeon of Nimar, has been placed on special duty under the orders of the Sanitary Commissioner of the Central Provinces. Captain A. W. Overbeck-Wright has been appointed Supernumerary Superintendent of the Agra Central Prison. Captain D. N. Anderson has received an extension of six months' leave of absence from India on medical certificate. Captain G. E. Malcolmson has been appointed to the charge of the Brigade Research Laboratory at Nowshera. Captain C. Shaw has been posted for duty in Burma. The services of Captain R. A. Chambers have been placed at the disposal of the Commander-in-Chief by the Government of India. Captain E. T. Harris has been granted furlough for one year home from India. Captain C. H. Cross has been appointed to officiate as Medical Officer in Charge of the 38th Dogras and to the Medical Charge of the 23rd Mountain Battery. Lieutenant W. D. Keyworth has taken over charge as Specialist in Midwifery and Diseases of Women and Children to the Sixth (Poona) Division, India.

### TERRITORIAL FORCE.

*Army Medical Service.*

Lieutenant-Colonel and Honorary Surgeon-Colonel John Arnallt Jones, from the Sanitary Service, Royal Army Medical Corps (T.), to be Colonel, on appointment as an Administrative Medical Officer of a Territorial Division (dated Jan. 18th, 1911).

*Royal Army Medical Corps.*

*For attachment to Units other than Medical Units.*— Frederick William Price to be Lieutenant (dated Sept. 28th, 1910). Frederick Andrew Worsley Drinkwater to be Lieutenant (dated Dec. 1st, 1910).

### DEATHS IN THE SERVICES.

Brigade Surgeon Lieutenant-Colonel David Renton, A.M.S., of the 15th Hussars (retired), on Jan. 23rd, at his residence in Edinburgh, in his seventy-fourth year. He entered the service in 1864 as assistant surgeon, became surgeon in 1873, surgeon-major in 1876, and retired in 1884. After serving five years in India he took part in the Zulu War in 1879 (medal).

### INDIAN MEDICAL SERVICE EXAMINATION.

The following are the names of the successful candidates, arranged in order of merit, at the recent competition for commissions in the Indian Medical Service, which was held at the Royal Army Medical College and at the Examination Hall, Victoria Embankment, on Jan. 23rd, 24th, 25th, 26th, 27th, and 28th:—

| | Marks. |
|---|---|
| John Scott, M.B., Ch.B.Edin. | 3691 |
| Alister Ralph Speirs Alexander, M.B., B.S.Lond. | 3502 |
| Frederick William Hay, M.B., Ch.B.Edin. | 3362 |
| Indarjit Singh, M.B., B.C.Cantab. | 3357 |
| Sidney Milverton Hepworth, M.B., Ch.B.Leeds | 3284 |
| Harry Slater Cormack, M.B., Ch.B.Edin. | 3240 |
| George Tate, L.M.S.S.A. | 3203 |
| George Selby Brock, M.B., Ch.B.Edin. | |
| Edward Slade Goss, M.R.C.S., L.R.C.P. | 3118 |
| John Frederick Henry Morgan, M.R.C.S., L.R.C.P. | 3111 |
| Krishnan Gopinath Pandalai, M.R.C.S., L.R.C.P., M.B. Madras | 3105 |
| Jyoti Lal Sen, M.B. Calcutta | 3035 |
| Charles Albert Wood, M.B., B.S.Lond., M.R.C.S., L.R.C.P. | 3012 |
| Percival Sandys Connellan, M.R.C.S., L.R.C.P. | 2914 |

### THE OFFICERS TRAINING CORPS.

The Army Council has sanctioned the formation of a second section of a field ambulance to be added to the medical unit of the Dublin University contingent of the Officers Training Corps. It may be mentioned that owing to the rapid

development of the Trinity College contingent the formation of an additional infantry company was recently approved by the War Office. Considerable satisfaction is felt in higher military circles in regard to the progress made by this contingent of the Officers Training Corps.

### THE HEALTH OF THE FRENCH ARMY.

The Paris correspondent of the *Times*, in a letter published in that journal on Jan. 28th, states that the report on the health of the French army for 1909 compares somewhat unfavourably with the corresponding report for the British army. The report shows that since 1902 there has been a steady increase of sickness among the troops, and that the maximum figure was reached in 1908. The effective strength of the French army for 1910 is 27,995 officers and 552,959 men. The proportion of men classed as "constantly sick" tends to increase. The "figures are regarded as a striking argument in favour of calling up for service only the most able-bodied elements among the population."

# Correspondence.

**"Audi alteram partem."**

## GIRLS' SCHOOLS, GAMES, AND NEURASTHENIA.

*To the Editor of* THE LANCET.

SIR,—I want to enlist your sympathy towards an aspect of the prevention of "nerves" which, I am sorry to know, is gaining ground among our best girls. It goes without saying that the greatest of all national questions is the training of the mind and body of the young through instruction and exercise, so that the work in the school may create a general state of "healthy-mindedness" for later life, and thus fit the child in the best manner possible for the domestic, social, and economic conditions of its subsequent career.

We all appreciate the fact that it is the essence of education to promote the development of moral character and to use the facts of human knowledge during school life, so that school experience may not only conduce to an ethical upbuilding, but that the growing mind may also accommodate itself to the intellectual and social requirements of the particular group to which the child belongs. My purpose is not to dispute the views of the schoolman or schoolwoman as to the disciplinary advantage of the humanities and Greek (admittedly for the *élite* of schoolboys only) in school education, or to discuss the value of linguistic teaching for the requirements of modern life and thought. This has already engaged the lay press during the period of head masters' and mistresses' congresses, but as a student of psychology and of morbid mental states I have another and a more serious quarrel with the educationists of to-day, and I think high medical opinion is with me. Mainly my quarrel is with those who have the care and education of our girls, and whilst acknowledging that broadly speaking the materials of instruction for both sexes are of two kinds—viz., those which, owing to their uncertainty and want of exactness (history and literature) demand the exercise of caution and judgment in comparing probabilities, and those others (mathematics and the natural sciences) which deal with what is precise and certain—thus producing a more exact and definite exercise of the reasoning powers; it is not this "knowledge-material" which I call into question, but the method of imparting it to the growing individual by a practically continuous time table at school which now covers every available hour of the day.

The human being is an organism with many-sided facets and capable of reacting to diverse stimuli. Healthy-minded boys and girls are strongly predisposed to react to these stimuli, but there must be a period of rest for reconstruction—katabolism must alternate with anabolism. Young people find a pleasure in exercising their bodily and mental functions, and the joy of activity excites curiosity, which enlarges the mental outlook, adds vividness and gives fulness and colour to the mental content. Such a fundamental response to stimulus necessitates for the pupil a period of repose wherein to reconstruct and analyse the knowledge it possesses. But where is the opportunity in the scheduled hourly time-table of the modern girls' school to reflect upon and to assimilate the knowledge she herself possesses? There should be an opportunity afforded and encouragement given for rest and introspection or to converse about general matters, but the moment class work is over the public and high school girl is driven compulsorily to the playing fields to practise games which do not in themselves sufficiently supply a training for all the muscles of the body, and this undue, indeed *wicked*, devotion to pointless athleticism produces "gregariousness" rather than self-reliance. The violent games, such as hockey and football, cricket, and even golf, especially when carried to such an excess, are responsible for the "insurgency" of the modern girl against domestic responsibilities and the common duties of life; moreover, they tend to make the body a motor machine rather than the expression of a healthy and refined mind.

I know there is a widespread and increasing discontent on the part of thoughtful parents with the modern system of the absolute separation of games and class-work. I maintain, as an alienist having some experience of the failures of the schoolmaster and schoolmistress, that the great drawback of the teaching of to-day is the revival of the mediæval belief in the separability of mind and body, which is responsible for the bifurcation of educational aims and the consequent direction of educational methods towards the physical development of the body on the one hand and towards mental forcing on the other, there being no attempt made to establish a proper coördination of the different branches of "knowledge-material." This practice is due to the failure of academical teachers of pedagogy to contemplate the boy or girl from the proper biological standpoint. The keynote of education, on this conception, from the nursery onwards, is "knowing through doing"; each movement of the body is associated with a mental state, and exercise should be an adjunct to the cultivation of the mind, not an end in itself.

If the present mental lukewarmness of girls towards the principles of housekeeping, the care of infants, the true instincts of motherhood, and civic duties is to be changed, the wild cult of athleticism by girls and the congested and continuous time-table prepared for them without a moment's spare time from bed-rising to bed-retiring must be abandoned or extensively modified. It is a fact that excessive devotion to games is the cause of much of the mental restlessness, the frantic rush towards "What shall we do next?" the discontent and the inaptitude for work in many girls, who, formerly afraid of nothing, now return from school to their homes not as the finished article, but mentally numb and cold from a lack of resourcefulness and self-confidence. Such states of mind and body carve the way for the worst type of "nerves" or neurasthenia, and they create in addition those morphological characters described as the "cricket stoop," the "hockey walk," and the "golf stride," or the "football roll"!

I need only quote the following from the *Times* of Jan. 3rd: "There is probably no game which affords a greater scope than golf for all possible forms of nervousness, not only for sheer terror, but for every conceivable foolish fancy which can impair the properly concentrated frame of mind," and *a fortiori* this is true of the more intense and energetic games. The bodily changes referred to above are caused by an environment of undue athleticism, and they imply a change also in mental characters, so that the gentleness, the æsthetic beauty, and the refinement of our home-life are doomed to disappear unless this "curse" is modified, and I feel that their warning sign that something is wrong comes none too soon!

I am, Sir, yours faithfully,

Claybury, Jan. 23rd, 1911. ROBERT JONES, M.D. Lond.

## NODULAR FIBROMYOSITIS.

*To the Editor of* THE LANCET.

SIR,—I should like to corroborate and accentuate all that has been said regarding this malady in the excellent and helpful article by Dr. Telling in your issue of Jan. 21st. Writing solely from the position of an ordinary practitioner, I can positively assert that it will well repay any one in practice to make a study of this condition and a systematic search for these nodules in all cases of muscular pains. The disease is not sufficiently well recognised. For example, Dr. Telling himself, evidently now an enthusiast and an authority, says

in his contribution that "some years ago he was sceptical of the existence of these nodules."

In my own case, although some years in practice, I was unaware of the real nature of this complaint, and certainly of its extent, until it was pointed out to me by Dr. John Macintyre, the well-known throat specialist. Since I have been indebted to him for an understanding of the disease and its recognition, I have been able to clear up with remarkable ease many obstinate cases of lumbago, myalgia, and muscular pains generally.

One can hardly hope to add anything of value to the striking cases illustrating Dr. Telling's paper, but a hint of what one finds in everyday work may be useful to anyone looking into this condition for the first time.

One of my first cases was a perfectly helpless policeman who had to be carried from one room to another, the action of the muscles in the gluteal region being quite lost. He had taken, *ad nauseam*, aspirin, pot. iodid., and alkalies, had suffered blisters, leeches, and turpentine fomentations without any benefit, and was supposed to be suffering from chronic double sciatica. When laid on his abdomen on a couch, the arms dependent, and the erector spinæ well-oiled, these muscles were studded with numerous nodules. All around the origin of the gluteus maximus, at the crest of the ilium and extending down to the sacrum nodules were easily felt and were exceedingly painful. Owing to the patient wasting, the integument was loose and freely moveable over the muscle, and the nodules gave the sensation to the hand of running over peas. This case made an excellent recovery at the hands of a football-trainer, to whom the nature of the complaint and directions for using the thumbs were explained, which shows that those unable to obtain trained massage may do well without. Possibly, however, if not in expert hands they are not really cured, but the relief from pain and the returning power are remarkable. In coachmen and vanmen I have found nodules, and they have invariably been the origin of some severe and commanding pain, and I have never failed to find the pain disappearing permanently after treating these nodules by massage with the thumbs.

In conclusion, it is distinctly noticeable that these sufferers from nodular fibromyositis are generally people who have not had an actual rheumatic illness; they are often highly strung people and generally fairly active. Such articles as Dr. Telling's make a welcome appearance in the pages of THE LANCET because the subject is of genuine interest and much help to the general practitioner.

I am, Sir, yours faithfully,
HARRY M. ROBERTS, L.R.C.P. & S. Edin.,
L.R.F.P.S. GLASG.

Stevenston, Ayrshire, Jan. 27th, 1911.

*To the Editor of* THE LANCET.

SIR,—In his very instructive paper on "Nodular" Fibromyositis, an Everyday Affection, and its Identity with so-called Chronic Muscular Rheumatism, in your issue of Jan. 21st, Dr. Maxwell Telling has done good service in drawing attention to a clinical entity which, as he rightly points out, has received too little attention in English medical literature. He is, however, hardly correct in assuming that no adequate description of this condition exists apart from what is contained in the admirable paper published by Dr. Stockman in 1904. If Dr. Telling will refer to the article on Chronic Rheumatism in the "Encyclopædia Medica," Vol. X., 1902, he will find there a very full presentation of the subject along lines which are in all essential respects identical with those set forth by him in his very instructive paper.

I am, Sir, yours faithfully,
Edinburgh, Jan. 22nd, 1911. CHALMERS WATSON.

## THE ANTISEPTIC OR ASEPTIC METHODS.

*To the Editor of* THE LANCET.

SIR,—I read with interest the papers which appeared in THE LANCET of Nov. 27th, 1909, and Jan. 1st, 1910, and the correspondence which followed on the results obtained by the antiseptic or aseptic methods of wound treatment. The percentage of sepsis after operation in clean cases by either method as quoted in these papers did not appear to be as good as might have been expected, and I thought that they would not compare very favourably with the results which are obtained in the Dublin hospitals. However, as I had no statistics ready to hand I was unable to be certain on this point. In order to be able to make some comparison I have had very careful records kept at the Royal City of Dublin Hospital of all the clean cases operated on by me during the last 12 months. Dividing the cases into classes, as in the St. George's Hospital statistics, the numbers come out as follows:—

| — | Cases. | Infected. | Percentage of infection. |
|---|---|---|---|
| Radical cure of hernia ... ... ... ... | 8 | 1 | 12·5 |
| Excision of breast ... ... ... ... ... | 9 | 0 | *Nil.* |
| Operations on the thyroid ... ... ... | 3 | 0 | ,, |
| Operations on the male genital organs | 7 | 0 | ,, |
| Operations for appendicitis ... ... ... | 11 | 0 | ,, |
| Miscellaneous ... ... ... ... ... ... | 65 | 1 | 1·5 |
| Totals ... ... ... ... ... ... ... | 103 | 2 | 2 |

The miscellaneous cases include operations on bones, excision of joints, laparotomies, operations on tuberculous and malignant glands, spina bifida, brachial anastomosis, amputations, excision of varicose veins, &c. In both the cases that became septic the anæsthetic was badly taken, and it was impossible to prevent the risk of soiling the wound. In the first, a boy operated on for inguinal hernia, chloroform was the anæsthetic used, and the patient stopped breathing and artificial respiration had to be performed for several minutes; though this caused a complete disturbance of the operative field there was only a slight skin infection, and the patient was discharged from the hospital healed in three weeks. In the second case the patient, a man, had a large hæmatoma and ossifying myositis in the upper part of the thigh; he took the ether very badly, and was constantly struggling during the operation, which was a long one, and though the towels surrounding the field of operation were frequently disturbed there was only a superficial infection of one end of the wound, which healed within a fortnight. So although at first sight the percentage of sepsis (about 2 per cent.) seems high, it might be considered that it would have been justifiable to omit these two cases, when the percentage of sepsis would have been *nil*. This is, of course, a very small number of cases from which to draw any conclusions, but they form a consecutive series of operations performed during one year by one surgeon under the ordinary conditions of a general clinical hospital with frequently changing residents.

These operations were performed by the aseptic method, no chemicals being used except in the disinfection of the patient's skin and the hands of the operator and assistants. All those partaking in the operation wore caps but not masks, the sister and assistants wore gloves; but as a rule I do not wear gloves myself, being satisfied with the results of the use of Harrington's solution for the sterilisation of my hands, as described by me in the *Practitioner* for February, 1906. Finally, the test of whether the case healed aseptically or not was the absence or presence of a single drop of pus.

I am, Sir, yours faithfully,
Dublin, Jan. 14th, 1911. R. ATKINSON STONEY.

## THE EXPERIENCES OF DEAFNESS.

*To the Editor of* THE LANCET.

SIR,—The enclosed letter, from a patient whose operation has already been published by me in THE LANCET, is so interesting that I think it may be appreciated by your readers, especially when considered in conjunction with the care of the ear in children. It is addressed to yourselves.

I am, Sir, yours faithfully,
Jan. 24th, 1911. MACLEOD YEARSLEY, F.R.C.S. Eng.

[ENCLOSURE.]

*To the Editor of* THE LANCET.

SIR,—It has been suggested to me by more than one medical man that I should record the experience of being completely deaf. In my case the loss of hearing was gradual, accompanied for a long time by most severe attacks of vertigo, amounting at last to fits, and cured only by an aural operation. [Cf. THE LANCET, Sept. 19th, 1908, June 19th, 1909.]

I have now been quite deaf for about two years. What is the sensation? There is a sense of blankness. I feel always in a condition of expecting to hear, yet never realising the expectation. I cannot describe it in any other way. I have often observed that deaf people have a surprised look about them, as though they were wondering why they cannot hear, and sometimes I wonder if I am getting the same look, for it is not becoming. Then, together with this sense of blankness is the ever-present sense of loss. This at times is overwhelming. I cannot now remain in a room where music is being performed, as the fact that I cannot hear it and never shall is too much for me. For the same reason my duties as a clergyman have become a real and heavy burden, and most of the joy I once had in them has gone. This doubtless is the cause of the depression common to most deaf people, whereas the blind who possess the faculty of hearing are usually cheerful.

But the loss of hearing is undoubtedly felt more from its social side. Neither lip reading nor sign language can compensate for the loss of the human voice. We cannot join freely in the conversation of the family circle; and the funny story ceases to be really humorous when interpreted by signs. Rightly or wrongly, this encourages the tendency to withdraw from society and social life. You cannot hear, it is most difficult to join in the conversation, it seems only waste of time to remain, and the time one feels would be better spent in reading or writing.

One of the most distressing results of this total deafness is, to me at least, the horror of the awful silence in the dark, and I should like to know how far this is the experience of others similarly situated. Some time ago I was frequently out alone in my rural parish on very dark nights, but the scares I endured by blundering against people I could not hear approaching or whom I overtook completely unnerved me. But now it is torture to lie awake alone in the dark—not so much from any actual fear as from the sense of helplessness and insecurity; one feels in consequence the risk of being surprised by, perhaps, a cat jumping on the bed, or someone coming into the room without a light, and so forth.

In connexion with this is now the inability to walk in the dark at all. I cannot venture even to walk across a room in the dark as there always seems a tendency to fall forward, which has in fact actually happened on several occasions. The last time I attempted to walk in the garden at night I fell down, and on getting up fell down again, and only got indoors by feeling my way along the wall like a blind man.

I find I am by degrees losing the memory of certain sounds, which since memory cannot now be assisted by external aid it is impossible to recover. Certain musical airs, &c., once well known but now forgotten, I cannot possibly recall, while new sounds and new voices I cannot even realise—e.g., I can realise my wife's voice but not the voices of my children, whose adult voices I have never heard. Also, strange to say, I cannot now even imagine the sounds of some musical instruments, notably the church organ, and also certain outdoor sounds, bird notes, &c., I have completely forgotten. Being quite unable to hear my own voice, I have lost all control over it, and am told it has greatly altered since my deafness increased, running up sometimes into a falsetto and sometimes being scarcely audible. In church it is most puzzling to know if I am anywhere within the right pitch. I still enjoy the theatre, and find it most fascinating to watch the developments of the play through the acting alone, while a ballet appears much more intelligible without the music. On the other hand, the effect of seeing people sing and hearing no voices is irresistibly comic. People singing in church often look as if they are suffering untold agonies.

If there are any compensations I have not yet found them, except perhaps that one can read and write undisturbed in a noisy room, and that one's meditations are not disturbed in the London streets or the interior of a motor-bus.

Yours faithfully,

All Hallows' Vicarage, nr. Rochester. F. J. HAMMOND.

## THE MEDICAL LANGUAGE OF THE THIRD GOSPEL.

*To the Editor of* THE LANCET.

SIR,—I read with much interest the annotation under the above heading in your issue of Jan. 7th. I should like to direct attention to an interpretation of the word σκωληκόβρωτος (translated in both versions of the Bible "eaten of worms"), which agrees with common experience of tropical pathology, and so supports very forcibly, I venture to think, the view that the author of the Acts of the Apostles was a good physician who employed an exact and appropriate term in describing the fatal malady of Herod Agrippa the First.

Kirby and Spence, in their "Introduction to Entomology,"[1] discuss the phrase in question and point out that the word scolex (σκώληξ) was used to denote the larva of an insect. So Aristotle[2] employs it when he says that all insects produce a scolex or are larviparous. And when Galen prescribed a remedy for ulcers infested with maggots he used the same word. Liddell and Scott's "Greek Lexicon" (edition 1883) refers to Theophrastus, who writes σκωληκόβρωτος of a worm-eaten tree—i.e., a tree worm-holed by grubs.

It is a matter of everyday practice in the East to find the larvæ of flies inhabiting wounds and ulcers, a condition known as myiasis.[3] It is more than probable that the malady of Herod Agrippa was complicated by this condition, the concomitant sepsis aiding, if it did not cause, the fatal issue. Two well-authenticated cases may be quoted in corroboration.

The first is that of the Emperor Galerius, of whom we read in "The Decline and Fall of the Roman Empire"[4]: "His body, swelled by an intemperate course of life to an unwieldy corpulence, was covered with ulcers, and devoured by innumerable swarms of those insects who have given their name to a most loathsome disease." In a footnote Gibbon says, "Lactantius and Eusebius describe the symptoms and progress of his disorder with singular accuracy and apparent pleasure," but it seems from the passage cited above that the historian took the condition to be one of phtheiriasis.

The second case referred to by your contributor is that of Antiochus Epiphanes, the graphic description of whose death is to be found in the Apocrypha.[5] Here we have a chariot accident—severe injuries to the limbs—septic infection of the wounds, perhaps communicating with fractured bones, invasion of the fly-blown ulcerated surfaces by maggots, and subsequent death from septic absorption:—

> It came to pass that he fell down from his chariot, .....; so that having a sore fall, all the members of his body were much pained.
>
> * * * * * *
>
> So that the worms (σκωληκες) rose up out of the body ....., and whiles he lived in sorrow and pain, his flesh fell away, and the filthiness of his smell was noisome to all his army.
>
> And the man, that thought a little afore he could reach to the stars of heaven, no man could endure to carry for his intolerable stink.
>
> * * * * * *
>
> So died he a miserable death in a strange country in the mountains.

In view of these parallel cases and ancient instances, I cannot but accept the rendering set forth by Kirby and Spence in their "Entomology," and at the same time give all credit to the medical accuracy of the author of the Acts of the Apostles.—I am, Sir, yours faithfully,

Birkdale, Lancs., Jan. 17th, 1911. D. M. HUTTON.

## THE ADMINISTRATION OF STIMULANT DURING ANÆSTHESIA.

*To the Editor of* THE LANCET.

SIR,—I desire to bring to your notice a method of producing anæsthesia which I have not hitherto seen described. The anæsthetic consists of a mixture of ether, alcohol, and oxygen. The apparatus, which is extremely simple and inexpensive, is composed of: 1. An ordinary Schimmelbusch mask, or, better still, although not essential, Hewitt's modification, which is specially adapted for the exhibition of oxygen with anæsthetics. 2. A glass bottle with a rubber stopper, through which are led two pieces of glass tubing, the longer of which reaches to within one inch of the bottom, and the shorter extending for one to two inches beyond the under surface of the rubber stopper. 3. A cylinder of oxygen. 4. A supply of rubber tubing.

The glass bottle is filled to the depth of two inches with absolute alcohol. Rubber tubes are fitted on to the two glass tubes, the one attached to the longer being fixed at its other end to the nozzle of the cylinder, and the other from the shorter of the tubes leading to the inhaler. Oxygen is then bubbled through the alcohol and the administration of ether commenced. The apparatus can be equally well used in the administration of other anæsthetics.

I have found this method very useful in bad cases where the patient prior to the operation is in a condition of shock, and also in those conditions where one anticipates and wishes to obviate shock from the operation itself. It has proved very successful in laparotomy for intussusception, ectopic gestation, &c.

I am, Sir, yours faithfully,

H. M. ANDERSON,
Resident Surgical Officer, Royal Infirmary.

Preston, Jan. 23rd, 1911.

## CATGUT STERILISED BY IODINE.

*To the Editor of* THE LANCET.

SIR,—I should be glad to know the experience of surgeons who use catgut sterilised by the iodine method for the deep sutures in their cases. In a long series of cases here where this suture has been used about 50 per cent. show the formation of a variable quantity of orange-coloured serum in the deeper parts of the wound. This serum collects, as a

[1] Seventh edition, p. 51.
[2] DeGenerat. Animal., l. 1, c. 2.
[3] Encycl. Medica, vol. viii., p. 211.
[4] Gibbon, Edition 1802, vol. ii., p. 213.
[5] II. Maccab. ix.

rule, within the first week after operation. There seems to be but a slight tendency in these cases for absorption of the serum to take place, and in hardly any case does suppuration follow its collection. In some cases there is a variable rise of temperature, seldom exceeding a degree and a half, to indicate that healing is not proceeding satisfactorily, but in many there is no evidence apart from inspection to show that this is the case.

On releasing the fluid by passing a probe between the skin sutures, or by removing a stitch, the parts fall together and healing rapidly follows. The formation of fluid in the wound naturally delays consolidation of the scar, and I should be glad to learn any means whereby this accident could be avoided. The catgut is sterilised as follows: the raw gut is first dipped in a 70 per cent. alcoholic solution of biniodide of mercury (1-1000) and is then kept in tr. iodi for at least ten days before use.—I am, Sir, yours faithfully,

R. S. CAREY, M.R.C.S. Eng., L.R.C.P. Lond.,
House Surgeon, The Infirmary, Peterborough.

Jan. 25th, 1911.

## THE INSPECTION AND TREATMENT OF SCHOOL CHILDREN.

*To the Editor of* THE LANCET.

SIR,—As a member of the committee of management of the Central London Throat and Ear Hospital, and as chairman at several meetings during which the question of the medical treatment of school children under the care of the London County Council was discussed, I beg leave to state that my colleagues were unanimously of opinion that at the present moment it was not advisable to enter into any commercial undertaking or any kind of agreement whatever by which the London County Council would have a right to claim medical service at our hospital.

What we did was to pass a resolution to the effect that we were "willing as hitherto to receive these children from the London County Council schools who are suitable for hospital treatment so far as the capacity and resources of the hospital will allow." This resolution has not been departed from, but I understand that it has been misinterpreted by many medical practitioners with whom the hospital has such intimate and cordial relationship.

During the last year we have treated in the out-patient department 346 children whose parents had been directly recommended to seek medical relief for affections of the throat, nose or ear from the various education committees in connexion with the London and the neighbouring county councils. As members of the community every one of these children was a suitable hospital patient, and they were admitted as members of the community, and not by virtue of their relationship with the county councils. Many of these children were sent by medical practitioners who use this hospital to such a large extent, no less than 35 per cent. of the out-patients and 57 per cent. of the in-patients coming direct from their own doctors.

This mode of action on our part appeared to be the best adapted to satisfy the general medical practitioners whose legitimate interests we strive to safeguard, and it approached as nearly as possible the ideal of making this hospital a consultation centre between the practitioner, his patient, and the specialist.—I am, Sir, yours faithfully,

CARMICHAEL THOMAS.

Inverness-terrace, Hyde Park, W., Jan. 31st, 1911.

## THE NOMENCLATURE OF THE SUPRARENAL PRINCIPLE.

*To the Editor of* THE LANCET.

SIR,—I must apologise for intruding in this controversy, and would not have done so had Mr. Braithwaite not introduced my name. I am sure there is no intention on the part of Mr. Braithwaite to foster a principle which is not only quite unjust to manufacturers but also misleading to pharmacists, and may, indeed, be generally mischievous in its effect; yet logically this is the untenable position to which he is driven by arrogating to himself the power to substitute a synonym in the place of the name adopted by the author; in other words, to "adjust" a clinical report in such a manner as would not, it is safe to say, receive the sanction of the author. He must start with the general hypothesis that all the preparations of the suprarenal gland now on the market are identical, and if used under identical conditions will produce identical results—a hypothesis which is falsified by analyses and clinical reports, and, moreover, is not claimed by the respective manufacturers. This being so, and the pharmacist being unable to identify the individual product, of what *practical* value are Mr. Braithwaite's abstracts? It is quite obvious that they will be misleading; and if, as is quite possible with a sensitive drug of this nature, the desired therapeutic effect is not produced, dissatisfaction ensues, and the author, the prescriber, the pharmacist, and the drug itself are, in that particular connexion, discredited.

The quotation of mine to which Mr. Braithwaite refers has, it seems to me, little bearing on the subject, except to make it more difficult for him to justify the substitution of the synonym. Further, it makes this portion of the letter inconsistent with his action and with the final paragraph of his letter, where he tacitly admits that the name used by the author indicated that a particular preparation had given a definite therapeutic effect.

In conclusion, I can only express the hope that, in justice to all, Mr. Braithwaite will either give honour where honour is due, or if this course is not permitted him by the ethics of the "Year Book of Pharmacy," that he will abstain from a system of substitution as improper as it is misleading.

I am, Sir, yours faithfully,

London, Jan. 31st, 1911. THOMAS MABEN.

## MORE GRATUITOUS SERVICES.

*To the Editor of* THE LANCET.

SIR,—The following correspondence may interest your readers, as it refers to a subject in which we are all interested. I should like your opinion on the matter, which, briefly, is as follows.

A servant (injured at work) brought me a message from her master that the insurance company required a medical certificate. I replied that if he would apply to me direct and pay the fee for it he should have it. I enclose a copy of his reply and my answer.—I am, Sir, yours faithfully,

Jan. 30th, 1911. BETA.

[ENCLOSURE.]

DEAR SIR,—I am insured against any claim under the Workmen's Compensation Act, and the matter is now between Mrs. —— and the Insurance Company. They ask for a certificate which *she* must get, as the matter is entirely out of my hands. Yours truly,

—— ——.

DEAR SIR,—As an act of courtesy I enclose you the certificate you require, but I must enter a protest against the manner in which the gratuitous services of the medical profession are so frequently claimed—apparently as a matter of right—for the pecuniary benefit of others. As you appear entirely to misunderstand the position, may I briefly explain it?

A is an employer of labour (in this case yourself); B is a servant (in this case Mrs. ——); C is an insurance office. Under the Workmen's Compensation Act B has a claim against A for wages. To limit his liabilities or recoup his losses A insures with C, the latter undertaking to carry through the negotiations with B, and pay A's liabilities.

Nevertheless, C is only acting on behalf of A, and should C be unable to meet its liabilities, or through some technical loop-hole be enabled to plead non-liability, B's claim against A would still exist; whilst C's refusal to pay would concern A only and not B, the latter having no legal interest in the private contract between A and C.

It is to enable A to transfer his liabilities to C that the certificate is required. If this be refused A will be the loser, for C will not pay without proof, whilst under the Act A must still pay B, and obtain what redress he can from C for breach of contract.

Thus the certificate is required entirely for the benefit of A, and its non-production will not in any way affect B's position, whose legal claim against A is still intact.

Therefore A is undoubtedly liable for the expense of obtaining the necessary certificate. Yours truly,

—— ——

*** Beta has put his case quite correctly in his letter to A, the employer, but how far he may have affected his right to claim a fee from A by writing that he sent a certificate "as an act of courtesy" we do not prophesy. He would have been wiser if he had refused the certificate until he obtained either payment or promise of payment from A, who, of course, is liable to compensate his own servant but has indemnified himself by insuring against that liability. In order to obtain the benefit of that indemnity A needed a certificate to send to his insurance company; he asked for it, and it is for him to pay for it. So far from the matter being entirely out of his hands, neither he nor his servant can alter the obligations imposed by the Workmen's Compensation Act.—ED. L.

# THE HOUSING PROBLEM IN SOUTH WALES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Continued from p. 267.*)

### *The Poorest Houses and the Poorest Tenants.*

THE houses in Merthyr that are defective and, in fact, unfit for human habitation are nearly all old houses, and in many cases the expiration of the leases is so near at hand that the owner naturally objects to incur any outlay for repairs. The authorities, it may be said, should proceed all the same, and this they have done in many instances, but not in all. The fact is that the rents, especially for the old houses owned by the Dowlais works, are very low. One cottage I visited had two small bedrooms upstairs and one downstairs, so that there were three beds in all, and the rent was only 10*s.* a month. There are a considerable number of old cottages let at 9*s.* 6*d.* per month. A new cottage could not be obtained for twice as much; 20*s.* a month is considered a low figure. When a family, or perhaps an old couple, are reduced to the lowest straits of poverty it often happens that their most valuable asset is the fact that they are in occupation of an insanitary dwelling for about half the rent they would have to pay elsewhere. If the law were enforced they could be turned out. But their house may be insanitary only because it is somewhat dilapidated, and more especially because it is overcrowded. The drains are in order and do not pass under the dwelling, which is well exposed to plenty of light and fresh mountain air. To turn these people out when there is no better place for them to live in would be mere cruelty. If they are a dirty, degraded lot, to place them in a better house where they must pay twice as much rent would only add to their poverty and consequent degradation. The evidence, especially at Merthyr, goes to show that good property quickly deteriorates under such tenants, unless the change of dwelling coincides with a favourable change of occupation. Something is needed to reawaken hope and ambition, atrophied by long periods of misery and semi-starvation. The ideal would be to obtain more remunerative employment at the psychological moment of the enforced removal from a slum to a decent dwelling. Then the better house and the better pay coming hand in hand would engender the confidence and the courage necessary to make these poor and crushed sections of the community enter the lists once more and take an active part in the struggle for life. A real regeneration might be thus brought about, otherwise the friendly counsel of sanitary inspectors, of nurses, and of other reform agencies falls on the ears of apathetic people who have not the vitality to avail themselves of the advice given. People only improve, take more pride in their homes, and attempt to keep them clean when they remove voluntarily because they had succeeded in getting more advantageous employment. This is so well known that when the borough council was compelled itself to build houses those who were opposed to such municipal intervention urged that the most degraded of slum-dwellers should be admitted into the council houses. This was a certain way of ensuring the financial failure of the enterprise and thus limiting its scope. The council, however, was not satisfied to accept only the "ne'er do weels" for tenants, though there is an amusing story told how four council houses were let to very disreputable and undesirable tenants. On each occasion the house had been taken by a very decent-looking person wearing something like a sealskin jacket. An inquiry, however, revealed the fact that, though the tenants differed, the same smart imitation sealskin jacket had, on each occasion, been borrowed just to produce a favourable impression during the negotiations.

### *Dwellings Built by the Corporation.*

The council of the borough of Merthyr, acting under Part III. of the Housing of the Working Classes Act, has built 100 houses in the Penydarren district which are let at 21*s.* per month; in Penywern, 38 houses let at 17*s.* a month; in Twynyrodyn, 35 houses let at 18*s.*, and 15 at 22*s.* a month; at Dan-y-Deri, 38 at 22*s.*; and in Penywern there are 68 more houses that are not yet quite completed. This makes a total of 294 houses built and rented direct to the tenants by the corporation. Let at the rents mentioned, these houses pay and do not add any burden on the rates. There are always more applicants than there are houses to let, and it is now proposed that the council should build houses in the Plymouth and Park Wards. In the same districts just mentioned 304 houses were built by private enterprise. Nevertheless, this is obviously insufficient. Of the two-roomed houses inspected in 1907 the proportion of overcrowding was equal to 29 per cent. This increased to 38 per cent. in 1908 and to 42 per cent. in 1909. The increase of overcrowding in three-roomed houses was from 12 per cent. to 19 and, finally, to 26 per cent. during the same three years. Overcrowding is here defined as meaning that the inmates exceeded double the number of rooms. The overcrowding is mainly in the two- and three-roomed houses. The four-roomed house seems to be the most suitable type, but the five- and six-roomed houses are, again, more apt to be overcrowded, as it generally means the taking in of numerous lodgers.

The 38 houses the council built at Penywern, Dowlais, were all four-roomed dwellings, two rooms downstairs and two upstairs, and a bath which is supplied with hot water from a boiler heated by the kitchen range. The cost for each house was £134 10*s.*, and, as the repayment of the loan is extended over a period of 60 years, they can be let for 17*s.* a month. It should be stated that there is also the cost of constructing the road for these houses, and this raised the outlay to £150 per house. At Dan-y-Deri, Merthyr Vale, the council had acquired some land, and conceived a more ambitious plan of building 38 houses that were to cost £242 each. But the Local Government Board objected that this would mean too high a rent for the class of tenant it was desirable should be housed. So the scheme was therefore altered to reduce the cost to £200. At this lower price the houses contain a kitchen which, as usual in such cottages, is the general sitting-, dining-, and living-room, and also a scullery. On the first floor there are three bedrooms, the largest having a cubic capacity of 1080 feet. These houses let for 22*s.* a month. The first lot of corporation houses were erected in 1903 by the urban district council before Merthyr was promoted in November, 1905, to the rank of a county borough. They form two streets appropriately called Urban-street and Council-street. These are situated just above, and a very short distance beyond, the terrible slum on the hillside that overlooks the Dowlais Ironworks. They afforded a pleasant contrast after visiting the squalor and misery that were so close at hand. The roads are broad, and an extensive space is left behind for gardens and fresh air. The houses with their dressed stone fronts look very prim. The inhabitants take pride in keeping everything bright and in good order. The interiors I visited were very clean, and the only fault I can find is that no baths are provided. Here the land costs 1½*d.* per square yard on a lease of 999 years, the back lanes being thrown in free. As matters now stand, the borough owns a good deal of land on similar leases, and it has become practically a freehold, for there is no one remaining to claim the ground-rent. The council experiences no greater difficulty in obtaining land than private builders; and, indeed, for the first housing schemes brought forward eight or nine years ago they obtained land below its market value. It was the late Mr. Thomas Williams, an iron-master, who offered land on these exceptional terms, for he was very anxious to help in the rehousing of the poorer sections of the population. A fair amount of public spirit, I was assured, has been displayed by the ground-landlords of the neighbourhood.

### *Dwellings Built by Private Enterprise.*

From these council houses I went to several new streets recently erected by private enterprise. Among these, one of the most interesting was Baden-street, because several of the inhabitants who have been driven out of the worst slums have gone to live there. The street is admirably situated on a hillside with large garden space behind and open fields close at hand; in fact, the inhabitants may be considered as living in the country, though they are not far from the centre of the town. Some of the houses are quite nice, while others already wear an appearance of dilapidation. The paper of the partition walls has been torn off, exposing the laths and plaster. The separation wooden rails in the back gardens or yards have been torn up and probably burnt for firewood. Indeed, the stair banisters are also at times burnt.

People who are starving suffer greatly from the cold, and they cannot afford to buy fuel. Other houses had windows broken. The tenants could not have fresh panes put in. Their poverty might be reduced if they grew vegetables in the large garden space behind the houses, but they are too listless. Also, many are but temporary tenants. This is one of the great difficulties. People from all parts are attracted here in the hope of getting some work. They have no intention of settling down and take no interest in their home. On the other hand, the houses of the native Welsh are easy to recognise, first, because they are much better kept and, secondly, because there is always an attempt made to grow flowers at the window. Inside there are surely some brass candlesticks or other brass utensils and ornaments that are kept in the highest state of polish and prove by their glitter some pride in domestic environment. But in Baden-street there were houses containing no furniture worthy of the name, and certainly nothing whatsoever that was ornamental. Many of the inhabitants were dressed in rags and the children were barefoot, which was perhaps preferable to wearing the remnants of shoes such as the parents carried fastened to their feet. The street was clean, for the inhabitants are prosecuted if they throw out refuse or empty dirty water in the gutter instead of pouring it out over the gully. But they take their revenge by throwing out tins and gallipots, soiled bedding, and sordid, filthy rags into the back gardens, which were intended to provide vegetables and flowers for happy prosperous homes.

*The House Famine.*

Not far from here there are in Queen's-road some cottages built by the council that have a beautiful outlook over the hillside. There is a small room by the side of the large living-room in the front, while there are a scullery and bathroom at the back. Above are two or three bedrooms. The tenants seemed quite proud of their homes and did not degrade the property. The rent was 22*s.* a month, and these houses are close to the park which has been made in an old quarry so hollowed out that it looks like an amphitheatre. Here the municipal band plays in the summer, and this is much appreciated by the Welsh, many of whom are born musicians. On the other hand, while these improvements have been effected, the riverside and China districts, which some 12 years ago were sinks of immorality and vileness, are now completely swept away. Still, and in spite of all these endeavours, the housing problem remains unsolved and the official statistics quoted above show that the overcrowding is increasing. The borough council boasts that it stands in the first rank among the boroughs of the kingdom for activity in the work of housing. The population of Merthyr is estimated at somewhat less than 79,000, and the council has built close upon 300 houses. There are not many towns that have done so much in proportion to their populations. On the other hand, public meetings have been held at Merthyr and resolutions carried calling upon the borough council to erect, not 300, but 2000 houses. Certainly the latter figure is nearer the mark if the necessities of the situation are to be satisfactorily met; but even then a plentiful supply of houses does not meet all the difficulties. We have seen that 17*s.* a month is the lowest possible rent for a good house that cost in all £150 to build. On the other hand, the poorest sections of the population still find houses which they rent at less than 10*s.* a month. Therefore, of two things one must occur—either the wages these people earn must be increased or cheaper houses must be built. If there is to be no increase of wages the house must not cost more than £90 to £100. Even then it is a poor business for those who find the capital. Ten shillings a month on £100 only represents 6 per cent., and we should count 2 per cent. for repairs and something more for the sinking fund, to say nothing of rates and taxes. Obviously wages should be such as to admit of the payment of more than 10*s.* a month for rent. It was not easy to ascertain what the unskilled labourers earn. Some persons assured me that in the ironworks they only obtained 1*s.* 11*d.* "a turn," while others insisted that at Dowlais they received 2*s.* 11*d.*; but everyone agreed that the work was very irregular. What is called "a turn" practically amounts to a day's work, and it is only when the works are very busy that these men can hope to earn from 16*s.* to 18*s.* a week. These men and the miners' assistants cannot afford the rent of a new and decent cottage. In the building trade unskilled labour is paid 5½*d.* per hour, and a wages book was shown me which proved that 52 workmen had earned £40 18*s.* the previous week (considerably less, therefore, than £1 a week). A large number of poorly paid workers, including some of the lower type of Irish, have drifted here. They work, but often only in such a fashion that it is doubtful whether it is worth employing them. Many are social wrecks and have not the manhood remaining to make a genuine effort. These are the sort of people who create insanitary conditions and keep the sanitary inspectors constantly at work. Thus last year legal proceedings were taken in respect to 160 houses. Of these, 87 were altered and rendered habitable, 26 were closed, and in 48 cases the closing orders had to be postponed because it was impossible to find accommodation for the tenants elsewhere, and here we come back to the bedrock difficulty that there are not sufficient houses available. In addition to the above cases that came under the Housing of the Working Classes Act, the sanitary inspectors served 263 legal notices under the Public Health Act, which resulted in a considerable amount of structural alterations and repairs. Thus, while overcrowding and misery still prevail, the surroundings are constantly watched and kept as wholesome as the circumstances permit.

*The Cry for More Houses.*

Many of the worst dwellings, and these are generally very old cottages, are saved by their situation on a hill-side. Here, I would again insist, they are exposed to the wind and bathed in light. Nothing overtops them, nothing puts them in the shade. The inhabitants may strive hard by overcrowding, and by their untidy, filthy habits to poison themselves, but they do not often succeed. If there were only a foul drain and a putrescent dust-bin they would more often achieve what seems to be their object. But the drains, even if out of order, are outside the houses and not under the living- and cooking-room, as I have often found in London and elsewhere. As for the dust-heap, the unauthorised rubbish deposit, the scavengers are too active, and it has not time to grow to dangerous dimensions. Of course, it is all very lamentable, very horrible, and sometimes quite picturesque. We have the poetry of squalor, the fascination of that which is sinister. It is all good subject matter for the realistic artist, for a lay newspaper, for the descriptive portions of a novel with a purpose. Some good word-painting could be done in describing the hovel homes of the workers in the vale of martyrs. But when it comes to technical details, then it must be confessed that these slums are more fortunately situated than is usually the case with slums. With some exceptions of course, they have more air, more light, are more free from the risks arising from faulty drainage than is the case with the slums in many, perhaps in the majority, of the large towns. In consequence of the industrial development the overcrowding is exceptionally prevalent, and this is the principal and most pressing danger. The most striking structural abomination is the "under-and-over" house. This is, indeed, a great and undoubted evil which is special to these mountainous parts of the country. But no one attempts to defend such dwellings, and if a few still remain it is simply because there is such an acute house famine. Thus, and from whatever point of view the question is considered, the conclusion is always the same—namely, that a great number of very cheap houses must be built, and this must be done at once.

*(To be concluded.)*

## MANCHESTER.

**(FROM OUR OWN CORRESPONDENT.)**

*Ladies' Public Health Society.*

THE Ladies' Public Health Society plays an increasingly important part in influencing the public health of Manchester, more especially as regards poor women and children. It has budded off, it may be said, from the Manchester and Salford Sanitary Association, and now has been so far approved of by the municipal authorities that the Manchester women health visitors of the society are paid by the corporation, and they and the lady visitors work in conjunction with

the medical officer of health. The annual meeting of the society was held in the Lord Mayor's parlour, the Lady Mayoress being in the chair, on Jan. 27th. One interesting item in the report had reference to the work of the Mothers' Guild. It was found that many poor women, either before or after confinement, suffered in health, and their offspring also, from insufficient nutritious food, and it was determined to do something to help them by providing one good meal a day, for which in most cases payment was made. During last year 9397 dinners were provided, 8901 of them being paid for and 496 being given. The effect of this one good substantial meal on the health of mothers and babies was noticeable. Intemperance, a foe directly and indirectly injurious, they always had to fight, for it was a cause of much distress. But one of the greatest difficulties to contend with was the wonderful ignorance of the women, especially of the younger ones, who have had all the advantage apparently that they were able to extract from our system of compulsory education. A school for mothers, therefore, had been opened in Manchester, and was doing good work. For the first two years the society had given £50 a year towards its support. The medical report of the Mothers' Guild shows that during the year nearly 250 babies under the age of one year were brought to the guild for the first time, and on an average between 20 and 25 babies had attended every Thursday afternoon for the weekly weighing. A great part of the work of the society is voluntary, and the Bishop of Manchester, in moving the adoption of the report, touched approvingly on the combination of voluntary and municipal effort. In seconding the motion, the Mayor of Salford said, "It was distressing that there were young women who did not know how to take care of their babies, or how to make a home." This society deserves success, and it will not be to the credit of Manchester if it languishes for want of help.

*Coroner and Medical Man.*

There was what the reporters call "a breezy passage" a few days ago at an inquest at St. Helens between Mr. Coroner Brighouse and Mr. F. P. Bassett regarding the registration of a child's death. It cannot be said that these "breezes" are always the fault of either one side or the other, but they are too frequent and do not reflect credit on the coroner's court. In this instance the coroner blamed the medical man for causing the parents to be "put to additional sorrow and the annoyance of an inquest, and explained that Dr. Bassett, instead of giving a death certificate could, if he thought fit, have expressed the opinion that the death was one from natural causes." Mr. Bassett said he could not give a death certificate as he did not precisely know the cause of death. The verdict was "Death from natural causes," and the jury said they "did not think the doctor had acted with any ill-will." The coroner seems to have been a little ruffled in temper, for "he did not think all the trouble would have been caused if there had been an exercise of common-sense." Mr. Bassett, however, held his ground, and concluded by saying: "If you will allow me to say so, I have acted according to law, and I shall always act in the same way." If the law is bad it should be altered, but as long as it is law a medical man should not be blamed for obedience.

*New Altrincham Hospital.*

An isolation hospital, built by the urban district council at a cost of £12,000, was opened about a week ago in Dunham-Massey, Altrincham. Dr. Meredith Young, the medical officer of health of Cheshire, congratulated the council on the completion of "an up-to-date, well-designed, and well-equipped hospital." They wanted to know, he said, whether the hospital was going to give the sufferer a greater chance of getting better than in the home, and whether those in the same house or the same street were going to have a better chance of escaping possible illness and possible death. He was able to assure his audience, from his long experience, that the hospital most positively offered them at least ten times the chance that the ordinary home did.

*Overcrowded Infirmary.*

Almost every charitable institution suffers either from indigence or overcrowding, and after a fairly successful year as regards funds the Rochdale Infirmary has to complain of the latter. At the annual meeting of the infirmary workmen's committee a former secretary of the institution urged strongly the need for making early extensions. He said: "The operating theatre was a disgrace to Rochdale, and the infirmary itself was frightfully overcrowded. More beds were urgently needed." It is to be hoped that Rochdale will rise to the occasion.

*Slums at Knutsford.*

It comes rather as a shock to learn that Knutsford, the Cranford of Mrs. Gaskell's story, should be anything but romantically clean, pretty, and sweet swelling. Yet it seems that some of the housing conditions in the place are shocking. A case of child neglect was brought up and the evidence showed abominable overcrowding. The place had only two rooms, and they were occupied by 15 people, adults and children. The magistrates made the following comment: "The bench think it desirable to say that they cannot understand how it is that such a state of things as this has been allowed to continue in our midst for so long. The local authority has been considerably to blame in not rectifying this state of affairs at a much earlier period." This rebuke does not seem undeserved.

*Water-supply of Ashton-under-Lyne.*

Northern towns which obtain their water-supply from moorlands have to be very watchful as to contamination by lead, not so much from the water before it reaches the lead pipes in the houses as after that from the action on the lead of the slightly acid water. Ashton has been inquiring into the state of its water-supply with satisfactory results as to the cold tap water, no lead being found, though two samples showed slight acidity. With the hot water it was different. Three out of six samples of the latter "showed a marked quantity of lead, which was apparently dissolved from the unions and joints." This is, of course, highly dangerous. Dr. J. W. Talent, the medical officer of health, pointed out that those who drank from the hot water taps ran a decided risk of lead poisoning, and that the practice was highly dangerous. The results of the tests are to be sent to the Local Government Board. The hint as to the effect of hot water increasing the risk of lead poisoning may be taken by many places besides Ashton-under-Lyne.

Jan. 24th.

## BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

*The Late Lord Winterstoke.*

ON Hospital Sunday Lord Winterstoke died, at the age of 80 years, at his house at Blagdon, on the northern face of the Mendip Hills. There is scarcely a feature of the progress of modern Bristol with which he has not been identified and few philanthropic and educational undertakings which have not enjoyed his support in the form of energy, common-sense advice, and liberal contribution. Here it will be enough to recall his association with the University of Bristol and the General Hospital. He was a Pro-Chancellor of the former, and as such formally opened the new wing not many weeks ago. Up to the date at which the University received its Charter his contributions amounted to £35,000. The Art Gallery which he gave to his native city at a cost of £40,000 adjoins the University, and may ultimately become the art school of the University. He was a vice-president of the General Hospital, and not long ago gave £5000 towards the cost of the new buildings which the committee hopes to put up shortly; this was indeed his last public benefaction.

*Hospital Sunday in Bristol.*

On Sunday, Jan. 29th, the Lord Mayor's annual appeal for subscriptions in support of the medical charities of Bristol was issued through the medium, and with the help, of the various places of worship. At the Cathedral service in the morning the Lord Mayor and corporation were present, with the Vice-Chancellor and other representatives of the University, and representatives from the hospital committees and staffs, including the president and chairman of committee of the General Hospital (Mr. Joseph Fry and Mr. Herbert M. Baker). An appropriate sermon was preached by Archdeacon Robeson, and the collection, like others taken throughout the city, was devoted to the Lord Mayor's fund. The facts upon which the appeal is based were summarised on a printed slip distributed throughout the city as follows: The total number of patients treated in the year by the four

chief hospitals (the Royal Infirmary, General Hospital, Children's Hospital, and Eye Hospital) was 109,000; the ordinary income of these institutions amounted to £33,200, and the ordinary expenditure to £39,700. If it was not for the hardness of heart engendered by the annual repetition of such statements, these facts would surely strike the public as deplorable. The perpetual insolvency is, of course, sufficient evidence of the unsatisfactory results of the present haphazard system of medical relief; to this is added the appalling fact that the hospital committees claim with pride to have provided free treatment for more than a quarter of the population of the city. Of course, deductions must be made from the total of 109,000, which includes renewal of treatment by renewal of hospital notes given to patients already under treatment and counted thereupon as new patients; but the total does not include the patients who have been treated by the Bristol Dispensary, the Eye Dispensary, and other smaller institutions. For this tremendous overdraft upon their resources the Bristol citizens have to thank the want of coördinate control, which allows the two larger hospitals to compete with each other in the number of people they can attract to their out-patient departments for treatment. In no city in the kingdom does the hospital system more urgently require overhauling and subjecting to some one supreme authority by whom the relations of the various institutions to each other might be determined and fixed. There was a chance of such an authority being created when the question of a King Edward Memorial Fund was under consideration, but this chance was thrown away.

*A New Games Field for the University of Bristol.*

Mr. George A. Wills has given £4000 to the University for the acquisition of a 12-acre field about two and a half miles from the University buildings at Coombe Dingle, a suburb on the north-western boundary of Bristol. The enclosing and laying-out of the ground will cost about £1000, and the pavilion and dressing-rooms another £1000. In the laying-out of the ground the advice of the head groundman at the Gloucestershire County Cricket Ground, Ashley Down, is being followed. It remains for the University Council to ratify the proposals as to the exact plans to be adopted, and the work of levelling, &c., will then be proceeded with.

*The Red Cross Society in Bristol.*

The members and supporters of the Bristol branch of the Red Cross Society recently held a meeting at the Victoria Rooms, at which satisfactory progress was announced. Over 250 persons have applied to join the voluntary aid detachments, so that it has been possible to form three women's detachments and one of men. Additional detachments have been promised by the Clifton Ladies' Club, by the employees of Messrs. E. W. Savory, Limited, art printers, and by the inhabitants of the suburbs Henbury and Westbury-on-Trym. Other firms have signified their willingness to undertake the training necessary for the formation of detachments. Co-ordination with the St. John Ambulance Association has proved possible in Bristol, so that here, at least, there will be no waste of energy from overlapping of organisations. The committee of the Bristol Royal Infirmary has offered the War Office the use of its premises as a base hospital of 520 beds, the accommodation which will, it is said, be provided by the projected extension of the infirmary if the Nurses' Home be included. A large general committee has been formed, with the Duchess of Beaufort as president.

*Death of William Andrew, M.B., C.M. Edin.*

Dr. W. Andrew of Launceston died on Jan. 25th, in his sixty-second year. The deceased, who graduated as M.B. and C.M. of Edinburgh in 1873, had been in practice for many years in Launceston, where he was extremely popular and highly esteemed. He took a great interest in all municipal matters, was mayor of Launceston on two occasions, and at the time of his death was an alderman of the borough. He was a staunch Churchman, and for the past 23 years had been vicar's warden of St. Mary Magdalene, one of the most beautiful churches in Cornwall. He was a prominent Freemason. He had a large practice in Launceston and the district, and was medical officer to the local dispensary. Dr. Andrew was unmarried. He will be greatly missed in Launceston, where his cheery manner and generosity had endeared him to all classes of the inhabitants.

*The Royal United Hospital, Bath.*

The annual meeting of the subscribers to the Royal United Hospital was held at the Guildhall, Bath, on Jan. 27th, under the presidency of the mayor. The medical report was satisfactory, but the financial statement showed that although most careful economy had been practised the deficit balance on the working of 1910 amounted to £1838.

*New Isolation Hospital in Somerset.*

At a meeting of the Radstock urban council held on Jan. 22nd it was decided to erect an infectious diseases hospital for the Clutton rural council and the Midsomer Norton and Radstock urban councils. The cost of the building will be about £7000. The council also determined to petition the Somerset county council to make a joint hospital area of the three districts concerned.

*The Yeovil and District Hospital.*

At the annual meeting of the subscribers to this institution held on Jan. 26th a deficit of about £62 was reported for the year. At the suggestion of a member of the committee the money was subscribed by those present and the debt wiped off.

*Amalgamation of Health Appointments.*

At a meeting of the Swindon (Wilts) town council held on Jan. 18th the health committee recommended that the medical officer of health (Mr. F. E. Streeten) should for the future devote the whole of his time to the duties of the office, in combination with that of medical inspector of schools. The committee made a proviso that Mr. Streeten should continue to hold the appointment of medical superintendent of the infectious diseases hospital and also that of medical officer of health for the Highworth rural district. The town council, after some discussion, adopted the proposal.

*The Care of Epileptics.*

At a meeting of delegates from the Poor-law unions of Dorset, which was held at Dorchester on Jan. 17th, it was resolved to approve the principle of removing epileptic patients and feeble-minded persons who were resident in workhouses to a suitable institution, to be controlled by a committee appointed by the unions of the county.

*"A Medical Account to be Paid within 12 Hours."*

At the Tavistock (Devon) county court on Jan. 21st Dr. W. R. Griffin of Tavistock sued Mr. M. Howick, a traveller, for 50*s.* for professional attendance upon his son. Defendant paid £1 into court, and contended that this sum was sufficient for the services rendered. His honour (Judge Lush Wilson, K.C.) gave judgment for Dr. Griffin, and as the defendant did not permanently reside at Tavistock ordered that the amount should be paid within 12 hours.

*The Duties of Public Vaccinators.*

At the last meeting of the Tiverton (Devon) board of guardians it was reported that one of the public vaccinators had not sent any certificates of successful vaccinations since October, 1910, and when written to on the subject by the guardians had not replied to the communication. After some discussion it was decided to inform the Local Government Board of the matter.

*Medical Relief and Old Age Pensioners.*

At the last meeting of the Axminster (Devon) board of guardians it was decided that when old-age pensioners applied for medical aid each individual case should be treated on its merits.

*The Exmouth (Devon) Dispensary.*

At the annual meeting of the subscribers of the Exmouth Dispensary, which was held on Jan. 25th, the following members of the honorary medical staff, whose term of office had expired, were re-elected:—Consulting Physicians: J. W. Hodgson, M.D., C.M. Aberd., M.R.C.S. Eng.; and R. S. Thomas, M.A., M.D., M.C. Cantab., L.R.C.P. Lond., M.R.C.S. Eng. Consulting Surgeons: J. T. Langley, M.R.C.S. Eng., L.S.A., and J. Cock, M.R.C.S. Eng., L.R.C.P. Lond. Medical Officers: G. L. Thornton, M.A. Cantab., M.R.C.P. Lond., M.R.C.S. Eng.; O. Eaton, L.R.C.P. Lond., M.R.C.S. Eng., D.P.H. Camb.; and G. H. Hanna, M.B., Ch.B. Edin.

Jan. 31st.

# WALES.

(FROM OUR OWN CORRESPONDENT.)

*The Water-supply of Borth.*

THE inhabitants of Borth, on the Cardiganshire coast, have prudently decided to ensure for themselves a sufficient supply of water. The town has a resident population of about 800 persons, and in the summer-time that number is nearly doubled. The existing supply is obtained from springs, the water from which is impounded in a small reservoir with a capacity of 40,000 gallons. It is proposed to abandon this reservoir and construct another to hold 664,000 gallons, at a cost of £3000. Mr. John James, one of the medical officers of health of the Aberystwith rural district, in which Borth is situated, is of opinion that the water has no plumbo-solvent action, and that it will not require to be filtered.

*Public Health in Towyn.*

The estimated population of Towyn, Merionethshire, is 3980. Between 1891 and 1901 there was an increase in the population of 443 persons. In his annual report for 1910, the medical officer of health, Mr. E. Lewys-Lloyd, has recorded the very low birth-rate of 14·4 per 1000 of the population, and a death-rate from all causes of 12·1 per 1000. The death-rate from phthisis was 1·5 per 1000. In the past ten years every seventh death registered has been due to some form of tuberculous disease. A scheme of voluntary notification of cases of phthisis is in force in the town, and disinfection of rooms occupied by consumptive persons is freely offered by the district council, the offer only rarely being refused.

*Damages for Slander awarded to a Medical Officer of Health.*

At the recent Carmarthenshire assizes the medical officer of health of Carmarthen, Mr. L. M. Bowen-Jones, was awarded damages to the extent of £100 in an action which he brought against a member of the Carmarthen town council. The cause of action was apparently trivial, and referred to some building stone which Mr. Bowen-Jones had obtained from the corporation, and which the town councillor alleged had not been paid for. In spite of the assertion of the borough surveyor that the stones had been paid for, the statement was repeated and persisted in that no payment had been made; so that, to quote the words of Mr. Justice Lush, who tried the case, Mr. Bowen-Jones could not sit down without investigation after being called a thief. As already intimated, the jury gave a verdict in his favour.

*Water-supplies of South Wales Colliery Districts.*

Three years ago the corporation of Merthyr decided by a majority of 9 votes in a council meeting of 29 members to promote a Bill in the 1908 session of Parliament, having for its object the construction of an additional reservoir, at a cost of some £350,000. When the scheme was placed before a meeting of the ratepayers, however, it was strenuously opposed, and a resolution of disapproval was carried by an overwhelming majority. In these circumstances the Bill was not proceeded with. Three years later—that is to say, on Jan. 11th last—a Bill containing almost identical provisions to that of 1908 was submitted to a town meeting, and on that occasion received what was practically the unanimous approval of the ratepayers. The reason for this change of opinion is not far to seek. It is due to the fact that the sanitary authorities in the Rhymney valleys are promoting a Bill in the coming session for the constitution of a water board having power to purchase two existing water undertakings in the valley, and by throwing a dam across the river Taf Fechan in Brecknockshire to construct a reservoir in precisely the same position as that proposed by the Merthyr corporation, which is above the existing reservoirs belonging to Merthyr. The area of supply of the new board would include the whole of the urban districts of Rhymney and of Gelligaer, with portions of the urban districts of Caerphilly and Bedwellty. The need for an increased supply of water in the Rhymney valley is very great, and there is little doubt as to that need being recognised by Parliament. That the need can be met by impounding the waters of the river Taf Fechan is admitted, and so long as the inhabitants of the valley obtain the water it is of little consequence by whom the works are carried out, though in all probability a joint board representing the Merthyr corporation and the authorities in the Rhymney valley would be the proper body to be entrusted with it.

Jan. 31st.

# SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Eye, Ear, and Throat Infirmary of Edinburgh.*

IN the report of the Eye, Ear, and Throat Infirmary of Edinburgh for 1910 an account is given of the history of the institution. It originally existed as the Eye Infirmary of Edinburgh, founded in 1834. In 1883, when departments were added for ear, nose, and throat cases, the name of the institution was changed to that of the Eye, Ear, and Throat Infirmary of Edinburgh. The institution not only carries on out-patient work, but accommodates in the wards patients requiring operative treatment. The premises consist of two flats in Cambridge-street. During 1910 a larger number of patients had been dealt with than in any previous year. During the year 5311 new patients had been seen, and of these 132 had been treated in the wards as in-patients. The increase in the cases is mainly due to the large number of children from the Board schools sent in consequence of their parents having been notified of eye defect. The work thrown on the medical officers of the eye department was very great and deserved special recognition. The ordinary expenditure had been £416, having exceeded the ordinary income of £321 by £95.

*Edinburgh Medical Missionary Society.*

The annual meeting of the Edinburgh Medical Missionary Society was held on Jan. 26th, Dr. J. W. Ballantyne, president of the society, being in the chair. In the report statistics were given for the last ten years of the society's work. In that time 107,623 cases had been dealt with at the Livingstone Dispensary in the Cowgate, and 2020 patients had enjoyed a fortnight's stay at the Convalescent Home in Duddingston. During the decade the ordinary income amounted in all to £44,458, an average of £4445 17*s.* per annum, while the ordinary expenditure had amounted to £51,488, an excess over the ordinary income averaging £703 per annum. This had been met by drawing on the extraordinary income. The total income for 1910 was £5592, including legacies. After the adoption of the report the directors were re-elected on the motion of Dr. J. O. Affleck, seconded by Professor A. Crum Brown.

*Installation of Lord Rector of Glasgow University.*

Lord Curzon of Kedleston was last week installed Lord Rector of Glasgow University. The ceremony took place in St. Andrew's Hall, in presence of a large number of undergraduates and of the public. Lord Curzon received the honorary degree of LL.D., the capping ceremony being performed by the Vice-Chancellor, Principal Sir Donald MacAlister. The Lord Rector then delivered a most impressive address, taking as his subject, "East and West: a Retrospect and a Forecast." Afterwards he was entertained at luncheon in the University. In proposing the toast of "The University," his lordship dealt with the expansion in the conception and ideals of the universities that had taken place during the past fifty years.

*Glasgow Maternity Hospital Appointments.*

The directors of Glasgow Maternity Hospital determined some time ago to open a gynæcological wing in that institution, and at a meeting held last week it was decided that Dr. Robert Jardine and Dr. Samuel J. Cameron should be elected to the senior appointments. Dr. Jardine is professor of midwifery at St. Mungo's College and is at present a member of the obstetrical staff of the Maternity Hospital. He is an examiner in midwifery to the Scottish Conjoined Board and also holds a similar position at the Victoria University, Manchester. Formerly he was an examiner at the University of Glasgow. Dr. Cameron is a graduate of Glasgow University and assistant to the Regius professor of midwifery at the University.

*A Medical Man and the Sale of Food and Drugs Act.*

A Glasgow medical man was recently charged under the Sale of Food and Drugs Act with having sold, through an assistant, 3 ounces of sweet spirit of nitre that did not come up to the standard of 1·75 per cent. of ethyl nitrite required by the Pharmacopœia. The accused, who was defended by Mr. William Findlay for the Medical and Dental Defence Union, was acquitted.

*Montrose Asylum Board and the New Charter.*

The special committee of the Montrose Asylum and Infirmary Board, appointed to consider the demands of the Forfarshire District Lunacy Board and parish councils of Forfarshire and Kincardineshire for representation on the board of management, handed in its report at a special meeting of the managers held last week. It recommended that the board should agree to a conference, and that a special committee should be appointed to attend it and report to the board. Subsequent to the committee meeting at which this decision was arrived at, a letter, in reply to one by the clerk to the managers, requesting information as to the objections taken by the memorialists to the scheme submitted by the board, was read from the Secretary for Scotland, in which he replied that from resolutions submitted to him by these bodies after consideration of the proposal for a new charter put forward by the managers of the asylum, he gathered that the main points of difference were as regards: (1) The relationship between the asylum and the Montrose Infirmary and Dispensary; (2) the constitution of the board of management of the asylum. If their committee thought it necessary to ascertain, more particularly at the present juncture, the views of the district lunacy board and parish councils, Lord Pentland would suggest that they should communicate with Mr. R. Freer Myles and Mr. W. K. Macdonald, who acted for these bodies respectively; but it appeared to his lordship eminently desirable, in the event of a conference such as was under consideration of their committee, that parties should enter upon the discussion of the points as little hampered as might be by antecedent proposals or resolutions. The recommendation of the special committee that a conference should be held was agreed to.

*The University of St. Andrews and the Inclusive Fee.*

At a meeting of the University Court of St. Andrews, held on Jan. 21st, there was submitted a memorandum of the deliberations of a conference of representatives of the University Courts of the four Scottish Universities, upon the proposed institution of inclusive or composite fees, to be uniform for a recognised course of study for the same degree throughout the Scottish Universities, in fulfilment of the condition attached by the Treasury to the additional grants voted to the Scottish Universities. The Court directed intimation to be made to the Treasury that it had accepted the principle of an inclusive fee, and had generally approved of the memorandum and the recommendations of the conference.

*Proposed New Arbroath Infirmary.*

A meeting was held on Jan. 23rd of the Arbroath Infirmary directors. A report was read by Dr. Macintosh, medical superintendent of the Western Infirmary, Glasgow, who has been appointed by the building committee to examine the Arbroath Infirmary. The important alterations and additions recommended in the report would involve an outlay of at least £6000, and the opinion was expressed that it would be better to erect a new building altogether. An architect was appointed by a ballot vote to advise the directors in the circumstances, and it was remitted to him to bring up a report as to what was advisable to be done.

*Aberdeen Students and the Rector's Carriage.*

A mass meeting of Aberdeen students was held on Jan. 26th to consider the position with regard to the smashing of Mr. Asquith's carriage on the occasion of the rectorial address. Mr. Trail, the owner of the vehicle, has offered to accept £25 as settling the whole claim, and after a statement by the President of the Students' Representative Council, it was agreed that the students should be asked to contribute that sum.

Jan. 31st.

# IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Treatment of Juvenile Criminals.*

IN a presidential address to the Statistical and Social Inquiry Society of Ireland last week Lord Justice Cherry dealt with the modern treatment of young criminals. Since 1906 a Borstal institution has been in existence in Clonmel prison, and last year the entire prison was given over to Borstal work, the ordinary prisoners being transferred elsewhere. Prisoners from all over Ireland are now brought to Clonmel if sentenced to detention in a Borstal institution or to ordinary imprisonment of sufficient duration to give hopes of successful reformatory treatment. The results of the work in Clonmel have been very satisfactory. Of youths discharged under licence by the powers of the Prevention of Crimes Act, 1908, not one has been brought back for further detention. Lord Justice Cherry protested against short sentences for children. A short sentence, he said, had no punitive effect on a child, only tending to familiarise him with the inside of a prison. If it were necessary to place a child under detention he should be given a sufficiently long sentence for the Borstal system to have a chance of being efficacious.

*Action for Fees.*

Sir Christopher Nixon last week sued two ladies for £30 9*s.* for services rendered, journeys made, and work done at their request, and damages for breach of contract. As a consequence of a motor accident the ladies sued the owner of the car for damages. Their solicitors had arranged with Sir Christopher Nixon to examine them and testify in court. The fee now disputed was 25 guineas for attendance and testifying in court, as arranged with the solicitors. Sir Christopher Nixon having attended court as requested on a certain day and hour, found that the case had been settled. The solicitors declined to pay the fee on the ground that he had not actually given evidence. It was also contended that when a medical man had examined a person whose condition subsequently became a question in court, he could be compelled to attend and testify for the fee laid down in the schedule. The Recorder gave judgment for the full amount, holding that there was an express contract between the parties, of which Sir Christopher Nixon had performed his part so far as he had not been prevented by the other parties, and strongly criticised the solicitors for refusing to pay the fee.

*Proposed Reforms in the University of Dublin.*

The Senate of the University of Dublin last Saturday by a large majority approved the proposed reforms in the constitution of the University Council—viz., that the Council should have a more representative basis than heretofore, and in particular that direct representation should be given to the teachers in the professional schools. The School of Physic is to have the election of two members, the entire Council to consist of 19 members.

*"Corrected" Death-rates.*

IN THE LANCET of Jan. 21st, p. 189, Sir John Moore drew attention to a change in the classification of diseases recently adopted by the Registrars-General of the three divisions of the Kingdom. Another change has been made by the Registrar-General for Ireland in his weekly returns of births and deaths. Formerly the actual death-rate for the Dublin registration area was stated, in addition to a corrected rate which omitted the deaths in public institutions of persons admitted from without the area. The actual rate is now omitted, thus preventing a true comparison with former years, and unduly exaggerating the improvement in the state of public health in Dublin.

*Spiddal Water-supply.*

At a recent meeting of the Galway rural council a report was read from Mr. W. P. Kirwan, medical officer of health, concerning the water-supply of Spiddal, a seaside village near Galway. It stated that Spiddal was supplied from a river of peat water, into which dead animals were thrown, filling it with decaying matter. No wonder that Spiddal is a hot-bed of typhoid fever, to which disease more than one medical man has succumbed within the past ten years.

*Ballycastle Dispensary.*

Dr. Daniel Boylan was, on Jan. 24th, unanimously elected medical officer of the Ballycastle district at a salary of £155, rising by four increments of £7 10*s.* to £185, with registration and vaccination fees, and also £20 as medical officer of health. Dr. James McIlroy, the retiring dispensary medical officer, who has had 43 years' service (21 of them at Castlequarter), was granted, subject to the approval of the Local Government Board, a retiring annual allowance of £135.

*The Queen's University of Belfast.*

At a mass meeting of students of Queen's University, Belfast, on Jan. 25th, resolutions were unanimously passed urging that the time has come for the acquisition of athletic grounds, and appealing to the sympathetic consideration of the Senate. About four years ago the students, aided by their friends and by the citizens, raised £5000 for the purchase of an athletic field, but since then nothing definite has resulted. Inasmuch as just now the various committees of the Senate are planning innovations and improvements in building equipment, &c., in connexion with the University, a deputation of students was appointed to wait upon a joint finance and athletic field committee of the Senate.

*Forster Green Hospital for Consumption.*

At the fifteenth annual meeting of the friends of this hospital on Jan. 26th it was reported that 269 patients (38 more than in the previous year) had been admitted during 1910, but the average duration (12 weeks) of their treatment was rather shorter. Including those remaining from last year, 337 cases were treated during the year. Twice as many cases in the incipient stage were admitted during 1910 as in 1909. The medical staff report two grave defects: First, the admission of advanced cases which, after a time, go home, where they are a source of danger, to die; and, secondly, that patients who have greatly advanced on the road to recovery are compelled to leave and return to work, whereby many of them relapse.

*Memorial to the late Dr. W. B. McQuitty.*

A very largely attended meeting—all classes in the community being represented—was held in the City Hall, Belfast, on Jan. 26th, for the purpose of considering the best means of perpetuating the memory of the late Dr. W. B. McQuitty. The Lord Mayor (Mr. R. J. McMordie, M.P.) presided. On the motion of Sir John Byers, seconded by Mr. James Davidson, chairman of the board of management of the Royal Victoria Hospital, and supported by Sir Peter O'Connell, D.L., President of the Ulster Medical Society, it was unanimously resolved that there should be a memorial to the late Dr. McQuitty. Dr. J. J. Adams, J.P. (coroner for East Antrim) moved, and Mr. J. McAlery seconded, the appointment of a representative committee to carry out the object of the memorial, with Mr. J. G. Turner, Northern Bank, Belfast, as treasurer, and Dr. John Campbell, Dr. W. M. Killen, and Mr. C. J. Milligan as secretaries. The memorial will probably take the form of a scholarship in clinical medicine at the Royal Victoria Hospital, with which Dr. McQuitty was so long associated.

*The Union Workhouse, Belfast.*

From the report of the inspectors of the Local Government Board on the Belfast Union Workhouse, which has just been published, it is satisfactory to find that in the Belfast Workhouse and in the Whiteabbey Sanatorium the total number of inmates—3437—was smaller last year than for more than six years past, due largely to trade improvement in Belfast. The inspectors think that the children in the workhouse, though well looked after, would be more likely to become useful members of society if removed from the atmosphere and associations of a large mixed workhouse; also that the guardians should weigh the wisdom of allowing expenditure on out-door relief to continue increasing at the high rate of the past five years. At Whiteabbey Sanatorium, the inspectors say, "everything possible is done by the Abbey staff to promote the well-being of the patients."

Jan. 31st.

DEATH OF A GLOUCESTERSHIRE CENTENARIAN.—Mrs. E. Parnell of Olveston, who recently attained the age of 100 years, died on Jan. 26th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Hygienic Dwellings.*

AT a recent meeting of the Society for Social Medicine Dr. Flesch, a town councillor of Frankfort, communicated an interesting report on the dwellings built by the society for the better housing of the working classes. He said that since the year 1891 the society had provided accommodation for 5617 persons in 1201 houses. The house-rent was from 25 to 30 per cent. less than in private houses. Each block had a hall for the general use of the residents, a reading-room, a library, playgrounds for children, and a crèche. Coals and several kinds of provisions, including potatoes, were kept in store by the society, and the tenants were allowed to buy those articles at wholesale prices, the society making no profit out of the sale. By a mensual contribution of about 3½*d.* the tenants became entitled to the services of a trained nurse in cases of sickness or lying-in, only a penny (10 pfennig) a day being then charged for nursing. The house-rent must be paid in advance, or otherwise the society had the right to give the defaulting tenant notice to quit, and the same was the case when a joint application was made by several tenants to the effect that a certain individual should not be allowed to remain. Special medical interest attached to the fact that the mortality of the tenants was considerably less than that of the general population of the city; during the past 11 years for which the society has worked the general mortality of Frankfort had decreased by 3 per cent., and that of the tenants of the society's houses by 6 per cent. It might be supposed that this was due to the better financial position of the tenants, who did not belong to the poorest classes of the community but rather to the general working population; it was, however, remarkable that when a new block was opened the mortality of the incoming tenants was at first greater than it afterwards became when they had lived for some time in their new quarters. The good hygienic conditions of the society's houses seemed, therefore, to have a good influence on the mortality. The principal decreases of the death-rate were under the heading of tuberculosis, in which it was 1·85 per 1000 as compared with 2·15 per 1000 in the city, and under the heading of infantile diarrhœa, in which it was 0·95 per 1000 as compared with 1·55 per 1000 in the city. The lower death-rate was caused firstly by the good hygienic condition of the society's buildings, and secondly by the low rent, as the money saved in this way was spent on better food. Another good effect of this economical housing was that mothers did not require to go out to work and were therefore able to give more attention to their children. In conclusion, the speaker said that the erection of cheap and wholesome dwellings was one of the pillars of modern hygiene.

*Pyrexia in Malignant Growths of the Kidneys.*

At a meeting of the Berlin Surgical Society Professor Israel read a paper on the occurrence of pyrexia in patients suffering from malignant growths of the kidneys and the suprarenal capsules. He said that this symptom had hitherto been rather neglected by observers, but that it was not so rare as had been supposed. Of 146 cases of malignant growths of the above organs operated on by him, 12—i.e., 8·2 per cent.—were associated with pyrexia. It was essential to be aware of this fact in order to avoid errors in diagnosis; he mentioned a case in which a malignant growth attended with pyrexia was supposed to be a spleen enlarged by malaria; in another case which he quoted the high temperature was attributed to latent pulmonary tuberculosis, and the patient was sent to a sanatorium. The pyrexia might occur at different stages of the disease; it might be present in the initial stage either simultaneously with the first symptom of the growth or even before such symptoms have become obvious. In some cases it made its appearance together with other symptoms at any stage of the disease, and in a third category it was observed only in the last stage where cachexia and metastases were present. The pyrexia might be of either the remittent or the intermittent type, and might occasionally last for several months. Sometimes it resembled relapsing fever and sometimes it was in association with hæmaturia, either preceding or following it. Professor

Israel also discussed the influence which an operation performed for the malignant growth might have on the pyrexia. He quoted 12 cases, but excluded five of them from the computation, because in two there was no pyrexia at the time of the operation and three of the patients died a short time afterwards. Among the remaining seven cases there were five in which no pyrexia occurred after the operation, whilst in two the patient's state was the same as before. In the latter two cases the operations were incomplete, because in one of them the growth had partly penetrated into the vena cava, and in the other a cluster of glands in connexion with the large vessels had to be left behind. It must therefore be concluded that the pyrexia depended on the presence of the growth, and this view was supported by the fact that pyrexia sometimes occurred when metastases were developing, or in cases not operated on, when a tumour suddenly commenced to grow rapidly. The cause of the pyrexia was quite uncertain; it neither depended on the histological structure nor on the size of the tumour, but only on the degree of malignancy, and the prognosis of a growth associated with pyrexia was, as a rule, decidedly unfavourable.

Jan. 30th.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

*Arsenobenzol (Salvarsan) in Hungary.*

As soon as it became known in Hungary that Professor Ehrlich had introduced a new remedy for syphilis large numbers of medical men travelled to Frankfort for the purpose of seeing him in his laboratory and congratulating him warmly. From Frankfort they went to Berlin to see Professor Wechselmann, who was the first to adopt the treatment of syphilis with arsenobenzol, and when they returned home the daily newspapers, which had in the meantime been publishing long accounts of marvellous recoveries obtained with the new treatment, turned them into heroes. When these gentlemen resumed practice after their visit to Germany they were offered high fees by patients—some of them suffering from syphilis and some not—for injections of arsenobenzol. Several of the medical men took advantage of these offers and charged exorbitant sums for giving such injections, a course which has been very sharply criticised by the professional journals as a serious offence against medical etiquette. The pharmaceutical chemists, seeing how much the public were interested in the subject, also provided themselves with hundreds of doses of the new remedy when it was put on the market under the name of salvarsan, about 25,000 doses being ordered for the whole of Hungary. It was therefore not surprising that the medical journals were offered far more articles than they could possibly publish, all containing in some form or other "personal experiences with Ehrlich's remedy." Among those who took up the matter from a scientific point of view, Professor Jörök, Professor Havas, Professor Selley, and Dr. Spatz, surgeon-major in the Hungarian National Army, were prominent. Professor Emile Grosz was the first among the investigators who called the attention of the profession and also that of Professor Ehrlich himself to the danger of dissolving arsenobenzol in methylated spirit. Shortly before the discovery of arsenobenzol Professor Grosz had even written a long memoir on the harmful action of methylated spirit on the optic nerve in connexion with the numerous cases of poisoning in Hungary with methylated spirit. At present the majority of practitioners use the neutral suspension method and are administering the drug subcutaneously according to the instructions of Professor Wechselmann. In hospitals the intravenous method is also employed. As for the results in general, articles which were not very loud in praise of arsenobenzol were published as far back as September, 1910. Even one of Ehrlich's most ardent followers ventured to say that he was so little impressed with the efficaciousness of arsenobenzol that he was ordering his patients to continue inunctions with grey ointment. Since the introduction of salvarsan the conviction has become wider that Ehrlich's remedy is not at all superior to either mercury or iodine. Some say that it is to be administered only in malignant cases, and in cases for which mercury is of no use, but these cases are fortunately very scarce. Some days ago Dr. Fekete Gábor published an article embodying several objections to salvarsan arranged under the following heads. 1. First of all, he says that it is uncommonly dear. As its manufacture is neither complicated nor difficult he cannot comprehend why 12 kronen (10*s.*) are charged for it when similar amounts of preparations of that class are sold for 2 kronen or so. 2. The making of the suspension is imperfect and gives a great deal of work to the practitioner; sometimes it is very difficult to neutralise the solution accurately. In preparing the solution a good deal of the salvarsan is wasted because it adheres to the glass rod and to the glass or porcelain of the mortar. 3. Intramuscular and subcutaneous injections are painful, and intravenous injection is dangerous. The first two methods are liable to be followed by local infiltrations which last for six weeks or longer and may even not disappear at all; they may also turn into abscesses or necroses which are very difficult to heal, and have sometimes led to erosions which have had to be repaired by transplantation of skin. 4. The results of the treatment are not at all superior to those obtained with mercury, although he admits that lesions of the mucous membranes heal very quickly. It is only in cases where mercury is of no use and in cases of malignant syphilis that Dr. Fekete Gábor will resort to salvarsan. Another investigator has described some ill-effects of salvarsan. He says that in some of the cases under his care it worked liked a charm as regards lesions of the mucous membranes and the skin, but other symptoms, such as diseased conditions of the bones, the periosteum, and the central nervous system, were not very favourably influenced. In some cases he was induced to repeat the injection. The result was less than in the first instance. In his opinion this fact bears out Darwin's theory of adaptation, according to which the spores and the new generation of spirochætæ might be expected to adapt themselves to the germicidal properties of arsenobenzol and to become more resistant. In such cases the poisonous action of salvarsan might supervene and cause untoward symptoms. In the *Orvosok Lapja* of Jan. 14th Dr. Schmidt asks if syphilitic patients in the hospitals should be treated with arsenobenzol. In Hungary most general hospitals are maintained by the State, and the medical men are allowed to use only official remedies, and these only according to special hospital formularies, where the chief aim is economy as far as it does not affect the chances of the patient's recovery. If a medical man prescribes, either intentionally or from forgetfulness, medicines not included in that formulary then he has to pay their cost out of his own pocket. As salvarsan is not yet on the official list its administration in hospitals is prohibited. Dr. Schmidt maintains that the State would gain by the use of the salvarsan treatment for syphilis, basing his computation on the total number of days spent in the hospital by patients and on the cost of medicines used. He says that up to now a syphilitic patient spends on an average 40 days in the hospital, using 180 grammes of grey ointment and 12 doses of iodine solution, which cost the State about 90 kronen (75*s.*). In view of the fact that treatment with one dose of salvarsan, costing 10*s.*, takes only 20 days, the State would save about 40 kronen (32*s.*) on each individual. The whole of Dr. Schmidt's reckoning is, however, contradicted by Dr. Walko, who says that the arsenobenzol treatment does not render grey ointment and iodine superfluous, because the majority of medical men order the continuation of inunctions even if the patient was treated with salvarsan. Replying to Dr. Schmidt's statement that patients treated with salvarsan make only a short stay in hospital, Dr. Walko says that these patients may sooner or later come back to the hospitals for mercurial treatment just as if they had not been treated with salvarsan at all.

Jan. 23rd.

FIRE AT THE EALING ISOLATION HOSPITAL.—On the evening of Jan. 31st a fire broke out in the western portion of the north block of the Ealing isolation hospital. The roof of the building was entirely destroyed and the other parts of the building were much damaged by smoke and water. The children in the wards were taken to a place of safety, prompt action being shown by the staff in removing the children.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

*The Cholera Epidemic.*

NO case of death from cholera has latterly occurred either among the general public or among the soldiers garrisoned in the city. This, at least, is the official report appearing in all the local newspapers. Whether it is true seems to be doubtful. People in Constantinople are generally afraid to give to the medical authorities notice of a cholera case, making every possible attempt to keep the matter secret. The public here are under the impression, in the majority of instances, that the municipal physicians only aggravate the situation by their unskilful meddling and exaggerated measures of precaution. In some quarters, and that not altogether among the lower classes, there actually exists a belief that it is in the interest of the medical authorities to poison suspected cases in order so much the surer and the speedier to stamp out the epidemic. In these unfortunate circumstances it is quite likely that cases of cholera still occur, but the authorities are not aware of it. Thus, a medical man told me only the other day that he attended this week a genuine cholera case which did not appear in the official report. However this may be, the epidemic can be considered, to all intents and purposes, as having disappeared from Constantinople. But the Minister of the Interior has decided, in conjunction with the municipal and medical authorities, to continue for a long while yet, perhaps throughout the whole winter, all the prophylactic and precautionary measures which have been adopted from the very first. This is a laudable decision, and if consistently and strictly carried out might make it impossible for another cholera epidemic to reappear in the spring, as is the usual experience here with epidemics. The local newspapers speak in laudatory terms of the zeal and sagacity of Talaat Bey, the Minister of the Interior, who presides over the Sanitary Commission. He takes great personal interest in the hygienic well-being of the city. He visits the sources of water-supply to ascertain the state of the canals, as well as the sanitary condition of the aqueducts and lakes. Lately he made a little expedition of this sort, and found that the Dercos water, which supplies a large section of the metropolis, is quite unsuitable for drinking purposes. Necessary measures to improve matters are being taken. Talaat Bey has undoubtedly done very much to stem the progress of the epidemic of cholera. Cold, wintry weather prevailing at the moment when I am writing these lines renders its own great help to all the energetic human efforts.

*Hospital Steamboats.*

The Ottoman Government has decided to purchase a number of hospital steamboats for the transport of soldiers when ill. These steamboats will have all the necessary requisites for an up-to-date medical service. Each will possess a dispensary, bath-rooms, ice factory, wards, &c. Their displacement will be 2000 tons and they will be able to attain great speed.

*New Slaughter-houses.*

I understand that the municipality of the city intends purchasing the free part of the quarter Koutchouk-Vlanga in Stamboul in order to construct a number of spacious slaughter-houses. These will be equipped with all the necessary requisites, will possess a chemical laboratory, a special cabinet for veterinary surgeons, a reservoir for the collection of the blood of the slaughtered animals, depôts for straw and grass, a restaurant, and a coffee-house. It has long been felt that proper slaughter-houses were the great need of a city, where about 2,000,000 cattle are killed annually.

*A New Asylum.*

The *Osmanischer Lloyd* announces that the condition of the asylum for insane people at Scutari being very unsatisfactory, it has been decided to erect a new institution of that kind in San-Stephano. A sum of 50,000 Turkish liras was originally asked for the purpose. This sum, however, has been found insufficient. It is thought that it will require £T120,000 in order to build an asylum of the proper dimensions and with the necessary equipment. To facilitate matters, £T20,000 will be allowed annually from the municipal budget. The plans of the buildings are ready and have lately been submitted for examination to the Council of State.

*Disastrous Earthquakes in Turkestan.*

Distressing details have come from Vernyi, Turkestan, of the disastrous earthquake that lately visited that unhappy Russian province. It lasted for five minutes, and the first violent shock was followed by several others of lesser violence. This earthquake is one of the most calamitous that ever befell Russia. The full extent of the terrible destruction is not yet exactly known. Some idea, however, can already be formed of the enormous loss of human life, of property, and of cattle. Up to now, so say the local newspapers, more than 2000 dead bodies have been found and many hundreds are missing. Some say that the number of the last amounts to 10,000. Many thousands of different cattle, the principal possession of the native population, perished in the earthquake, and a far greater number became victims of the extraordinarily cold weather that was prevailing at the time, of hunger, and of the snow-storms. Many rich families became beggars, many camped in the snow-covered fields, the temperature being about 30° C. below zero, and the death-roll will be heavy if help is not forthcoming. Mothers are unable to feed their children, and the mortality among the latter is appalling. The Russian Government is doing its best to alleviate the crying misery, but its means seem to be limited, for it would be necessary, to begin with, to construct some 100 villages and to purchase cattle for thousands of families. The Tsar has shown great sympathy for the stricken population, mostly Mahomedans, and has sent a large sum from his private purse, and the Tsarina has opened a list of subscriptions. Every offer is gladly accepted—money, clothing, building material of every description, petroleum, flour, &c. Twenty-three years ago Turkestan was visited by a somewhat similar earthquake, but it was not of such a calamitous extent. Help this time is also being sent from different parts of the Turkish Empire.

Jan. 24th.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*The "Johns Hopkins Idea" in New York Medical Institutions.*

A PLAN to unite the faculty of medicine of Columbia University and the Presbyterian Hospital of New York city has been under consideration for some time, it being proposed to create the same relationship between these institutions as exists between Johns Hopkins University and Johns Hopkins Hospital, Baltimore, Md., with which Professor William Osler was so long connected. This linking of the University with the hospital and the medical school seems to be in the air, for there was recorded in THE LANCET of June 11th, 1910, that the Washington University in that city was, in pursuance of the same idea, to have its own hospitals with the necessary laboratories adjacent thereto. The donation of £300,000 from an anonymous source will certainly hasten the consummation of this union in New York also. The gentleman who acted as intermediary between the anonymous philanthropist and the two institutions has himself offered the sum of £40,000 in addition, and has furthermore proposed to endow and fully equip a surgical pavilion of 150 beds. It is understood that the University, in return for the privilege of making all nominations to the hospital staff, shall meet the expense of all scientific and educational work associated with the hospital. Each institution will maintain its own corporate existence. Those who are appointed as visiting physicians and surgeons to the new hospital will be expected not to occupy similar positions elsewhere. The Presbyterian Hospital had already made plans to build an extension which will adjoin the Rockefeller Institute for Pathological Research.

*Leprosy in the United States.*

Nine lepers were exhibited to the members of the Academy of Medicine on the evening of Dec. 29th, 1910. In an effort to dissipate the prevalent superstitious horror of this disease the nine patients, who included a negro girl, a male negro, an Italian with advanced tubercular leprosy, a Russian, and a Chinaman, were brought to the Academy in the public tramcars, coming from various remote suburbs of the city.

The general tone of the meeting deprecated the hysteria which has arisen through popular ignorance whenever leprosy has come up for public discussion in the United States. Dr. C. W. Duval, of Tulane University, New Orleans, La., who was the first to grow the bacillus lepræ in culture media, described his experiments and what he expected to accomplish with serums in producing immunity. He said that experiments with Japanese mice and other animals showed that the disease was certainly infectious by contact.

*Unauthorised Necropsies.*

Two physicians of Long Island City, a part of the greater city of New York, were recently sued for £2000 damages for performing an unauthorised necropsy on the body of a widow, said to have died from gangrenous perityphlitis. The suit was brought by the children of the deceased and the jury awarded £1600 damages, the action being undefended. This is the first case of the kind ever tried in the United States.

*Abuse of Charity.*

According to the findings of the subcommittee on charities of the Congestion of Population Commission at least one in every nine persons resident in New York receives annual assistance from charity. 176 societies furnish food, fuel, clothing, and general relief; there are 92 fresh-air charities, 89 societies for the relief of foreigners, 56 for the care of the sick in their homes, 571 societies for other kinds of home relief, 132 to provide relief for destitute or neglected children, and 69 institutions for the defective adults. The object of charity winds up in the hands of one of 12 burial societies. All these societies work apart from some 600 churches, which have their own charitable organisations, and none of the numerous hospitals are included in the foregoing list. Most of these societies have property exempt from taxation and distribute their funds without control by the State, the latter confining its inspections to the few State subsidised organisations. Some 500,000 persons—i.e., as already stated, about one resident in nine—enjoy annually the ministrations of these sometimes unwise and over-liberal associations. The total amount spent annually, exclusive altogether, be it remembered, of what is disbursed in strictly medical relief, is over £7,000,000.

*Antivivisection Tactics.*

The New York State branch of the Society for the Prevention of Cruelty to Animals is about to urge an investigation by the State authorities into the various institutes for pathological research. The object is to obtain the privilege of free and unannounced entry into the laboratories, obviously for the purpose of getting material for absurd and misleading "literature."

Jan. 24th.

## NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

*A Health Department for South Africa.*

DURING the past month in South Africa the value of proper organisation in the profession has been demonstrated. As indicated in previous communications, for some months past efforts have been made to induce the Government to recognise the importance of public health and the necessity for having a properly equipped health department for South Africa. These efforts, however, did not meet with success, but the agitation was continued, and at length came to a head in Parliament. On Dec. 7th Dr. J. C. McNeillie, member for Boksburg, formally moved in the House of Assembly that the Government be requested to consider the advisability of the appointment of a Minister of the Crown with the portfolio of Public Health. In his speech he reviewed the position of the country from a public health standpoint, detailing at length the circumstances leading up to the agitation which was being carried on by medical men throughout the length and breadth of South Africa. Dr. A. C. Neethling, member for Beaufort West, followed, and stated that as a member of the Government party he concurred in what had been said, but, while he considered that eventually a definite portfolio of Public Health would have to be created, he thought perhaps that the profession was asking for too much at present, and he therefore moved an amendment requesting the Government to consider the advisability of creating a proper health department for South Africa under the direct control of a chief medical officer. A long debate ensued in which most of the medical and several lay members took part. The actions of the Government were somewhat freely criticised from all quarters of the House, and eventually the debate was adjourned until the following week. On the 13th the matter was again raised when the estimates were under discussion, and again there was a further debate. In this the Right Hon. J. X. Merriman, ex-Prime Minister of Cape Colony, took the leading part, and in reply to the Minister for the Interior, who had expressed doubts as to the value of the work done by the late Cape Health Department, he warmly defended this department, emphasising the administrative ability and zeal of Dr. A. J. Gregory, its chief medical officer, who was now, he stated, in the extraordinary position of being subordinate to his former clerks. Eventually the Minister for the Interior stated that he held very strong views that medical men should not take any part in administration, but he was prepared carefully to reconsider the whole matter, and in any case he would promise in due course to establish a department of public health and to appoint a chief medical officer. While declaring that he was convinced that the larger issues of public health should remain under the Union, he thought that it would be necessary to appoint provincial medical officers of health, and possibly to delegate to the provincial councils the dealing with all smaller and local health matters. On this the matter dropped, but the discussion on the adjourned motion was resumed the following evening, when in view of the Minister's promise the night before the amendment proposed by Dr. Neethling was formally agreed to. The department, it is hoped, will be charged with the dealing with, *inter alia*, all infectious and dangerous diseases, port health, vital statistics, leper asylums, mines, and the health of labourers on the mines. It is hoped, also, that it will undertake investigation and research into the numerous diseases peculiar to the country, and administer the bacteriological and chemical laboratories, other than those engaged solely in veterinary or agricultural work. It should control district surgeons. It might also be conveniently charged with all general medical work, such as the administration of the lunacy laws and the Medical Acts. Some anxiety is felt lest a department in name only should be established, with a chief medical officer without any administrative functions whatever, and the profession in South Africa is therefore anxiously awaiting developments.

*The Segregation of Lepers.*

A debate of some importance took place on Dec. 13th on the subject of leprosy, when a motion was moved in the House of Assembly praying for the removal of the Robben Island lepers to the mainland. This question is one which has been constantly brought forward in the late Cape Parliament, and has been the subject of a large number of commissions of inquiry and select committees. These have brought in the most divergent reports, but generally to the effect that the advantages of the island as a leper settlement considerably outweigh its disadvantages. The result has been to lead to chronic unrest amongst the lepers, a condition which has apparently been aggravated by lay administration. Dr. D. B. Hewat, member for Woodstock, stated in connexion with the motion that he had grave doubts whether leprosy, or at any rate anæsthetic leprosy, was contagious or infectious at all, and he pleaded for a commission of experts to go into the whole question afresh. A number of other members took part in the discussion and very divergent opinions were expressed. General Smuts, in reply, stated that the whole question must be sympathetically treated by the Government. The State had to be very careful to segregate lepers in the interests of the general community. He knew that there were matters to complain of at Robben Island. It would be impossible to administer a settlement of this sort without complaints. The Transvaal Leper Asylum, with which he was personally acquainted, was, he considered, one of the best in the world, and yet he had complaints from this asylum. He expressed his conviction that even if the patients from Robben Island were removed to the mainland, that would not stop agitation for release from segregation by the lepers. The line drawn in South Africa was, he considered, a safe one; the matter was very largely left in the hands of their experts. If a case was considered by

their experts suitable for segregation at home, then the patient was permitted under certain conditions to live at home, but, if not, then removal to an asylum was necessary. He thought that discussions on leprosy in the House could only lead to further agitation amongst the lepers, and he therefore deprecated the matter having been brought forward. He thought that the Government should vigorously encourage the prosecution of research on leprosy. The Cape Government had appointed a bacteriologist for leprosy research on the island, and this gentleman was doing good work. The present Government was trying in addition to persuade Dr. G. Turner, formerly medical officer of health of the Transvaal, and one of the greatest experts on leprosy in the world, to return to South Africa. It was, in his opinion, useless having commissions on leprosy, but he quite agreed that they should endeavour to advance their knowledge of the disease by employing trained medical men to undertake research work at existing asylums. With this the debate ended. It is, I think, fully recognised by most medical men that there are drawbacks from a medical point of view to Robben Island as a leper settlement, but these drawbacks are mostly capable of being remedied. Moreover, the leper inhabitants on the island are not confined to small areas, but are able to roam at will over practically its whole extent. Although it has often been represented that Robben Island is unsuitable, and that its leper inhabitants will never be contented until removed to the mainland, it is of interest to note that when the Government of the Orange River Colony in 1908 or 1909 formed a leper settlement in that colony, and arranged for the withdrawal of its lepers from Robben Island, a large number of these lepers are stated to have strongly objected, on the grounds that they were well aware that they enjoyed greater freedom and lived under happier conditions than would be possible if settled inland in their own State.

*Memorial to the late King.*

Her Excellency the Viscountess Gladstone is, it is understood, about to make an appeal to the public in South Africa for funds to establish a national memorial to his late Majesty King Edward VII. A few weeks ago a number of influential people were called to Government House, Cape Town, when, after discussing the proposal, the following resolutions were agreed to:—

1. That this meeting resolves that it is advisable to raise a national South African fund with the object of establishing a memorial to his late Majesty King Edward VII.
2. That a Provisional Committee be formed to consider the question of devoting the fund to the formation of a nursing association or some other scheme for the alleviation of human suffering, as to the estimated scope and requirements of such a project, what funds would appear to be needed for the various schemes, holding in view the permanent nature of the object, and generally to report.

It is believed that Her Excellency's own proposal is likely to be adopted—namely, the establishment of an order of trained nurses on the lines of those which have been instituted in India, Canada, and Australia. The nurses under such a scheme would be allocated to different districts and would be controlled by district committees composed of local representatives under the general supervision of a central committee, the expenses of maintenance being met partly by fees fixed as far as possible within the means of those requiring the attendance of the nurses, and partly from a central fund raised by public subscription. The alternative proposal is the establishment of one or more central sanatoriums for consumptives. There is no doubt of the need for a scheme for supplying district nurses to outlying villages in South Africa. Those of us who have been in practice in the smaller towns and villages up country know of the grave disabilities under which work has often to be done, owing to the lack of trained nursing assistance. In most up-country places medical men do not attend many midwifery cases except among the wealthier classes, and the majority of confinements are attended by coloured midwives, without training and generally of filthy habits. No wonder, therefore, that the amount of puerperal fever in this country is excessive. If the committee can devise a satisfactory scheme for supplying trained nurses and the scheme can be given effect to much good will result, not only directly, but indirectly, owing to the educative influences which would be at work with the advent of trained nurses into ignorant households—a truly national memorial to a great king.

Jan. 2nd.

# NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

*The Treatment of Snake-bite.*

IN July, 1909, the Madras Government requested the surgeon-general in charge of the Civil Medical Department of the presidency to submit proposals for bringing into more general use among the public the treatment of snake-bite with Sir Lauder Brunton's lancets and permanganate of potash. In October of the same year the Madras Government approved the surgeon-general's proposal to obtain 12,000 lancets for distribution among its subordinates and others in the presidency. The Hon. Surgeon-General P. H. Benson, I.M.S., in his first annual report on the subject, recently issued, describes 15 cases of snake-bite thus treated. He states no definite opinion can be formed as to the efficacy of the treatment until the total number of cases treated with the lancets is fairly large. The Government, in a covering memorandum on the report, considers that the information supplied regarding these cases is so incomplete as to make any deductions from it impossible. It is evident that if any useful information is to be obtained from the experiment further instructions are necessary. It is essential to any useful conclusion that the identity of the snake by which the bite was inflicted shall be authoritatively determined. Directions have accordingly been issued as to sending the snakes killed for identification to the superintendent of the Madras Museum.

*A New Hospital for Aundh State.*

The need of good hospitals is nowhere more felt than in the native States which are dependent on their own revenues for the erection and maintenance of dispensaries and such-like institutions. In the Aundh State there are at the present time only three dispensaries, situated at long distances from one another, and this fact has been early recognised by the present occupant of the *gadi*, Shrimant Bala Saheb, Pant Prathinian, who shortly after his installation, towards the close of 1909, sanctioned an estimate for the building of a hospital in the capital city, Aundh. At his invitation several European and native gentlemen recently witnessed the ceremony of laying the foundation-stone. A small camp has been laid out by Mr. Jussuff H. Jaffer of Poona, and the comfort of the guests during their brief stay was well looked after by him, and the State Karbhari, Khan Bahadur Jacob Bapuji. The ceremony of laying the foundation-stone of the institution was performed by Mr. Bonus, I.C.S., Collector of Satara and Political Agent of the Aundh State, before a large gathering assembled in a decorated *shamiana* on the building site, and before a large gathering of native officials and gentlemen of the State. The site selected is an elevated piece of ground (about four acres in extent) in the township of Aundh, and the building when completed is estimated to cost close on Rs. 40,000. It will be a stone structure 150 feet in length by 30 feet in breadth, of a single storey, and will be in charge of an Indian medical man, and is to be called "The King-Emperor Edward the Seventh Hospital."

*Sanitation in Kashmir.*

The cholera epidemic, which appeared in Srinagar and thence spread to other parts of Kashmir last summer, has again drawn attention to the insanitary condition of that otherwise charming country. Municipal scavengers under proper supervision would work wonders for the sanitation of Srinagar. The provision of a good supply of potable water would involve considerable expenditure, but improvement in the health of Srinagar largely depends on there being every year some extension of a water-pipe connexion into areas where at present the people depend for their drinking-supplies on all sorts of contaminated sources. Long years of misery and poverty have made the people lazy and indifferent, ready to follow blindly the insanitary practices of their fathers, but every additional hydrant helps to wean a certain number from their ancient customs and leads them to value the provision of a pure water-supply. As the City of London was freed from the visitations of plague by the Great Fire, which swept away thousands of crowded tenements and insanitary areas, so it is probable a great conflagration might not be an unmixed evil in many an eastern town. But

without such a drastic remedy in Srinagar there is much that can be done in the way of immediate improvement. To carry out all the obvious reforms nothing more is required than common-sense, energy, perseverance, and a sufficient supply of money. Expenditure under proper sanitary supervision would speedily repay itself. An epidemic such as that of last summer does more than merely carry off a thousand or so of valuable lives, it dislocates State administration, paralyses trade, and frightens away visitors, thereby depriving the State of the very large sums annually spent in the country. For this reason the improvement of sanitation in the capital town of the State of Kashmir is a work which should commend itself to the authorities as urgently necessary and economically sound. The appointment of a suitably qualified medical officer of health such as is being done in the larger towns in India might well repay the State.

*The Prevention of Malarial Fevers.*

The Lieutenant-Governor of Bengal has appointed a Provincial Malaria Committee composed as follows: President, the Executive Member of Council in the Municipal (Medical) Department, the two secretaries in the Public Works Department, Major Leonard Rogers, I.M.S., Assistant Surgeon U. N. Bramachari (Teacher of Medicine, Campbell Medical School), Dr. Nil Ratan Sircar, and the Sanitary Commissioner of Bengal (secretary). It is hoped that by the appointment of this committee the inquiries regarding malaria will be conducted on more systematic lines than hitherto has been the case, and a coördination will be secured with the lines of prevention taking place in other parts of India.

Jan. 12th.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

*Peculiar Poisoning Case.*

A REMARKABLE case of poisoning has occurred at Prahran, an industrial suburb of Melbourne. A family, consisting of a mother and three daughters, partook of a meal which comprised ham sandwiches, tinned tongue, cucumber, and ice-cream. Shortly afterwards the mother and two of the daughters were taken violently ill. One girl died within 24 hours and the second was removed to the Alfred Hospital, where she also died a few days later. The cases were regarded as ptomaine poisoning, and although a magisterial inquiry was held after the second death the magistrate decided that no necropsy was necessary. A day or two later the mother, who had been under treatment by Dr. C. A. Altmann, also died suddenly after having apparently convalesced. Dr. Altmann refused a certificate and insisted on a necropsy, which was made by Dr. Crawford Mollison, who discovered large quantities of arsenic in the body. The bodies of the two girls were thereupon exhumed, and it is stated that arsenic has also been found in each body. The third sister now stands charged with the murder of her mother, the police having found that this daughter purchased arsenic from a local chemist for the alleged purpose of destroying rats. The case has been adjourned pending the completion of the coroner's inquiry.

*Medical Inspection of Schools.*

The first report of the inspection of Victorian State school children has been issued. Under an outline scheme in the report it is proposed that each child shall be examined four times during its school career, or once in two years. There are 90,000 children in urban areas, and these will be first dealt with. An estimate is made of 34,000 yearly examinations, which will entail six extra inspectors in addition to the three at present acting. It is recommended that they be paid £400 each per annum. Eight part-time officers at £50 each per year are also recommended. The present report deals with about 3000 children. The examiners say: "The marked prevalence of certain defects has been very evident, but no less evident has been the rarity of other well-known defects—for example, tuberculous glands in the neck, trachoma, skin diseases generally, and special deformities such as club-foot, hare-lip, and infantile paralysis. There has been a relatively small number of children giving a history of scarlet fever, diphtheria, or rheumatism." As regards defective vision, 6·8 per cent. are stated to have shown gross defect and 10·5 per cent. slight defect. Hearing showed 8·5 per cent. with gross defect and 10·5 per cent. with slight. Nine per cent. of boys and 6 per cent. of girls showed under-nutrition; 13·5 per cent. of girls but no boys showed over-nutrition.

*Radium.*

The Treasurer of Victoria has obtained from Dr. B. B. Ham, chairman of the Board of Health, a report on radium, and the advisability of making a supply available for medical men. Mr. Watt states the Government will take up any feasible scheme that may be presented for such a purpose.

*Early Closing for Pharmaceutical Chemists.*

An early closing movement for chemists has been mooted in New South Wales, under which it is proposed that only urgent prescriptions shall be dispensed after hours. The proposal has not yet assumed definite shape, but some medical men in club practice consider that their work would also be lightened by an earlier closing of chemists' shops. The usual hour at present is 9 P.M.

*Obituary.*

The death is announced of Dr. Mary Page Stone in very sad circumstances. The late Dr. Stone was visiting a patient on her bicycle and collided with a dray, being thrown violently to the ground. At first her injuries did not appear serious, but she collapsed suddenly and died from internal hæmorrhage about 12 hours after the accident. Dr. Stone was a graduate of the University of Melbourne with a distinguished record, and had a large private practice. She was also a prominent member of various philanthropic and educational movements, particularly as regards the education of women.

Dec. 20th, 1910.

# Obituary.

## FREDERICK MELLAND, M.R.C.S. ENG., L.S.A.

BY the death of Mr. Frederick Melland the medical profession in Manchester has lost its oldest link with the past. He was born at Alport in Derbyshire in 1818, and had nearly completed his ninety-third year at the time of his death on Jan. 17th. He died at his house in Victoria Park, Rusholme, in which neighbourhood he had lived during almost the whole of his active medical life. The old system of apprenticeship was, of course, in existence in his early days, and he began his career as an apprentice in Sheffield, going to Manchester to complete his studies. He passed the examination of the Society of Apothecaries, the "Hall," as it used to be called, in 1840, and the Royal College of Surgeons of England, in 1841. After being for a time one of the resident officers at the Royal Infirmary, he settled down to a long and honourable career of general practice, from which he retired only about ten years ago. He was greatly respected by a wide circle of patients and friends for his genial, kindly disposition and loyalty, and attracted and impressed those with whom he had social or professional relations. His own practice did not, however, absorb all his energies, for he was connected with the Chorlton Dispensary and the Ancoats Hospital for many years. When any man lives to his ninety-third year it is not surprising to hear that he was a man of fine physique and activity. Only a few months ago he went to London to be present at the wedding of his grandson, Mr. Herbert Asquith, the second son of the Prime Minister, for, in 1877, the Prime Minister married Mr. Melland's eldest daughter as his first wife. Mr. Melland was for 46 years district medical officer to what is now known as the South Manchester Union, being appointed in 1850 and retiring in 1896. At their last meeting the guardians passed a vote of regret and condolence with Mr. Melland's family, and the chairman, Mr. Macfarlane, in the course of his remarks, said, "He was a worthy citizen and a man who was held in the highest respect in this city." Mr. Melland's chief recreations were travel and reading, and although a Nonconformist he took a great interest in church architecture. He has left a family of several sons and three daughters. Two of the sons are in the medical profession, one practising in Bowdon and the

other in Manchester. The funeral took place on Jan. 21st at the Manchester Crematorium.

GEORGE BIRT, M.B. LOND., M.R.C.S. ENG., L.S.A.

THE death is announced as occurring at Teignmouth on Jan. 25th of Dr. G. Birt, second son of the late Dr. T. Birt of Leamington, at the age of 64 years. He matriculated at the University of London and entered the Birmingham Medical School, whence he obtained the diplomas of M.R.C.S. and L.S.A. After being resident on the surgical side of the General Hospital, Birmingham, he continued his studies at University College, and graduated in medicine at the University of London, gaining honours in anatomy and organic chemistry. He settled in Stourbridge, and up to the time of his retirement was engaged in a widespread general practice in that district. He held the post of honorary surgeon to the Stourbridge Dispensary. "His strenuous life," writes one who knew him well, "which did not permit of relaxation, recreation, or even an annual holiday, began to imprint its mark in 1903. Glycosuria and signs of arterio-sclerosis made their appearance. With unabated courage he continued work, ignoring all danger signals. At length in 1908 the incessant strain, unrelieved by rest, overcame him. He retired to Teignmouth an invalid. Early in December last cardiac compensation began to fail, hydrothorax developed and required frequent paracentesis. Uræmia closed the scene."

Dr. Birt married in 1877 the daughter of the late Dr. Campbell of Stourbridge, by whom he is survived. He leaves a son and two daughters.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Willibald A. Nagel, professor of physiology in the University of Rostock, after a long illness. He published numerous researches and papers dealing especially with the physiology of the mind. His age was 40.—Dr. Johann Csocor of Mödling, professor in the veterinary school and *docent* in the Vienna University Medical Faculty, aged 67.—Dr. Willis Goss Macdonald, professor of surgery in Albany Medical College.—Dr. Lesouef, formerly Member of the French Senate.—Dr. Hocquart, inspecting medical officer of the French army.—Dr. Alban de la Garde, formerly professor of pathology in the Poitiers Medical School.

# Medical News.

UNIVERSITY OF LIVERPOOL.—At the examination for the Diploma in Public Health held recently the following candidates were successful:—

J. Green, S. M. Green, Blanche M. Z. Johnston, W. W. Mackarell, S. P. Mort, and J. F. Whelan.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Adolf Gutmann has been recognised as *privat-docent* of Ophthalmology and Dr. Hermann Beyer as *privat-docent* of Otology.—*Bologna:* Dr. A. Codivilla has been appointed Extraordinary Professor of Orthopædic Surgery.—*Buenos Aires:* Dr. Ricardo S. Gómez has been appointed to the chair of Descriptive Anatomy and Dr. Daniel J. Cranwell to that of External Pathology.—*Cagliari:* Dr. Giovanni Mandri has been recognised as *privat-docent* of Medicine.—*Heidelberg:* Dr. Moro of Munich has been offered the position of Extraordinary Professor of Children's Diseases and Director of the University Children's Clinic, in succession to Dr. Feer.—*Marburg:* Dr. M. Matthes, Director of the Academical Clinical Institutions in Cologne, has been appointed Professor of Medicine and Director of the Medical Clinic and Polyclinic, in succession to Professor Brauer, who is going to Hamburg.—*Rostock:* Dr. Karl Walter has been recognised as *privat docent* of Anatomy.—*Vienna:* Dr. Lothar v. Frankl Hochwart has been appointed Extraordinary Professor of Neurology, and Dr. Karl Landsteiner, Extraordinary Professor of Pathological Anatomy. The title of Professor has been granted to Dr. Rudolf Frank, *privat-docent* of Surgery; Dr. Alois Strasser, *privat-docent* of Hydrotherapy; Dr. Hans Koschier, *privat-docent* of Laryngology; Dr. Gustav Singer, *privat-docent* of Medicine; Dr. Josef Adolf Hirschl, *privat-docent* of Psychiatry; Dr. Ludwig Braun, *privat-docent* of Medicine; Dr. Karl Biehl, *privat-docent* of Otology; Dr. Wilhelm Lalzko, *privat-docent* of Gynæcology; Dr. Emil Raimann, *privat-docent* of Psychiatry; Dr. Julius Schottländer, *privat-docent* of Gynæcology; and Dr. Ernst Pick, Adjunct in the Institute of Serotherapy.

SLEEPING SICKNESS IN RHODESIA.—We understand that a special commission will be appointed by the British South Africa Company to investigate the share taken by the Glossina palpalis and morsitans in the transmission of sleeping sickness in Rhodesia. The commission, it is stated, will consist of Dr. Aylmer W. May of Northern Rhodesia, Dr. A. Kinghorn of Liverpool, Mr. H. Leach of Northern Rhodesia, Mr. O. Silverlock, entomologist, and Mr. Jollyman, bacteriologist.

FORTIETH CONGRESS OF THE GERMAN SURGICAL SOCIETY.—This Congress will take place from April 19th to 22nd, 1911, in Berlin (Langenbeckhaus, Ziegelstrasse, 10 and 11). The proceedings commence on April 19th at 10 A.M., with a celebration of the centenary of B. R. K. Langenbeck's birth. Sessions during the Congress will be held from 9.30 A.M. to 12.30 P.M., and from 2 to 4 P.M. The chief papers to be presented are the following: Free Transplantations, by Herr Lexer; The Disinfection of the Hands and of the Site of Operation, by Herr Küttner; Basedow's Disease, by Herr Kocher; and Cæcum Mobile, by Herr Wilms. These will be followed by papers upon Intravenous Narcosis, Duodenal Ulcer, and the Treatment of Varicose Veins. Dr. L. Rehn, Zimmerweg, 16, Frankfort a.M., is the President. Tickets of membership can be obtained up to April 10th from Herr Melzer, Ziegelstrasse, 10 and 11, Berlin, N. 24.

ARRANGEMENTS FOR CASES OF MEASLES BY THE SOUTHWARK GUARDIANS.—At the meeting of the Southwark board of guardians held on Jan. 12th a report was considered from Dr. H. W. Bruce, the medical superintendent at the infirmary, with reference to the transference of children suffering from measles to one of the fever hospitals of the Metropolitan Asylums Board. Dr. Bruce was strongly of the opinion that the transference of cases of measles, especially in winter, was fraught with great risk to the children, and it appeared to him that if all cases of measles were transferred to a fever hospital a considerable and unnecessary sacrifice of children's lives would be brought about. The children's committee reported that the proposal of the Metropolitan Asylums Board to receive children from the infirmary suffering from measles would not afford any reasonable possibility of reducing the congestion at the infirmary, owing to the fact that a medical certificate of three weeks' observation would be required, and in view of the medical superintendent's statements the committee urged that the Metropolitan Asylums Board be asked to use their vacant accommodation for children suffering from ophthalmia. Mr. T. Cornell said that the proposals of the Asylums Board were misunderstood. They did not propose that cases of measles should be first taken to the infirmary and then transferred to hospital. What was intended, and what was already being carried out in many parts of London, was that the poor cases of measles, for which an admission order to the infirmary had hitherto been given, should be removed direct from their homes to the nearest hospital of the Board, and that no medical certificate of three weeks' observation would be required. The present proposals were first put forward by the Local Government Board. They had been carefully considered by the Asylums Board in the light of experience throughout the country, including that of Edinburgh, Glasgow, and Liverpool, where permanent isolation accommodation was provided in infectious hospitals for cases of measles, and where it had been proved beyond question that measles could be safely treated in the same hospital as other infectious fevers. The Asylums Board had made the provision and it was being generally utilised. It was for the Southwark guardians to say whether they would take advantage of the opportunities offered for the benefit of children for whom they were responsible. The suggestion that children otherwise healthy who were suffering from ophthalmia should be taken into fever hospitals was quite impracticable. After

hearing Mr. Cornell's explanation, the board decided to send cases of measles to the institutions of the Metropolitan Asylums Board.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The Charter Day dinner will take place on Saturday, Feb. 11th. His Excellency the Lord Lieutenant has graciously accepted the invitation of the President and Fellows to be present at the dinner.

A PLYMOUTH CENTENARIAN.—Mrs. A. Moore of Plymouth celebrated the anniversary of her 100th birthday on Jan. 19th. She was born near Bodmin, Cornwall, but has resided in Plymouth for the past 60 years.

LITERARY INTELLIGENCE.—Messrs. Rebman, Limited, will publish this month in Great Britain Major Paul P. Straub's "Medical Service in Campaign," which was reviewed by us in our issue of Jan. 7th. The price will be 6*s*. 6*d*. net.

Dr. W. T. Grenfell, C.M.G., Superintendent of the Royal National Mission to Deep Sea Fishermen, will deliver a public lecture in Queen's Hall, London, on Monday, Feb. 6th, at 8.30 P.M., entitled "Midst Ice and Snow in Labrador" (illustrated with lantern slides). The chair will be occupied by Sir Ernest Shackleton, C.V.O.

THE CARNEGIE HERO FUND.—Mr. Nelson Johnstone, L.R.C.P. & S. Edin., L.F.P.S. Glasg., who rendered assistance to Detective-Sergeant Leeson under a shower of bullets from the alien criminals who established themselves at the house in Sydney-street, Stepney, recently, has received a medallion and £25 from the trustees of the Carnegie Hero Fund.

THE METROPOLITAN HOSPITAL SUNDAY FUND.—At a meeting of the Metropolitan Hospital Sunday Fund, which was held under the presidency of the Lord Mayor at the Mansion House on Jan. 25th, the Rev. Prebendary Anderson was appointed a member of the distribution committee in place of the late Lord Stamford. The members of the general purposes committee and the finance committee were reappointed.

Dr. J. B. Yeoman, medical officer of the Wirral (Cheshire) union workhouse and of Heswall Sanatorium, has been appointed medical officer of health to the Wirral rural district council and six neighbouring urban district councils combining with it, at a salary of £500 a year for five years. The appointment is, of course, subject to the approval of the Local Government Board. The various district councils agree to contribute towards the medical officer's salary in proportion to their present rate assessments, the Wirral rural district council paying £179, the Hoylake and West Kirby urban district council £124, and the other urban district councils £83, £43, £29, £27, and £15 respectively. Dr. Yeoman is allowed to retain the workhouse and sanatorium appointments, but is required to give up his private practice and the union district and vaccination appointments which he holds, and to agree to accept no other public appointments without the consent of the combined councils.

ACTION FOR ALLEGED MEDICAL NEGLIGENCE.—In the Bow county court on Jan. 20th, before Judge Smyly, James John Darkins, a clerk, of Milton-avenue, East Ham, sued Mr. H. de B. Nelson, of Canning Town, for negligence. Mr. Medcalfe appeared for the plaintiff, and Mr. Matthew (on behalf of the London and Counties Medical Protection Society) for the defendant. Mr. Medcalfe said that the case was a serious one, involving the character and reputation of a medical man, but there was no desire on the part of the plaintiff to obtain damages for himself. He simply wanted the recoupment of extra expenses, amounting to between £40 and £50, caused, it was alleged, by the negligence of the defendant. During her confinement in March last the plaintiff's wife was attended by Mr. Nelson, and it was alleged that he left behind pieces of the placenta. After several attacks of hæmorrhage an operation was performed by another practitioner; septic poisoning set in and she died early in May. The allegation was that the defendant was negligent in his attendance and also in his treatment, consequent on which the plaintiff was involved in extra expense in engaging medical men and nurses. The plaintiff gave evidence in support of his counsel's statement. His honour, in summing up, directed the attention of the jury to a letter written by the plaintiff after his wife's death, in which he appealed to the generosity of the defendant to enable him to meet the debts which had been incurred in consequence of the illness. They had to say whether that was a letter which one man would write to another whom he believed to have been the cause of his wife's death. The jury returned a verdict for the defendant. Judgment was given accordingly, with costs.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Aids to Pathology. By Harry Campbell, M.D., B.S. Lond., F.R.C.P. Second edition. Price, cloth, 3*s*. 6*d*. net; paper, 3*s*. net.

BALE (JOHN), SONS, AND DANIELLSSON, LIMITED, London.

Modern Surgical Technique in its Relation to Operations and Wound-Treatment. By C. Yelverton Pearson, M.D., M.Ch., F.R.C.S. Second edition. Revised and enlarged. Price 10*s*. 6*d*. net.

BLACK, ADAM AND CHARLES, London.

An Introduction to Chemical Theory. By Alexander Scott. D.Sc. Edin., Sc.D. Camb., F.R.S. Second edition. Price 5*s*. net.

CHUNDRA, J. L., 5, Gopee Kristo Paul's Lane, Calcutta.

A Treatise on Treatment. Designed for the Use of Practitioners and Students of Medicine. By Jogender Lal Chundra, L.M.S. (Calcutta University). First edition. Price not stated.

CHURCHILL, J. AND A., London.

Allen's Commercial Organic Analysis. Volume IV. Fourth edition. Entirely rewritten. Edited by W. A. Davis, B.Sc., A.C.G.I., and Samuel S. Sadtler, S.B. Price 21*s*. net.

A Manual of Gynæcology. By Thomas Watts Eden, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Edin. Price 18*s*. net.

ÉCOLE DE MÉDECINE TROPICALE, Junqueira, Lisbon.

Archivos de Hygiene e Pathologia Exoticas. Publicação dirigida pela Escola de Medicina Tropical de Lisboa. Volume III. Fasciculo 1°. Publicado em 15 de Novembro de 1910. Price $1.

FISCHER, GUSTAV, Jena.

Plasma und Zelle. Eine Allgemeine Anatomie der lebendigen Masse. Bearbeitet von Prof. Dr. Martin Heidenhain in Tübingen. Zweite Lieferung: Die Kontraktile Substanz, die Nervöse Substanz, die Fadengerüstlehre und ihre Objektive. Price, paper, M.23; bound, M.24.50.

Untersuchungen über Rachitis und Osteomalacie. Von Friedrich von Recklinghausen, weiland Professor in Strassburg. (Atlas und Text.) Price M.60.

Über Geschwülste der hinteren Schädelgrube, insbesondere des Kleinhirnbrückenwinkels. Klinische und Anatomische Studien. Von Dr. Folke Henschen, Stockholm. Price M.10.

Lehrbuch der Chirurgie. Herausgegeben von Prof. Wullstein und Prof. Wilms. Zweite umgearbeitete Auflage. Dritter Band: Extremitäten. Price, paper, M.10.50; bound, M.11.50.

Operative Chirurgie der Harnwege. Normale Anatomie und Chirurgische Pathologische Anatomie. Von J. Albarran. (Paris.) Ins Deutsche übertragen von Dr. Emil Grunert. (Dresden.) Dritte Lieferung. Price M.9.50.

Die Morphologie der Missbildungen des Menschen und der Tiere. Unter Mitwirkung zahlreicher Fachgenossen. Herausgegeben von Dr. Ernst Schwalbe. (Rostock.) III. Teil. Die Einzelmissbildungen. IV. Lieferung. 2. Abteilung. 5 Kapitel. Die Missbildungen des Gebisses. Von H. Peckert. Price M.2. V. Lieferung. 2. Abteilung. 6. Kapitel. Die Missbildungen des Ohres. Von Hermann Marx. Price M.2.50.

Sammlung Anatomischer und Physiologischer Vorträge und Aufsätze. Herausgegeben von Prof. Dr. E. Gaupp und Prof. Dr. W. Nagel. Heft 13. Die Aeussern Formen des Menschlichen Körpers in ihrem allgemeinen Zustandekommen. Von Prof. Dr. E. Gaupp, Freiburg i.Br. Price not stated.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Text-book of Massage. By L. L. Despard, Member and Examiner, Incorporated Society of Trained Masseuses. Price 10*s*. 6*d*. net.

Handbook of the Surgery of the Kidneys. By W. Bruce Clarke, M.A., M.B. Oxon., F.R.C.S. Price 10*s*. 6*d*. net.

Diseases of the Spinal Cord. By R. T. Williamson, M.D. Lond., F.R.C.P. Second Impression. Price 15*s*. net.

HAZELL, WATSON, AND VINEY, LIMITED, London.

Hazell's Annual for 1911. Edited by Hammond Hall. Twenty sixt Year of Issue. Price 3*s*. 6*d*. net.

JACK, T. C. AND E. C., London and Edinburgh.

The Bacillus of Long Life: A Manual of the Preparation and Souring of Milk for Dietary Purposes. By Loudon M. Douglas, F.R.S.E. Price 5*s*. net.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)

An Anatomical and Surgical Study of Fractures of the Lower End of the Humerus. By Astley Paston Cooper Ashhurst, A.B., M.D., Prosector of Applied Anatomy in the University of Pennsylvania. The Samuel D. Gross Prize Essay of the Philadelphia Academy of Surgery, 1910. Price 14*s*. net.

LAURIE, WERNER, London.

With the Red Cross in the Franco-German War, A.D. 1870–1. Some Reminiscences by Henry Rundle, F.R.C.S., Consulting Surgeon to the Royal Portsmouth Hospital. With an Introductory Note by F. Howard Marsh, M.A., M.C. Cantab., F.R.C.S. Price 2*s.* 6*d.* net.

LEWIS, H. K., London.

Hygiene and Public Health. By Louis C. Parkes, M.D., D.P.H. Univ. of Lond., and Henry R. Kenwood, M.B., F.R.S. Edin., D.P.H. Lond. Fourth edition, with illustrations. Price 12*s.* 6*d.* net.

Public Health Laboratory Work. By Henry R. Kenwood, M.B., F.R.S. Edin., D.P.H., F.C.S. The Part dealing with Public Health Bacteriological Work is contributed by W. G. Savage, M.D. Lond., B.Sc., D.P.H. Fifth edition, with illustrations. Price 10*s.* net.

Practical Bacteriology, Blood Work, and Animal Parasitology. Including Bacteriological Keys, Zoological Tables, and Explanatory Clinical Notes. By E. R. Stitt, A.B., Ph.G., M.D., Surgeon, U.S. Navy. Second edition, revised and enlarged. Price 6*s.* 6*d.* net.

Landmarks and Surface Markings of the Human Body. By L. Bathe Rawling, M.B., B.C. Cantab., F.R.C.S. Eng. Fourth edition. Price 5*s.* net.

Meningitis, Sinus Thrombosis, and Abscess of the Brain. With Appendices on Lumbar Puncture and its Uses and Diseases of the Nasal Accessory Sinuses. By John Wyllie, M.D. Price 6*s.* 6*d.* net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

Diseases of the Anus, Rectum, and Sigmoid. For the Use of Students and General Practitioners. By Samuel T. Earle, M.D., Professor Emeritus of Diseases of the Rectum in the Baltimore Medical College. Price 21*s.* net.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Volume IV. Twentieth Series, 1910.

REID, ANDREW, AND COMPANY, LIMITED, London and Newcastle-upon-Tyne.

University of Durham. Armstrong College, Newcastle-upon-Tyne. Calendar. Session, 1910–1911. Price 1*s.*; post free 1*s.* 4*d.*

SANITARY PUBLISHING CO., 5, Fetter-lane, London, E.C.

The Sanitary Record Year Book and Diary, 1911. Price 2*s.* 6*d.* net.

TIP. LABICANA—F.LLI TEMPESTA, Via de'Delfini, I, Roma.

Studi Intorno ad Alcune Malattie Tropicali della Calabria e della Sicilia. Fasc. II. Per Opera di U. Gabbi, Fr. Lacava, F. Scordo, A. Visentini, G. Franchini. Fasc. III. Per Opera di U. Gabbi, Fr. Lacava, A. Visentini, G. Franchini. Price not stated.

WOODALL, MINSHALL, THOMAS AND CO., Caxton Press, Oswestry.

Prifysgol Cymru. The Calendar of the University of Wales for the Academic Year, 1910–1911. (All communications to be addressed to the Registrar of the University of Wales, University Registry, Cathays Park, Cardiff.) Price not stated.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAM, ROBERT, M.B., B.S. Glasg., has been appointed Supernumerary Assistant Gynæcologist to the Glasgow Maternity and Women's Hospital.

BEVIR, GEORGE, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Priston District by the Keynsham (Somerset) Board of Guardians.

CAMERON, S., M.B., B.S. Glasg., has been appointed Visiting Gynæcologist to the Glasgow Maternity and Women's Hospital.

COLERIDGE, ALFRED, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Moretonhampstead (Devon) Cottage Hospital.

CORE, DONALD E., M.D., Ch.B. Vict., has been appointed Resident Medical Officer at the Manchester Royal Infirmary.

DEBONO, GIORGIO, Professor of Midwifery, Malta University, has been appointed Clinical Assistant at the Chelsea Hospital for Women.

DOTTRIDGE, C. A., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant at the Chelsea Hospital for Women.

DUFF, DONALD, L.R.C.P. Edin., F.R.C.S. Edin., has been appointed Assistant Gynæcologist to the Glasgow Maternity and Women's Hospital.

ELLIS, ERNEST ALFRED, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Ashburton (Devon) Cottage Hospital.

HEWAT, A. MIDDLETON, M.B., Ch.B. Edin., D.P.H., has been appointed Assistant Medical Officer of Health and Assistant School Medical Officer to the City of Lincoln.

HORNE, MAYNARD, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Assistant Anæsthetist to St. George's Hospital.

HUGHES, E. E., M.B., Ch.B. Vict., has been appointed Resident Medical Officer at the Barnes Convalescent Hospital, Cheadle.

HUNT, ALBERT WILLIAM DUNNING, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Moretonhampstead (Devon) Cottage Hospital.

JARDINE, ROBERT, M.D., M.S. Edin., has been appointed Visiting Gynæcologist to the Glasgow Maternity and Women's Hospital.

KEBBELL, C. V., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician to the Queen's Hospital for Children.

KIRKLAND, J. T., M.B., B.S. Glasg., has been appointed Gynæcological House Surgeon to the Glasgow Maternity and Women's Hospital.

LANGMEAD, FREDERICK, M.D. Lond., has been appointed Assistant Physician to the Royal Free Hospital.

LAURIE, LEO VICTOR, M.B., C.M. Edin., has been appointed Honorary Medical Officer to the Moretonhampstead (Devon) Cottage Hospital.

MCKENZIE, HENRY VALENTINE, M.D., C.M. Edin., has been appointed Honorary Ophthalmic Surgeon to the Moretonhampstead (Devon) Cottage Hospital.

MARTIN, J. H., M.B., B.S. Glasg., has been appointed Assistant Gynæcologist to the Glasgow Maternity and Women's Hospital.

NICOLL, AGNES H., M.B., Ch.B. St. And., D.P.H. Vict., has been appointed Junior Resident Medical Officer at the Dundee East Poorhouse and Hospital.

ROBERTSON, W. H., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Colne District of the county of Lancaster.

SANKEY, WILLIAM OCTAVIUS, M.D., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Ashburton (Devon) Cottage Hospital.

TAYLOR, JAMES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Supernumerary Assistant Gynæcologist to the Glasgow Maternity and Women's Hospital.

TURLE, JOHN GLANVILLE, L.D.S. Irel., has been appointed Honorary Dental Surgeon to the Moretonhampstead (Devon) Cottage Hospital.

TYLECOTE, F. E., M.D., Ch.B. Vict., has been appointed Medical Registrar at the Manchester Royal Infirmary.

WILLIAMS, S., M.D. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Llanelly District of the county of Carmarthen.

WOODS, ROBERT STANTON, M.D. Lond., M.R.C.P. Lond., has been appointed Physician in Charge of the Physico-Therapeutical and the Electrical Departments of the London Hospital and to the charge of the Tyrnauer Baths.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BEDFORD COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, &c.

BIRKENHEAD UNION INFIRMARY AND SANATORIUM.—Senior Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BROADMOOR, CROWTHORNE, BERKS, STATE CRIMINAL LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with quarters, coal, gas, and attendance

CHELTENHAM EYE, EAR, AND THROAT FREE HOSPITAL.—House Surgeon. Salary £200 per annum.

CHESHIRE EDUCATION COMMITTEE.—Third Assistant Medical Inspector of School Children. Salary £350 per annum.

DISTRICTS OF NESTING AND LUNNASTING, PARISH OF NESTING, &C.—Medical Officer. Salary £50 per annum.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months Salary £75 per annum, with residence, board, and washing.

DUNBARTON COUNTY SECONDARY EDUCATION COMMITTEE.—Two Medical Inspectors of School Children. Salary £300 per annum.

ECCLESALL BIERLOW UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary £150 per annum, with board, washing, and apartments.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Surgeon for five months. Salary at rate o £60 per annum, with board, residence, and washing.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £110 per annum, with apartments, rations, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Resident Medical Superintendent. Salary 100 guineas per annum, with board and residence. Also Anæsthetist. Salary £15 15*s.* per annum.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

LEEDS GENERAL INFIRMARY.—House Physician. Board, residence, and washing provided.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board, residence, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80, with board and residence.
MANCHESTER ROYAL INFIRMARY.—House Physicians and House Surgeons, unmarried, for six months. Board and residence provided.
MIDDLESBROUGH, NORTH RIDING INFIRMARY.—House Surgeon. Salary £100 per annum, with residence, board, and washing.
NEWCASTLE, Co. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Junior Resident Medical Officer. Salary £100 per annum, with residence and board.
NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.
NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY AND THE UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Assistant to Professor of Pathology. Salary £150 per annum.
NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Lecturer on Physiology. Salary £200 per annum.
OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—House Physician and Junior House Surgeon, both unmarried and for six months. Salary in each case at rate of £80 per annum, with board, &c.
PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Pathologist. Salary £50 per annum. Also Honorary Anæsthetist once a week. Salary £20 per annum. Also Junior House Physician. Salary £50 per annum, with residence, board, and laundry.
RAINHILL COUNTY ASYLUM, near Liverpool.—Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.
RANSOM SANATORIUM FOR CONSUMPTIVES, Sherwood Forest, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Clinical Assistants.
ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Medical Officer in Charge of Department for X Rays and Electro-Therapy. Salary at rate of £60 per annum.
ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.
ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistant.
SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.
SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum, with board and residence.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.
STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—Two Honorary Assistant Physicians, Two Honorary Assistant Surgeons, and One Honorary Surgeon in Charge (jointly with another) of the Electrical Department.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Honorary Medical Registrar.
WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Hexham, in the county of Northumberland; and at Southampton, in the county of Hants.

# Births, Marriages, and Deaths.

## BIRTHS.

SMITH.—On Jan. 29th, at Sussex Cottage, Kenninghall-road, Clapton, N.E., the wife of Montague Smith, M.R.C.S., L.R.C.P. Lond., of a son.
THOMPSON.—On Jan. 28th, at Highlands, Newbury, the wife of Arthur Thompson, B.A. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

## MARRIAGES.

BANKOLE-BRIGHT—BISHOP.—On Jan. 15th, at Wesley Chapel, Freetown, Sierra Leone, Herbert Christian Bankole-Bright, L.R.C.P., L.R.C.S. Edin., &c., son of the late Jacob Gulba Bright, Esq., merchant of that city, to Addah Maud, youngest daughter of the late Honourable T. Colenso Bishop, ex-Mayor of that city, and sister of Councillor F. A. Bishop, J.P.
ELLIS—ANDREWES.—On Jan. 25th, at Cape Town, Francis Heygate Ellis, M.R.C.S., L.R.C.P., to Muriel Floyd Andrewes, youngest daughter of the Rev. John Floyd Andrewes, Rector of Bonchurch, Isle of Wight.
GUNNING—GADDUM.—On Jan. 26th, at Holy Trinity Church, Brompton, by the Rev. David Green, Vicar of Bramley, Guildford, assisted by the Rev. A. W. Gough, Vicar of the parish, Charles John Hope Gunning, M.R.C.S., L.R.C.P., to Violet, widow of Roger Gaddum, and younger daughter of Mr. and Mrs. Frederic Lawrence.

## DEATHS.

BIRT.—On Jan. 25th, at Teignmouth, George Birt, M.B. Lond. M.R.C.S., L.S.A., aged 64 years.
RENTON.—On Jan. 23rd, at Great King-street, Edinburgh, Brigade-Surgeon Lieutenant-Colonel David Renton, M.D., A.M.S., of the 15th Hussars (retired), aged 73 years.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE FOUNDER OF "THE LANCET."

*To the Editor of* THE LANCET.

SIR,—May I add to "Bookworm's" citation one or two references to Mr. Thomas Wakley in out-of-the-way literature?

"Sketches by Boz" are, I surmise, but little read in the present day. Written, as they were, at the very outset of Dickens's literary career, they describe social conditions which have since undergone considerable change and are now chiefly interesting to the antiquarian. One article is entitled "A Parliamentary Sketch, with a few Portraits." Of these clever little portraits—word-portraits, of course—five are those of Members of the House of Commons. Thanks to a former owner of my old copy of the "Sketches" (with its capital Cruikshanks), who has thoughtfully supplied in now very faded pencillings the names of the first two upon leaf margins, I am able to identify four of these gentlemen—Colonel C. D. W. Sibthorp, Mr. Thomas Duncombe, Mr. Thomas Wakley, and Mr. John Gully; the identity of the fifth I should like very much to fix. "Boz" points Mr. Wakley out to his readers in these words: "..... the large man in the cloak with the white lining—not the man by the pillar; the other with the light hair hanging over his coat collar behind." If I mistake not, Dickens lived at that time (about 1836) in the Finsbury constituency. (Mr. Gully, it may be stated parenthetically, had been in early manhood, if not an all-victorious, a very successful, votary of the prize ring, afterwards flourishing into a wealthy coal-owner, and Member of Parliament.)

In another book, which is quite rarely met with in the present day, a three-volume work entitled "The Mountain Decameron," written by a medical man (Mr. Joseph Downes) and published in 1836, and highly favourably reviewed, moreover, in the *Quarterly* of the day, the author (vol. iii., p. 275) ridicules the "devoted gallantry" of those Reformers who "value not their heart's blood 'three skips of a louse'" when the "glorious cause of Freedom" is in question. He says: "How! *blood?* Shed your pure blood? Dear, noble gentlemen, do let Mr. Wakley take it, more quietly—with his Lancet, and *be sure*, from the *head*. ..... Your blood, gentlemen, is not exactly the thing wanted by your country, but your good sense and the obedience of a free subject, and its example to the multitude."

There are again allusions to Mr. Wakley in an old book which I have of cuttings, chiefly of leading articles, from the London daily papers of 1829, 1830, and 1831, which clearly indicate that even at this early stage of his eventful career, and when medical reform was levying so heavy a toll upon his time and energies, he yet was in the van in the political struggles of the time. A noticeable thing about these references is that though they occur in cuttings from anti-Reform papers they are consistently marked by a respectfulness that is always denied the other Reform leaders. For instance, "Wakley" is never met with, but "Mr. Wakley." In one place are mentioned "the consistent revolutionists under the guidance of Mr. Wakley"; in another, "Mr. Wakley absolutely governed the meeting," turning the tables, it is explained, upon the "desperadoes"; while farther on he is styled "the Editor of the *Ballot*." In an alarmist 16-page political pamphlet, too, of the same period, entitled "Householders in Danger from the Populace" it is explained that "it is proper to acquit Mr. Wakley, who was to have presided at the meeting [in White-Conduit fields] of connexion with the desperadoes, even to the extent of being totally unacquainted with their projects."

With regard to Mr. Wakley as an orator, Mr. G. H. Francis says in his "Orators of the Age" (1847), at p. 318: "Some of his 'points' have from time to time told remarkably well; such, for instance, as that in which he described the Whig Ministry as being made of 'squeezable' materials. That one expression contributed considerably towards gaining for him the position he holds in the estimation of the House of Commons." I give this quotation for the purpose of asking whether this very expressive term, which is often used in the present day, originated with Wakley. Francis speaks as if it did, and he was just the one who ought to know. Yours faithfully,

Stoke Newington, N., Jan. 16th, 1911. WM. ROBERTS.

## TUNGSTEN IN COURT.

IT is a sign of the times surely when comparatively unheard-of metals become the subject of litigation. Not very many years ago there seemed to be only a limited field of application for tungsten, but now the curiously heavy metal has given rise to an industry of the utmost importance. Carbon has been replaced by tungsten in the filament of the incandescent electric lamp with enormous economic advantages. The conclusion of the recent tungsten lamp patent case promises to place the supply of metallic filament lamps on a more satisfactory basis to both the manufacturer and to the consumer of current for lighting purposes. It appears that the patents of the Osram Lamp Company, the interests of which are controlled in this country

by the General Electric Company, Limited, had been the subject of infringement by Messrs. Boddy and Co. of London, who dealt in Philips tungsten lamps, manufactured by the Philips Metallic Glow Lamp Works Company, Limited, in Holland. The action, which threatened to be a very protracted one, fell through suddenly on the defendants, Messrs. Boddy, consenting to an injunction being granted against them with costs. It was subsequently announced that the Philips Company had acquired from the Osram Company a licence on a royalty basis in respect of the patents under dispute. The public incurs now, therefore, no liability of patent litigation by purchasing the metal filament lamps made under licence granted by the Osram Company (The General Electric Company, Limited) from the defendants in the above case. Some technically-minded people may naturally enough express disappointment that the action did not proceed, for in that case some interesting particulars as to how exactly the metallic filament lamp was made would have been revealed.

## FERTILITY.

*To the Editor of* THE LANCET.

SIR,—I should like to know what are the chances and probabilities of fecundity in a woman of 36, who has just been married. How many years longer would she be likely to be fertile?

I am, Sir, yours faithfully,

Jan. 29th, 1911. OBSTETRICS.

*** We have answered the questions in our editorial columns.—ED. L.

## BOVRIL.

ON Thursday, last week, the Bovril Company gave a large number of medical men from the provinces an opportunity of inspecting the various processes concerned in distributing bovril to the public all over the world. The model premises in Old-street are fitted up with a variety of most ingenious machines for bottling bovril under completely sanitary conditions, and particular interest was taken in the packing-case department in which boxes are made and the parts nailed together by machine. During the afternoon a special demonstration was given by means of the kinematograph of the phenomenon of agglutination of the spirochætæ of fowls, the exhibition including also tick fever, sleeping sickness, Vincent's angina, and syphilis. This demonstration was a source of great interest to the visitors. Lunch was provided, at which over 1200 medical men sat down. Subsequently the Earl of Erroll, K.T., addressed the visitors in a brief speech, in which he explained the great care which the company bestowed upon the preparation of bovril. Sir James Crichton-Browne followed, and referred to the recent physiological experiments which had been made by an independent observer, in which it was shown that bovril increased the assimilation of food very considerably.

## A QUEER SYMPTOM.

*To the Editor of* THE LANCET.

SIR,—I shall be glad if any of your readers can help me to treat a troublesome symptom in one of my patients that so far I have been unable to mitigate. A lady, aged 57, complains of a more or less constant "hot, peppery" taste in her mouth and on her tongue. There is no discoverable organic nervous lesion, and her general health is satisfactory. Suggestions as to pathological causation and treatment will be gladly received by,

Yours faithfully,

Jan. 24th, 1911. CAPSICUM.

P.S.—I have been giving her a course of valerian, in the form called bornyval.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
,, 23rd (Paris).—First Congress of French Medical Journalists.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
April 18th–20th (Paris).—Third Congress of Physiotherapy of French speaking Physicians.
,, 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
,, 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
,, (Los Angeles, Cal.).—American Medical Association.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August 15th–21st (Dublin).—Royal Institute of Public Health.
,, 30th–Sept. 6th (Portsmouth).—British Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
,, (Turin).—International Congress of Pathology.
,, (Genoa).—International Exhibition of Marine Hygiene.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–24th (Turin).—Fourth National Congress of Hygiene.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Montreal).—Canadian Medical Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—
Spring (London).—Second Optical Convention.
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
,, Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 1st, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Jan. 26 | 30·37 | W. | ... | 69 | 53 | 45 | 47 | 48 | Cloudy |
| ,, 27 | 30·45 | W. | ... | 50 | 47 | 45 | 43 | 46 | Overcast |
| ,, 28 | 30·46 | S.W. | ... | 51 | 49 | 40 | 40 | 40 | Overcast |
| ,, 29 | 30·43 | E. | ... | 54 | 41 | 36 | 37 | 37 | Foggy |
| ,, 30 | 30·32 | E. | ... | 70 | 42 | 35 | 37 | 39 | Cloudy |
| ,, 31 | 30·62 | S.E. | ... | 60 | 37 | 32 | 30 | 32 | Fine |
| Feb. 1 | 30·75 | E. | ... | 45 | 37 | 26 | — | 27 | Foggy |

**The following journals, magazines, &c., have been received:**—Clinical Journal, Liverpool Journal of Commerce, The Referee, British Journal of Dermatology, Weekly Bulletin of the St. Louis Medical Society, Bulletin of the Manila Medical Society, Sanitary Record, Local Government Chronicle, St. Mary's Hospital Gazette, Optician, The Mining Journal, Broad Arrow, Army and Navy Gazette, Folia Therapeutica, Bulletin de l'Académie de Médecine, Archivos Españoles de Neurologia, Psiquiatria y Fisioterapia, Illinois State Board of Health Bulletin, La Clinique Infantile, La Presse Médicale Belge, Hospital Assistant (India), Paris Médical, Quinzaine Thérapeutique, Tidsskrift for den Norske Laegeforening,

Annali di Medicina Navale, Nederlandsch Tijdschrift voor Geneeskunde, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, La Belgique Médicale, Annales de Gynécologie, Sleeping Sickness Bureau Bulletin, Gazzetta Degli Ospedali, Gazette Hebdomadaire des Sciences Médicales de Bordeaux, Guy's Hospital Gazette, The Therapist, Pioneer Mail, Indian Engineering, Medicinische Blatter, The Engineer, Surrey Advertiser, Morning News, Jersey, The Grocer, Literary Digest, Bio-Chemical Journal, Revue d'Hygiène, Peru To-day, Bulletin of the Johns Hopkins Hospital, Monthly Cyclopædia of Medicine, Medical Review of Reviews, Annali dell Istituto Maragliano, Official Gazette of the United States Patent Office, Journal of Meat and Milk Hygiene, Gazette des Sciences Médicales de Bordeaux, Gazette Médicale de Paris, Annales des Maladies des Organes Génito-Urinaires, Times of India, Allgemeine Medizinische Central-Zeitung, British Journal of Dermatology, The Mining Journal, The Journal of Obstetrics and Gynæcology, Critic and Guide, Annales de l'Institut Pasteur, La Presse Médicale Belge, The Transvaal Medical Journal, The Military Surgeon, Tommasi, Presse Médicale d'Égypte, Bulletin de la Société de l'Internal des Hôpitaux de Paris, Cornhill Magazine, Journal of Pathology, The Contemporary Review.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham), at National Hospital, Queen-square, W.C.: at 8.30 P.M.

*Laboratory Meeting:*

Dr. C. M. H. Howell: (1) Changes in the Central Nervous System Probably Resulting from the Administration of "606"; (2) The Pathology of Paraplegia in Spinal Caries; (3) Examination of the Central Nervous System in a Case of Syphilis in a Girl aged 21 Years.

Dr. F. W. Mott, F.R.S.: The Changes in the Nervous System in Amaurotic Idiocy.

And other Papers.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Albert Carless, James Galloway): at 8 P.M.

*Cases:*

Dr. H. Fletcher Morley: Infantilism with Genu Valgum and Chronic Nephritis.

Dr. H. D. Rolleston and Dr. C. H. S. Taylor: A Result of "Late Rickets."

And other Cases.

**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—9 P.M., Lettsomian Lecture:—Mr. W. F. Haslam: A Review of the Operations for Stone in the Male Bladder. (Lecture I.)

**HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.**

WEDNESDAY.—8.30 P.M., Dr. J. H. Sequeira: The Progress of Dermatology since Hunter's Time. (Hunterian Oration.)

**UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.**

WEDNESDAY.—5 P.M., Fleet-Surgeon R. C. Munday, R.N.: Beri-Beri, its History in the Navy and in the Persian Gulf.

**PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury-square, W.C.**

TUESDAY.—8 P.M., Prof. W. E. Dixon: The Codex and the Medical Profession.—Mr. W. J. U. Woolcock: The Codex and Pharmacy.

**OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.**

THURSDAY.—8 P.M., Card Specimens by Mr. Grimsdale and Mr. Brewerton. Paper: Mr. L. Paton and Dr. G. Holmes: Histopathology of Papilloedema.

**CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.**

THURSDAY.—7.30 P.M., Mr. C. J. Sharp: Recreational Activities: English Folk Dances (with demonstrations).

**HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.**

THURSDAY.—8.30 P.M., Mr. J. Clarke: Two Cases of Abscess of Liver Complicating Appendicitis.—Dr. McCann: The Surgical Treatment of Sterility in Women.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.**

MONDAY AND WEDNESDAY.—5 P.M., Prof. W. d'Esté Emery: The Immunity Reaction in Relation to Surgical Diagnosis.

FRIDAY.—5 P.M., Prof. B. Moore: New Views on the Chemical Composition and Mode of Formation of Renal Calculi, and the Metabolism of Calcium in Gout and Allied Conditions.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture:—Prof. W. Osler: Arterio-Venous Aneurysm.

TUESDAY.—4 P.M., Dr. P. Stewart: Clinique (Medical). 5.15 P.M., Lecture:—Mr. R. H. A. Whitelocke (Oxford): Essentials to Modern Treatment of Fractures.

WEDNESDAY.—4 P.M., Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. L. Mummery: Piles, their Pathology and Treatment (continued).

THURSDAY.—4 P.M., Dr. R. Wells: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. Carr: Mixed Morbid Conditions in the Chest.

FRIDAY.—4 P.M., Dr. D. Grant: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Dunn: The Tragedies of Ocular Disease.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Rheumatism in Childhood.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. G. Stewart: Disseminated Sclerosis (with cases).

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Early Cases of General Paralysis.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Practical Medicine.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. C. Hughes: Anæsthetics.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Differential Diagnosis of Common Diseases of the Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. C. O. Hawthorne: Diphtheria, its Later Manifestations.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 2.30 P.M., Operations. 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. G. Auld: Fibroid Phthisis.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. T. R. Whipham: Empyema.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. R. Russell: Muscular Atrophy.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. D. Armour: Paraplegia and Pott's Disease.

**CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.**

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. D. McKenzie: Ear.

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Acute and Chronic Inflammatory Lesions of Bone, Syphilis, Tuberculosis, &c. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Demonstration—Mr. Kellock: Surgical Cases.

FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Diseases of Bone (continued). Tumours, Fractures, Separation of Epiphyses, Dislocations. (Special Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Fungous Diseases of the Skin.—I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis: VI., Madura Foot.

LONDON HOSPITAL MEDICAL COLLEGE, Clinical Theatre, London Hospital, Mile End-road, E.

TUESDAY.—1 P.M., Clinical Surgery Lecture:—Mr. E. H. Fenwick: A Method for the Accurate Measurements of the Movements of the Human Kidney before Operation, and its Bearing on Renal Surgery.

LANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Differential Diagnosis of Chronic Neck Swellings. (Post-Graduate Clinic.)

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (6th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY (7th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

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**SATURDAY (11th).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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# An Address

ON

# THE CLINICAL ASPECTS OF EMOTION AND ACTION.

*Delivered to the Members of the North London Medico-Chirurgical Society, at the Great Northern Hospital, Holloway-road, London, N., on Jan. 12th, 1911.*

BY THOMAS CLAYE SHAW, M.D. LOND., F.R.C.P. LOND.,

EMERITUS LECTURER ON PSYCHOLOGICAL MEDICINE, ST. BARTHOLOMEW'S HOSPITAL, LONDON.

MR. CHAIRMAN AND GENTLEMEN,—In accepting the honour of an invitation by the council of this society, forwarded to me by the chairman, to address you on some subject chosen by myself, I have concluded that as physicians and surgeons meet on the common platform of disorders of the nervous system, I might profitably occupy your attention by speaking about a puzzling class of cases which come early under notice in general practice, and ultimately are often referred to the specialist—cases which are not only of great importance to the individual, but which radiate into the nooks and crannies of social and domestic life, and perhaps at last issue in legal complications. And the worst is that the arbiter before which these cases finally come for adjudication is itself in a parlous state, incomplete and out of date. The law which is supposed to deal with the conditions of life and property is rarely in the same parallel with things as they are. Perhaps it is not its duty to anticipate—it cannot apparently keep even pace with modern developments, and as it lags behind it often deals unfairly with scientific truth. Nowhere is this more conspicuous than in dealing with affections of mind.

It is allowably true that we do not now know much more than our ancestors about the real nature of mind, though we certainly do know much more about the *disorders* of mind, and of the true significance of certain symptoms; but the law retains its canons of responsibility, and, strive as we may, it refuses to be convinced of mental alienation unless in certain directions, even though clinical experience points out the defects in the system of forming judgments.

Fortunately, in one class at least of legal cases judgment is in the hands of men who have some degree of medical training, men who are constantly brought into association with doctors and who can pass beyond the narrow confines on which legal opinions in lunacy matters are based as a rule, and who can see that such factors as Conduct and Emotion may be the indices of unsoundness of mind by *themselves*, and without the accessories which make the insanity of a person manifest to even the man in the street. These men by their practical knowledge have done much to prevent unnecessary law-suits and failures of justice. You must in practice be often brought face to face with cases where things go wrong in the family, where you feel sure that the conduct of one or other of the parties is giving much trouble, and yet where the plausibility of the protagonist in the difficulties and his, or her, general intelligence and conduct in other matters are such that you deem it hopeless, and indeed impossible, to prove legally that a real mental disturbance is at the root of the trouble. There is apparently nothing wrong with what is called the Intellect, the ordinary relations with friends are kept up, strangers see nothing different from usual, and yet a formerly peaceful home is made a hell through a change in one element of a mental content—namely, an alteration in Feeling or Emotion. Or a patient may be observed to be doing things which tend to compromise himself and to imperil his family prospects—all the while that he talks like an angel, professes the best of motives, and shows to the world around him no sign of impairment of intellect which entitles his friends to the protection of the law, and so he is allowed to pursue his career because those responsible for him are afraid of the legal consequences of trying to stop him.

These two conditions, change of Feeling and peculiarity in Conduct, are those which I wish to dwell upon this evening, because their importance as real tokens of mental alienation is not sufficiently recognised, because they are quite as, if not more, connotative of disordered mind as may be the presence of delusions and hallucinations, and because the stoppage of the danger caused by these two factors demands all your courage and tests your strength in the integrity of your knowledge.

## EMOTION AND FEELING.

Just consider for a moment how much Emotion or Feeling enters into the whole domain of animal life. In its lower form of Pain it is the safeguard of existence. Without Pain we should be reckless; without Pleasure we should become indifferent; without Pain life would be very precarious; without Pleasure life would be monotonous and unendurable. And the same is true of the higher emotions. As long as there is Hope we cannot be resigned to destruction, but in the face of the inevitable we accept the situation and submit to it as gracefully as we can. Life, indeed, would scarcely be continuous if it were not for Emotion and Feeling. If it were not for Love and Feeling the continuity of the species would cease, for Duty (which is not strictly speaking an emotion) would certainly not ensure it. Duty does, indeed, *oppose* the continuity of the species except under artificial conditions, backed up by the law.

Now, one thing to notice especially is the *stability* of Emotion and Feeling. Once given they proceed through the life of the individual without change, without radical change, that is, though they may have cycles of intensity. The amorous man retains his *proprium* as long as his potentiality lasts, and even after that has gone the feeling may exist in the form of desires, though if it does not it may simply die away without changing into anything except *indifference*, which is the death of the emotional state. The person who hates a thing will, as a rule, hold his hate to his dying day. He may, of course, dissemble his love or his hate for reasons of diplomacy or policy, but he is never thoroughly attuned to the new rôle, and generally he plays the part badly, rejoicing greatly when he can, as the common saying goes, resume his natural complexion. What is the radical cause of a person's emotional complexion we do not know; whether he is to be of the stamp of "the moody Dane" or of the "gay Lothario" we cannot determine; it is not a case of wealth nor even a case of health always, for the rich man may be a misanthrope and the cripple a philanthropist, but neither the success of the one nor the misfortune of the other can upset the natural bent—like politics, the conservative or the radical trend is constitutional.

On the stability of Emotion, then, we build our social fabric; we shape our ends as regards individuals on the basis that their sentiments and emotional tone are the same as they ever were—not their Ideas, remember, but the emotional tone of their ideas. The benevolent man is the prey of the harpy and the extortioner; the miser is left to his niggardliness, despised and ridiculed. If the man of hitherto fixed mental trend surprises his friends by appearing in a new character, if from being a lively Autolycus he becomes a cross-gartered Malvolio, the first question asked is as to his sanity, and herein lies a great truth, and one that we ought always to keep in front of ourselves—viz., the fact that change in the emotional tones is not the precursor merely of mental instability, but it is a sign that the mischief is actually there—that disease has already begun.

You may ask how it is that if Feeling and Emotion are so stable there has grown up such a saying as "he grew to like it." It is true, especially as regards mere sensation, that a substance which is objectionable at first may become indifferent or even taken without murmur at last, but this is probably due to the influence of a new idea that it is doing good, which finally becomes so strong that it overwhelms the unpleasant tone of the old idea by the substitution of a more agreeable one; but though the old feeling may be overwhelmed it is not extinguished, it is but subordinated to the idea of good which is accruing. So that here, as in very many other things, public assertions are unreliable when analysed.

In the higher region of true Emotion and Feeling it is to be noticed that tendencies, dispositions, may be obscured for a time by the necessities of the moment, but it is only a temporary eclipse, and the obscuration has not changed the real nature of the object. In our daily work as medical men we are very liable to be deceived by appearances, and in no department of medical science is this liability more easy than on the mental side of conditions with which we are

brought in contact—for there is a mental side to every common ailment—so that it is wise to be on the alert and to ask ourselves the question, "Is there here a real change of Feeling or is it only an apparent change, overshadowing for a time and for a purpose the natural trend which is only in hiding and will again coruscate with its habitual intensity?" The difficulty of the situation is that very one which besets us in many of these investigations connected with mental conditions—viz., that we are dependent on the *subjective* assertions of the individual as a guide to what is found in his sayings or doings. If a person says that he has a pain or a headache or a feeling of pressure it is only rarely that we can say that he has not; as a rule we accept the statement and try to find the cause, but there is no real and reliable test for Emotion; we cannot say—except from the actions of the patient—that such and such an emotional tone is really present, and even then we may make a mistake and declare to be benign what is in reality diseased and malignant. When, therefore, I speak of the stability of Emotion I allow that the general trend in one direction may be upset by temporary causes, but the reversion to the real and basic trend soon reasserts itself—the converted poacher will snare a rabbit or net a trout when the temptation occurs, and the regenerate Scrooge will revert to his parsimony when the newness of his benevolence has worn off. Indeed, the protestations of these perverts are frequently too much; they protest loudly to keep up their courage in the new rôle, because they feel that they are just acting a part; it is like putting a coward into a military uniform to make him fight, because the dress may stimulate him into a swashbuckler's bravery, the true quality of which he does not possess.

### CHANGED EMOTIONAL STATES.

As men in practice we often meet with cases where there is a great change of conduct which can only be traced to change in the emotional tone. There are no false ideas about things in general, the patient may remain on the best terms with neighbours, and even at that testing-house of peculiarities, the club, no altruistic change may have been noted, but from your knowledge you will ascertain that in the conduction of intimate relationships there is a radical change in Feeling—and, at first, nothing else. Business conditions may be promoted as usual, but the domesticity of the home is invaded, harmony is interrupted, and where was peace there now reigns discord, impulse becomes the substitute for moderate judgment, and yet nothing can be predicated except a pronounced antithesis in the moods or the emotional accompaniments of the ideas. This change shows itself prominently in feelings toward the husband, for women head the class of this alienation. Love is changed to hate, and, following this, suspicion enters into the field, and then with the presence of unjust and unfounded doubt we are treading closely on the domain of an actually deluded condition. You may take it for granted that at the root of this change there is some sexual trouble.

Freud of Vienna has elaborated his doctrine of "complexes," by which he seeks to cure those cases in which false ideas and changed emotional states are the characteristics of the disorder, by a thorough investigation of the condition of the subconscious mind and its connexions, so as to arrive at the deep-seated influences which, though at first unsuspected, really control ultimate ideas and actions. Freud's process is tedious and complicated; it involves long sessions of examination and argument and perhaps a personal aptitude on the part of the inquisitor, but the process of examination brings out clearly two factors which did not previously receive the attention which they merited—viz., that much of what we feel, say, and do is determined by basic conditions which exist in a subconscious area and are therefore not at once perceived, either by the patient or by the examiner, as being vital to the true conception of the subjective position. It is these deep complexes which must be got at, and it is only after considerable practice and with much application that success can be achieved. Another thing upon which Freud insists, and the importance of it cannot be over-estimated, is the frequent presence of a sexual element in the subconscious area which is of the greatest possible influence as a disturbing factor. I have been much interested in finding how often a sexual element is discovered to be of the greatest importance in the history of a case where it was before examination either unsuspected or ignored. Let us review this sexual element for the purpose of showing how fundamental it is in the life of the individual and as a justification of Freud's theory. The sexual instinct is present very early in the life of the individual—too early one feels inclined to think. It leads the schoolboy into extravagances of conduct which imperil his mental integrity and which probably have an exhausting effect upon his bodily constitution. It may be a necessity—it is, perhaps, none the less a misfortune—that this sexual nisus should come so forcibly into prominence at a time when ignorance is unable to control impulses. However, intercourse is so dependent on the timely development of emotions and sentiments that it may be a necessity for the complete unity of a character, for the proper constitution of mental contents, that the elements of the content shall be nascent and be elaborated together, and that unless this early admixture of ingredients occurred there would arise a mental complex in which charity, benevolence, social amenities, and altruistic considerations would be absent. It may be that an unemotional mental habit, a cold, indifferent, calculating machine, which an intellect without feeling would become, would be detrimental to the career of a world which is manifestly compounded of agreeable and painful experiences. We do, indeed, see from time to time instances of the absence of the gradual rise of sexual promptings, and the result does not commend itself to us as satisfactory; we seem to miss in these people that completeness of sympathy with others, that rotundity of mind and character the want of which banishes these inchoate specimens into a class apart, and ostracises them from the perfected social environment. And the worst of it all is that a process which should be allowed to grow naturally in the quiet harmonious adjustment of reciprocal integrities is fostered, nay, absolutely forced, into premature consciousness. The spectacle of semi-nude and suggestive stage-kickers and poseuses does away with all sense of timely curiosity in the opposite sex. I doubt indeed if it does not seriously damage the matrimonial market. There is little new to look forward to; the young person has at the most critical period of his life been accustomed to the revelations and to the perturbations of a nascent function which should have been sedulously kept in the background and not hothoused by the injudicious fires of those who trade upon the pleasurable side of Emotion and Feeling, careless of the risk to decay brought on by immature functioning. As a consequence, the man either loses early the promptings to marry, or if from social or other considerations he does enter into a matrimonial contract there is apt to be trouble in the early future. Over and over again one meets with mental embarrassments and difficulties due in their basis to sexual inadequacy brought on by the injudicious awakening of forces which should have matured in slumber to produce the harvest in the hey-day of life. I doubt if 50 per cent. of the people who are married are really fit for it! The functions have been so anticipated at pleasure that when they become obligatory they are irksome. What other result can be expected than what one meets with? With the cooling of ardency there arises suspicion, the pride of the woman is injured; she thinks that she has lost her charm and that illicit alliances have been formed. Then comes the occupation of separate apartments and the first stage of the final rupture is completed. Almost invariably in the divorce court reports you notice the fact that the married couple desiring to be separated occupy different rooms, and it seems a necessary corollary that this separation must lead to an alteration in mutual confidence.

Please note that so far we have only arrived at suspicion, probably not well founded, but in a way to be understood as possible to the sound mind. There may be no real change of feeling, but the change of after-circumstances has given rise to a train of ideas which menace the unity of the married life. The case is different, however, when the estrangement happens to concern one of neurotic temperament, in whose family there may have been actual insanity and where exists a tendency to a mental instability from causes which but for this trend would have had comparatively little significance. Here we are face to face with a latent morbid sensitiveness fanned into flame by unfounded suspicions of acts never intended, and productive of conditions which are most serious in their results. It is in this class that we note a distinct change of Feeling—Love is turned into Hate, reconciliation becomes impossible, and we are confronted with the spectacle of the home destroyed, the family

divided into a partisanship of the one side or the other, and ourselves perhaps called in to adjust the balance of parties as best we can. In this change of Feeling without adequate cause and in the face of facts which speak to the contrary we should suspect the early development of an insanity which in time will be apparent to all. In its early stages the friends and sympathisers can see nothing wrong, they listen to and receive as adequate the explanation and statements made, possibly with all coherence and with an air of truthfulness, and as they are not primed with all the facts they see no ground for treating the indignation of the self-made victim with doubt or disapproval. They see no insanity even though you may.

It is a curious thing how people generally consider themselves judges of Insanity! Just as they think the sun goes round the world because they see it drop in the west, so do they conclude that the evils are real because the aggrieved one says so! And our difficulties in these cases are very real, because much as we may know that temporary seclusion or residence under skilled supervision is absolutely necessary in the interests of the patient and others we cannot enforce it. We cannot sign a certificate for compulsory detention because the patient is not certifiable in the accepted sense of the word—she would probably be returned in a short time because there is so much lay and so-called "common-sense" interference with the detention and treatment of persons who do not come up to the legal definitions of insanity, that even those who know better are handicapped in their knowledge and the patient refuses to submit to place herself under a separation treatment which she regards as a branding extinction prompted by the desire to get rid of her for self-seeking purposes. A concrete example of what I mean would work out as follows. A married couple have maintained happy relationship for years and have produced a family. In one of these parents there is a history of a decidedly insane progenitor. All goes well until the advent of the climacteric period or the influence of mental strain asserts itself by the production of a change in the emotional tone which leads to bickering and dissatisfaction in the place of contentment and harmony. If the nature of the change is not noticed there ensues a responsive recrimination, relations become strained, and separate sleeping apartments are adopted as a means of escape by the one from the irritating demeanour assumed by the other. This, not unnaturally perhaps, leads to an aggravation of the changed emotional tone, and there follow accusations of unfaithfulness, of cruelty and unkindness, all of which may be absolutely unfounded, though protestations and even proofs to the contrary of the most convincing nature may be to hand.

It may be said that, if the change in emotional tone has gone so far as to set up these unfounded ideas, the case has already become one of pronounced and certifiable insanity, but it must be remembered that it is only later that these ideas, prompted by the change of tone, assert themselves; at the first they are not demonstrably present, though they may have an existence in the subconscious area. To the careful observer there are frequently other symptoms present, though in public they are not apparent, such as abstention from proper food and insomnia, due to suspicion, anxiety, and other associations set up by the changed state. Suppose a person of this group of symptoms were to commit a crime, either to injure herself or to inflict damage on others, there would be no difficulty for anyone acquainted with the facts in giving evidence as to mental incapacity, and without doubt such evidence would be gratefully accepted by the friends of the patient, the very people who up to the time of this criminal behaviour could see nothing wrong and would have strongly condemned proceedings calculated to prevent such a catastrophe as has happened.

### CONNEXION BETWEEN FEELING AND WILL.

It will probably occur to you, and you have the right to ask, if Emotion or Feeling is not a thing by itself but is merely the tone of an idea, does not the very fact of a change in emotional tone connote a change in idea, and *ipso facto* indicate that we are in the presence of a delusion? I think that if you do so contend you are right, and, moreover, that there is present an actual physical basis for your contention, but you would get little or no support from the actual state of the present law. We do not really know what Emotion is, though we do know how intimate are its connexions not only with the central nervous system, but also with the visceral organs of secretion and nutrition, of respiration, and circulation. The law says, "If you have an ill or prejudicial feeling towards another you must use your will to stifle it and not allow it to influence your action." How can you use your will to suppress a process which is really the chief constituent of your will at the moment? Feeling is the main constituent of Will, it is the element which turns the scale in the direction of action, and yet the law refuses to recognise affective insanity. As a learned judge once said to a celebrated lunacy expert, "When you talk of affective insanity you are talking to the wind!" Even Emanuel Swedenborg, imperfect physiologist though he was, recognised the connexion between Feeling and Will, for he says,[1] "Those things which affect a man belong to his will, and those things which a man thinks belong to his understanding. Whosoever is not aware that affection is of the will confounds affection with understanding; he says it is one thing with thought, but yet they are not one, though they act as one. That all things of the body are referable to the heart and lungs is known; but that there is a correspondence of the heart and the lungs with the will and the understanding is not known."

### BASIS OF EMOTION.

If we do not know the real nature of Emotion we do recognise that it is a quality of ideas, that certain forms of ideas have Feelings of kind associated with them, and so we speak of sad or of joyful ideas, as also of indifferent ones, in which no striking emotional tone is to be noted. Now these ideas, we must conceive, have organised physical bases upon which they must depend for their integrity, and as long as these substrata remain entire the disposition, the likes, and dislikes must remain the same. It may be possible by argument, education, or necessity to change a man's ideas and thereby to produce a preponderance of emotional tone in a direction contrary to what it was, but the old ideas with their *propria* of tone are not destroyed and usually remain in consciousness even under the new mask, whilst they materially modify any conduct which the new ideas may suggest. As the popular saying goes, "The man still remains faithful to his old love," and is easily brought back into its tracks. Suppose, however, that from disease of an irritating or destructive nature—a lesion, in fact—certain tracts of tissue become involved which are the carriers of grades of ideas with their accompanying tones, it is evident that the whole trend of nature and education may be altered and Emotions of a contrary form set up which suggestion and expostulation are incompetent to cope with. But if so, this must be due to disease or to such disuse of structure as amounts to a practical atrophy and loss of competence to function. This, then, it is which turns love to hate; not a change due to the substitution of the quality of an idea into one of an opposite kind, but the substantial obliteration of a material which functioned in a definite way and its replacement by the growth of a different set of processes.

You, then, may say that this process of changed emotion by the growth of opposite ideas of which Emotion is the appanage can surely not be distinguished from a delusion, is in fact a delusion, and must be treated as such, I repeat that I am quite prepared to grant the force of this argument, for to my mind Emotion is the local sign of the idea, and on the theory of the physical basis of mentation it is the key to the position, but to the outsider what is most striking is the loudness of the tone, and he is apt to ignore the fact that it denotes a change in the structural basis of ideas, supplemented as these must be by arguments, started from the new trend and reinforced by association and its recognised laws. Emotion is, etymologically, the moving force of the idea; more than anything else it causes the idea to issue in action—this it is which stirs in oratory, which makes the enduring obstinacy of the martyr, which forces on the impulsive acts of the murderer, and which determines the course of the social system to a greater extent than any other factor which we can adduce from the analysis of a mental content. There are persons in whom the emotional tone is feeble, and this placidity has its advantages, for it saves them from the perturbation, now on the crest of the wave of success, now in the trough of failure

[1] Divine Love and Wisdom, p. 269.

and despair, of their more sensitive compeers; it makes its possessors exponents of what is called the calm logic of facts, though it deprives them of that cataractic force which can overcome Reason by the *vis viva* of Feeling. There are many who are unconscious of the idea when in the presence of strong Emotion, and the accumulated tone when many associated ideas are acting in harmony blinds the agent to the nature of his thought and urges him to an action which, though consonant with his Feeling, is opposed to his best interests. Says King Lear:—

"The tempest in my mind
Doth from my senses take all feeling else."

Shakespeare did not know the word "Emotion," at least he never once uses it, but he was quick to recognise the effect upon consciousness of strong Feeling. I can quote the case of a man whose early life was not what it should have been, and who, being placed in a position of great responsibility, got to feel his inadequacy upon moral grounds to retain it, yet to his friends there was no insanity present; he simply said that he was depressed and made no sign, gave no outward indication by conduct or conversation. All the same, his excessive emotional tone incapacitated him from following his vocation, and whereas matters which formerly caused him not a second thought now became so obsessional as to constitute an actual derangement. "The evil that men do live after them," says our great poet—it is, unfortunately, true that on occasion it becomes dominant during life and shatters the integrity of mind as a whole, leaving an impotent detritus.

### ACTION.

If we now turn away from the subject of Emotion and take up that of Action we notice that changes in this sphere may be the only signs of insanity, but they are so urgent that it becomes necessary to act upon them, though to do so requires, at times, some courage and much daring. Action is the key to internal thought, but just as "language was invented to conceal thought," I do not mean to say that action of necessity shows all that we really think; it, in reality, may be an indication of only part of what is thought and not what is the true belief of the agent; but, even so, it is the result of a certain mental process the motives of which may not be apparent or accessible, and often are so latent that we cannot use them for our purpose when the object is to restrain the individual.

Crime of the worst kind is not always owing to insanity; indeed, many criminals are sane and clever, and their acts are the legitimate and necessary products of a sound organisation. It is a wicked and a punishable offence to kill another person for selfish purposes, but there is not necessarily any insanity in it. The deliberate murderer thinks nothing of the wickedness, and he uses all his intellect (not infrequently with success) to avoid the punishment. I am not speaking now of impulsive acts where the accession of a sudden emotion of overwhelming intensity leads to the commission of crime, but of a continued and apparently deliberate line of action, and the question arises, how are we to distinguish between acts the result of a sound, but wicked or ignorant and uneducated, mental constitution from acts which are the result of disease, but where none of the legal tests of insanity can be adduced, where there are no delusions, no hallucinations, no incoherence, no indications by conduct in the ordinary amenities of life, where the person may know not only what he is doing, but also that in the abstract he is wrong, and yet we shall be right in coming to the conclusion that he is really insane and irresponsible—that is, that he is suffering from disease or from imperfection? A concrete example of what I mean would run as follows. A man in good social position and possessed of adequate means carries on his social responsibilities with capacity and decorum for a number of years until he meets with an accident to his head. Soon after that his conduct changes, he becomes involved in dealings of a licentious and compromising character, is blackmailed, and loses large sums of money, reducing his family from affluence to narrow straits, so that the question arises as to his sanity. To talk to, the patient is coherent, gives perhaps a few sentimental reasons for his conduct, but shows no delusions; to those with whom he is casually brought into contact he is apparently quite sane. Upon these latter persons there comes one day a thunderbolt in the knowledge that lunacy certificates have been made out and that he is deprived of responsibility. When it comes to the question of regulating the administration of his property he has the power of demanding a jury, and if this is accorded all the previous work is undone, for an ordinary, or even a special, jury cannot understand that a man is insane who has no delusions and is able to answer ordinary questions. Fortunately, in most cases a jury is not demanded, and the decision rests with expert judges who know by experience that action alone may be the true test of an insanity, and that the present state of the law is not always adequate to determine these difficult cases. The best referees in these conduct cases are the general practitioners, who alone have the special opportunities formed by their medical training of correctly appreciating such aids to diagnosis as are afforded by noticing any change of temperament or of habits and customs, &c., which emphasise the conclusion that some radical defect in nervous constitution is the basis of these depraved actions.

The general practitioner as a practical psychologist, trained by experience in the school of observation, is the man in whose hands lies more than in any others the determination of the real nature of these disturbances of emotion and action, he is constantly at work in the human laboratory of causes and effects, and if to his never-ending school of phrenology he can add the analysis that training in psychology gives we have all that is required for the proper appreciation of what man is intended to be—a machine to think and to act.

### TREATMENT.

And now it becomes necessary to ask how far we can go towards the cure of the two conditions which I have been elaborating. Can these mental atoms he got at except through structure? Is there a mind apart from the body? We are calling out for something definite to go upon, and as yet all our advance is in the direction of procuring a healthy and sound structure. Strive as we will, the demonstration of mind—what is called the spiritual mind—seems as far off as ever. We talk of psycho-physical parallelism and elevate it to the rank of the most recent and scientific explanation that can be held, but the very existence of the term shows that Brain and Mind are not cause and effect, that we do really hold that there is an undemonstrated mental process apart from the body but acting through and with it. If a person comes with the complaint of change of feelings towards those who ought to be nearest and dearest, if he complains of lost power of Attention and of Will, are we simply to look for some bodily defect and direct all our energies to remedying or modifying that? At present it looks like it; but I do not hesitate to say that though we shall often be right in pointing to some diseased corporal condition we cannot always detect it, nor can we indeed be sure that in all cases it exists.

It is piteous to have to listen to the plaints of emotional stress, of want of energy, of loss of power of concentration, of insomnia, &c., and after a careful but fruitless examination of the bodily organs to find oneself unable to do anything to relieve the condition beyond advising change of scene or such gross temporary expedients as sedatives and narcotics. We feel that we should like to get hold of that spiritual mind and compel it to a proper influence, but even if we could we have no pharmacopœia of remedies for it. We are tortured by discordant strains and on looking for the cause we find that the instrument is in perfect order but that it is the performer who is at fault. Where is the performer on the brain instrument? No doubt the performer is often eager—oh! so eager—to have the instrument altered to his requirements, chafes at the defect which converts his best wishes to unsupportable discord, but is this always the case? Is not the performer frequently at fault, though we cannot unseat him? Mr. Ballance told me of a boy, an incorrigible thief, who was completely cured of his bad habits by the operation of trephining. Whether the operation was successful by relieving pressure I do not know, but anyhow it was an extraordinary result to obtain a complete change in mental trend from an alteration in physical conditions. I once had a case of a lady who gave utterance to the most fearful delusions of the persecution kind and was grievously depressed. She had an attack of erysipelas, and during the course of the disorder her depression and delusions completely disappeared, and she was perfectly sane. Was the insanity of this lady due to brain disorder (perhaps of a toxic nature) which was for the time cured by the presence of new micro-organisms?

Perhaps; but if so it points out how long-continued disordered brain action may exist without radical impairment of tructure.

It was hoped that some progress was being made in our knowledge of the nature of mind when the study of psychophysics was introduced, but the results, though very interesting as regards the way in which bodily processes and mental phenomena interact, can scarcely be said to have enlightened us on the real question. Some time ago Wundt of Leipzig, in discussing Weber's and Fechner's laws, made the following statement: "Not only have we discovered the law of the dependency of sensation upon stimulus, but we have indicated the method by which the intensity either of sensation or of stimulus can be calculated when the intensity of its correlate is given. The method is simplicity itself, for it presupposes no more knowledge than the multiplication-table and no more apparatus than a book of logarithms"—and very much the same may be said of Ebbinghaus' law of memory. But after all this is only another way of regarding the same thing, and it does nothing in the way of showing us the real nature of the mental processes. And yet in the face of some apparent successes it does not seem right to let the mental symptoms follow their own course without some attempt to check or to modify them, after we have definitely concluded that there is no structural defect in the nerve centres and tracts. I come across people who are quite well as far as can be ascertained in their bodily processes, and yet who suffer intensely. At present suggestion, with or without hypnotism, seems to do more good than anything else. I have known a lady cured of insomnia, depression, and headache by the very natural process of having a baby. Was this a physical cure (in a way which certainly cannot be understood) or was it a mental cure, by giving her something to think about in place of the *ennui* of uneventful married life, thus providing occupation and mental relief?

We know the curative effect of time upon emotional states, how the most poignant grief (and this without any marked structural process) degenerates into an easily portable placidity merely by the action of a moderating influence, which, whilst leaving intact the idea, robs it of emotional sting. You may say that through the agency of time the idea has lost its intensity through diversion of tracts to some other quarter, but this is not so, because we can prove that the idea remains in all its vividness and can be as fully discussed as ever, but it has lost its tone—it no longer affects—in a word, its accompaniment of Emotion has left it for ever.

I am not without confidence in affirming that notwithstanding the general despair as to success in improving mental symptoms when simply physical treatment seems useless there is yet ground for the belief that we may do good service by a system of mental training; but constant and personal attention is indispensable, and the process is apt to be tedious and is certainly expensive.

Perhaps I may for a moment refer to the very proper insistence made by the Lunacy Commissioners against the too common practice of placing very large numbers of insane persons under limited medical supervision. It is argued, and in my opinion correctly, that persons gradually lapse into a state of dementia because such mental energy as remains is neglected, and that if individual attention could be given the revival of nervous energy would be assured. Of the truth of this I am certain. I have often taken in hand apparently hopeless cases, and by regularly talking to them and trying to arouse dormant mental states I have succeeded in replacing listlessness by energy, apathy by attention, and impulse by deliberate will action.

In dealing with private patients the importance of small homes cannot be exaggerated, and, if possible, change of surroundings should be given, because the patience of an individual becomes weakened by too continuous effort and there is novelty in change. Where, as in public schools, there is a very large number of pupils the indifferent plodders are apt to go to the wall and only those of brilliant promise are selected for special exhibition, so is it in overcrowded establishments—those of ponderous inactivity are left to their broodings, and recovery is blighted where a timely and continual stimulus might be of inconceivable value.

It is above all things necessary in treating cases of emotional alteration to place them in new surroundings, away from family influences, to persist in methods calculated to arouse new ideas with their own peculiar emotional tones, so as to let the old ones starve by inanition—not so much to leave the individual to fight his own morbid thoughts (a process which often tends to emphasise the disordered function, because the very fact of trying to overcome it keeps strongly in consciousness the one thing which we are seeking to weaken)—not, I say, to leave the patient alone to struggle with his obsessions, but to take away ourselves the weight from him, to release him of the burden which he vainly tries to shuffle off. It is in this way that Suggestion becomes a powerful agent, not by pooh-poohing certain painful feelings and saying that they do not exist, but by ignoring them and setting up other strong tones, whilst we allow Time to aid us in subduing old influences. The patient must be kept going in new tracks, whilst the old footsteps are gradually made faint, not by his own scattering of oblivious sand, but by a gradual and final desuetude. This is the *rationale* of Freud's treatment, and it is easy to perceive how long and tedious the cure may be.

If by these means we can set up a change in the emotional tone it is but a step further to obtain success in increasing Inhibition, in strengthening the Will, because as new processes are set up so do the old constituents of the old Will fade and a new Inhibitory power is inducted. We do not call upon the patient to exert a Will which by its essential composition is a part of the same morbid process as the Emotion, but we try to induce a new Will in harmony with the new emotions which we are seeking to arouse, a new Inhibitory Force which shall so uproot past troubles that their very existence is a lost memory. I have noticed with this emotional change that there is often an irritability of general demeanour, patients become peevish and discontented, a state compounded of despair and anger; they go from one practitioner to another, are told that there is nothing the matter with them and that it is merely a case requiring time. Then, finding that they do not get well, they naturally become hopeless and desperate, unbearable to themselves and others.

It is a mistake to tell these people that there is nothing the matter with them. Is it likely that they delight in spending their money on medical men, in the gloom of separation from amusements and family duties? What they want is disciplined treatment, not the ordinary form of rest-cure, but residence in good hygienic conditions under some one who, whilst having plenty of sympathy, can mix it with firmness and authority, so as to check the ramifications of disordered Feeling and make the patient feel how to help himself.

You will notice that it is chiefly among the better classes that the symptoms of which I have been speaking occur; the lower classes do not suffer so much in this way; they have occupation all the day long; they have large families and are not dependent on the theatres and the golf-clubs for their diversions; for these Time is all too short, for the others it is too long and tedious. You have only to turn to the law reports to see how responsible are the sudden outbursts of Emotion for crimes of all kinds—blind fury, the hasty deed, unconsciousness of all process of thought at the time, then the hasty repentance, and to all this the law is blind as regards mitigation—says, in fact, "That is what I am here for—to check." Then comes the reign of Lust and Desire, leading to the destruction of everything that stands in the way of gratification. Again says the law, "This I am here to punish." And so the thing goes on. Reputations are ruined, contracts are broken, selfishness becomes the keynote of life because of the perversion of Emotion, which as it is the goal of the many who seek happiness as the *summum bonum*, so does it become the trapdoor through which many numbers fall in their journey across the bridge of Life.

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THE INTERNATIONAL MEDICAL ASSOCIATION TO ASSIST IN THE SUPPRESSION OF WAR.—This association will assemble in congress during September, 1911, in Paris, at a date which will be fixed later and which will be communicated to all those interested. The medical men who desire to attend this Congress are asked to be good enough to send in their adhesion, as soon as convenient, to the headquarters of the association, at the address of the Président, Docteur J. A. Rivière, 25, Rue des Mathurins, Opéra-Paris.

# The Hunterian Lectures

ON

# COLOUR VISION AND COLOUR BLINDNESS.

*Delivered before the Royal College of Surgeons of England on Feb. 1st and 3rd, 1911,*

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.,

BEIT MEDICAL RESEARCH FELLOW.

## LECTURE II.[1]

*Delivered on Feb. 3rd.*

### THE DETECTION OF COLOUR BLINDNESS FROM A PRACTICAL POINT OF VIEW.

#### I. *Object of a Test for Colour Blindness.*

GENTLEMEN,—Tests for colour blindness are of two kinds—namely, those which are used for the purpose of ascertaining the special phenomena of colour blindness, and those which are employed when the inquiry is made for some practical purpose. As with visual acuity, it is necessary to fix an arbitrary standard. As we do not wish to exclude a greater number than is absolutely necessary, the object of the test should be to exclude dangerous persons, and dangerous persons only. These persons may have other duties to perform which do not require them to possess a perfect colour sense. I should, however, like to see those persons who are specially qualified for a certain position occupy it; for instance, men who had to keep a look out on our most important ships being selected because of their accurate colour vision and visual acuity. I do not mean that I would select only those men and reject the others, but that I should like to see a second object of a test—namely, to select those who are specially efficient so that the captain might know on whom to rely in conditions of exceptional difficulty.

#### II. *The Requirements of a Test for Colour Blindness.*

A test for colour blindness when it is to be employed for some definite and specific purpose, as, for instance, excluding dangerous persons from certain callings, should be such as to show definitely that the persons rejected are dangerous. It is very useful to demonstrate to the men and their fellows that a rejected candidate is dangerous. The colleagues of a rejected candidate would refuse to risk their lives with a man who before their eyes called a red light green. I was expressing these views when a superintendent of a railway company who is using my lamp told me that he had adopted this method with great satisfaction to himself and to the men. A man, for instance, who has been working 20 years on the railway has been rejected for colour blindness. He has complained bitterly to the superintendent, at the same time declaring emphatically that he is normal sighted. The superintendent has replied, "You know red?"—"Yes." "You know green?"—"Yes." "You will therefore agree that if you call green red or red green you ought to be rejected. Bring two or three of the other men in with you and I will test you." The man has readily agreed to this. The superintendent has then tested him by asking him to name various coloured objects in the room, and knowing by experience exactly the coloured objects which are miscalled by the colour blind readily exposes his defect. It is noteworthy that on some occasions a colour-blind man has been tested by another person in the same room without making any of the mistakes which he subsequently made, because none but coloured objects which he could readily recognise were shown to him. This is an example of the necessity of a practical knowledge of colour blindness in an examiner. On account of the arrangement of signals by sea and land it is necessary that persons employed in the marine and railway services should be able to recognise and distinguish between the standard red, green, and white lights in all conditions in which they are likely to be placed. An engine driver or sailor has to name a coloured light when he sees it, not to match it. He has to say to himself, "This is a red light, therefore there is danger"; and this is practically the same as if he made the observation out loud. Therefore, from the very commencement we have colour names introduced, and it is impossible to exclude them. The engine driver is told that red is a "danger" signal, green a "caution" signal, and white an "all right" signal. Therefore it is absolutely necessary that he should know the meaning of these colour names. A test should be such as to make it impossible for the examinee to be coached through it. This is one of the most important requirements of a test for colour blindness, and one that is rarely fulfilled. Nearly every one of the tests in general use fail on this account.

A test should be one which can be carried out as rapidly as is possible with absolute efficiency; of two equally efficient tests the one which takes the least time must be selected. A test, therefore, should have no unnecessary details which, though of theoretical interest, are not concerned with the object in hand. The test should be made as easy and as little complicated for the examiner as possible.

#### III. *Persons to be Excluded.*

We wish to exclude all those individuals who are included in the following three classes: (1) those who see three or less colours in the spectrum; (2) those who, whilst being able to perceive a greater number of colours than three, have the red end of the spectrum shortened to a degree incompatible with their recognition of a red light at a distance of two miles; (3) those who are unable to distinguish between the red, green, and white lights at the normal distance through defect or insensitiveness of the cerebro-retinal apparatus when the image on the retina is diminished in size.

I will now explain why these three classes of persons should be excluded. The first class includes the trichromic, the dichromic, and the totally colour blind, in accordance with the facts previously stated. The trichromic never, in ordinary circumstances, mistake green for red, but confuse yellow with green or red. Colour is a feeble quality of objects to them, and nervousness or excitement may reduce them to the condition of the dichromic. The dichromic are liable to mistake a green light for red and *vice versâ*. It is very important that persons belonging to the second class should be excluded, and yet none of the ordinarily used tests detect them. The rays of red at the extreme left of the spectrum are the most penetrating, as may be seen by looking at a light or the sun on a foggy day, or through several thicknesses of neutral glass. It is chiefly by these rays that we recognise a red light at a distance; and it is therefore of great importance that a sailor or engine-driver should be able to perceive them. The third class contains persons who are able to distinguish colours easily when they are close to, but fail to distinguish them at a distance owing to the nerve-fibres supplying the central portion of the retina being impaired. As a light at a distance occupies the central portion of the visual field it is essential that the corresponding portion of the retina should be normal. There are cases of central scotoma for colours with perfect form vision; these would therefore not be detected by the test for visual acuity. This class also includes those who without having a scotoma are unable to distinguish between colours at the normal distance when the image on the retina is diminished in size.

#### IV. *The Construction of a Test for Colour Blindness.*

In the construction of a test for colour blindness the facts of colour blindness must be utilised so that the object and requirements of the test are fulfilled. The following facts are of practical importance.

1. *Most colour blind make mistakes with certain colours, but are correct with regard to others.*—This may be illustrated in the following way. Let us take an ordinary dichromic, and having given him the set of wools belonging to the classification test ask him to pick out all the reds. On examining the pile of wools selected as red it will be found that the majority are red, but in addition there will be some browns and yellow-greens. If he be then told to pick out the whole of the greens the greater number of those selected will be green, but there will be also greys, browns, and reds. In

[1] Lecture I. was published in THE LANCET of Feb. 4th, p. 285.

each case it will be seen that the majority of wools are of the desired colour.

If another dichromic be examined in the same way it will be found that, though he may not make exactly the same mistakes, he will in all probability pick out the same greens to put with the reds and the same reds to put with the greens. The same result will be obtained if the colour-blind persons be asked to name a large number of colours. They will in most cases name the colour correctly. It will be noticed that the greens which were put with the reds when classifying the colours will be called red in naming them. It is evident that the same idea has guided the colour blind in each case. This shows that, though a person may be red-green blind, he is not absolutely red-green blind in the sense of being totally unable to distinguish between the two colours. The fact that they are actually judging by colour may be demonstrated by giving them coloured materials of different kinds or by asking them to name a large number of coloured objects.

It will be seen that if we take a dichromic and ask him to name a number of red and green wools, in the majority of instances he will name them correctly. But as, almost invariably, the same wools are chosen, for all practical purposes the same result would be obtained by asking a person to name a few of these wools. What more decided and brighter greens could we have than Nos. 76 and 94 of my Pocket Test? Yet these are two of the greens which are called reds by the dichromic. We should have accomplished as much by asking a colour-blind person to name Nos. 76 and 94 as if we had asked him to name a large number of greens. The colours in a test should, therefore, be those which the colour blind are particularly liable to miscall. At the same time, their nature should be unmistakable to the normal sighted.

2. *The colour blind name colours in accordance with their colour perception, and thus show definitely to which class they belong.*—I have not come across a man who has guessed correctly when examined with my test. A man who did guess would know that he was incompetent. As the colour blind are often not aware of their defect they answer as they see, only guessing when they feel uncertain as to the nature of the colour shown. There is probably more misapprehension on this point than on any other in the practical testing of colour blindness.

3. *Colours may be changed to the colour blind whilst leaving them unaltered to the normal sighted.*

4. *The phenomena of simultaneous and successive contrast are much more marked for the colour blind than for the normal sighted.*—Two colours, which have not changed in the slightest degree to the normal sighted on being contrasted, have apparently altered very considerably to the colour blind. As an example of this, let us take a pure deep yellow, a bright red, and a bright green. To the normal sighted the yellow will be altered very little by comparison with the red or the green, but a trichromic would say that the colour was green when contrasted with the red, red when contrasted with the green. This principle of exaggerated contrast must be borne in mind when examining a candidate. Thus, if a trichromic be doubtful about a yellow, but seems inclined to call it green, he should be given a pure green to compare with it. In the same way, in showing the coloured lights the same colour produced in a different way should often be shown. Thus, an orange-red may be shown immediately after a pure red. This will not alter the colour to the normal sighted, but greatly facilitate the examination of the colour blind.

5. *Many colour blind match correctly but name the principal colours wrongly.* Therefore the test must be a naming test, the examinee being rejected if he confuse the colours which it is essential he should distinguish between in his occupation.

6. *Many colour blind recognise colours easily when they are close to them or the surface is large, but fail to distinguish between them when they are at a distance or the image on the retina is small.* The test must be constructed in conformity with these facts.

7. *The colour blind are more dependent upon luminosity than the normal sighted, and are liable to mistake a change in luminosity for a change of colour.* The test should have a means of rapidly changing the luminosity of a colour.

8. *The colour blind find special difficulty with faint and dim colours.* The test should have colours of this kind.

9. *The colour blind who have shortening of the red end of the spectrum cannot see reds reflecting or transmitting only rays corresponding to the shortened portion.* It is essential that reds of this kind should form part of the test.

10. *The colour blind find more difficulty in comparing colours when different materials are used than when the coloured objects are all of the same nature.*

11. *Most colour blind find more difficulty with transmitted than with reflected light.*

12. *The colour blind have a defective memory for colours.*

13. *Colours may be changed to the normal-sighted whilst leaving them unchanged to the colour blind.*—When three colours of the normal-sighted are included in one of the colour blind, it is obvious that a change from one colour to another of the three will make no difference to the colour blind. Also, when the spectrum is shortened the addition of rays corresponding to the shortened portion to another colour will not alter its appearance to the person with the shortened spectrum. For instance, to a person with shortening of the red end of the spectrum a blue will still remain blue when so many red rays from the shortened portion have been added to it as to make it appear rose to the normal sighted.

14. *The colour blind may have a sense of luminosity similar to that of the normal sighted.*

15. *The dichromic distinguish between the colours of the normal sighted which are included in one of theirs by their relative luminosity and the difference of a saturation which is apparent to them.*—A test should therefore have the means of presenting colours of different saturation in succession. Colour blindness is often associated with exceptional intelligence and ability.

### V. *The Lantern*[2] *Test.*

1. *Description of apparatus.*—The lantern contains four discs: three carrying seven coloured glasses and one with seven modifying glasses. Each disc has a clear aperture. The other mechanical details are: an electric or oil lamp with projecting accessories, a diaphragm for diminishing the size of the light projected, handles for moving the discs and the indicator showing the colour or modifier in use. The diaphragm is graduated in respect to three apertures to represent a 5½ inch railway signal bull's-eye at 600, 800, and 1000 yards respectively when the test is made at 20 feet. The glasses are as follows:—

| Coloured glasses. | Modifying glasses. |
|---|---|
| 1. Red, A and B. | 7. Ground glass. |
| 2. Yellow. | 8. Ribbed glass. |
| 3. Green. | 9. Neutral (No. I.). |
| 4. Signal green. | 10. Neutral (No. II.). |
| 5. Blue. | 11. Neutral (No. III.). |
| 6. Purple. | 12. Neutral (No. IV.). |
| | 13. Neutral (No. V.). |

It will be noticed that three of the discs are similar in every respect. In some of my lanterns the two reds are put at the end of the series of colours and numbered Red 1 and Red 2. This makes no important difference, but the arrangement given here is more convenient. It should be noted that Red 1 corresponds to Red B and Red 2 to Red A. If the electric lamp should get broken the projecting apparatus can be removed and an ordinary kerosene lamp placed behind.

2. *Reasons for special construction.*—The lantern has been constructed conformably with the requirements and facts of colour blindness. All the facts I have given have been considered in constructing the lantern.

The examiner on possessing a lantern for the first time should carefully test himself with it and ascertain how the different lights appear to him with different conditions of general illumination. It is probable that certain improvements may suggest themselves to him; therefore, I think it will be advisable to deal with certain of these points, as it will help the examiner in the use of the lamp. The colours have never been altered and I certainly should have altered them if I could have improved the lamp by doing so. I have never met with a single colour-blind person who has not been readily and easily detected with my lantern though I have examined many who have passed other lanterns and in some cases a number of other tests for colour blindness. In most cases one turn of the wheel will be sufficient to make a colour-blind person disclose his defect.

The examiner may be dissatisfied with the colour of the blue, let us therefore compare an examination of a normal-

[2] Made by Reiner and Keeler, 9, Vere-street, London, W.; and Meyrowitz, 1A, Old Bond-street, London, W.

sighted person with that of an ordinary dichromic. The normal-sighted person will name every one of the colours with ease and certainty, with perhaps the exception of the blue, with which he is in some doubt. Here is the result of an examination of an ordinary dichromic: he called the yellow, green; the green, red; the signal green, no colour; the blue, blue; the purple, green; red A, no colour or light; red B, green.

It will be noticed that the only colour that he has correctly named is the blue. We can try him again and again, and though he will mistake all the other colours he will always name the blue correctly. The examiner will have learnt from this several important facts. He will see that the colour blind are really guided by their sensations of colour and that it is not simply a matter of guessing. The more an examiner has practical experience of colour blindness the more will he recognise the fact that the colour blind are guided by their sensations of colour. He will notice that the dichromic has readily recognised the blue which was scarcely apparent to him (the examiner), and therefore cannot have overlooked as a matter of carelessness colours which are much more apparent to the normal sighted. The blue is a valuable colour for other reasons, for though it is not a colour on which I reject candidates, anyone miscalling it must be very carefully examined before he is passed. The trichromic generally call this blue, green. If we wish to obtain a purer blue we can do so by combining the blue or the purple with the signal green.

Again, the examiner may think that it might be better to have an apparatus which showed two or three lights instead of only one; I will therefore give my reasons for adopting only one. This point was one which occupied my attention for a considerable time, especially in view of the fact, which, as far as I am aware, I was the first to discover, that simultaneous contrast is increased to the colour blind. I was naturally anxious to turn this fact to account. I found, however, that I gained nothing by increasing the number of lights, and that in many cases it was a source of error. A second or third light could have been easily added to my lantern, but besides unnecessarily complicating the apparatus it would have served no useful purpose. All the results which are obtained with simultaneous contrast are obtained even more effectively with successive contrast. It will be noticed that when lights are seen in ordinary conditions, they are conditions of successive contrast and not of simultaneous contrast. An observer rarely keeps his eyes definitely fixed on one light whilst he names those adjacent to it, but moves his eyes so that the images of the respective lights fall successively on his foveas. When more than one light is employed all the disadvantages of matching as against naming are introduced. It will be seen that by presenting one light after another we are fulfilling all the necessary conditions, only that the light is moved instead of the eyes, sufficient time being allowed to elapse to enable a normal-sighted person readily to recognise the true colour of the next light without being confused by the after-image of the one he has just seen. Many nervous normal sighted would name a yellow light seen between two red lights as green, and it does look green to them from ordinary physiological conditions. They look first at one red light, then immediately at the yellow light, then at the second red light, and then again at the yellow light until they feel sure that the centre light is a green light and say so. I have never met with a normal-sighted person who has miscalled the yellow light of my lantern either red or green. Many humble nervous normal-sighted persons are under the impression that they are colour blind and yet would make perfectly efficient officers. Many of these men have been told by their wives or other persons that they are colour blind, and believing this try to see colours which are not visible to them. I have examined many persons of this description and have noted the ease and accuracy with which they have gone through the tests for colour blindness when they have been assured by me that they were normal sighted. On the other hand, it is often very difficult to convince a self-reliant colour-blind person that he is colour blind. He is on the look-out for the small differences which he notices between colours, and the fact of having another light for comparison gives him the desired clue, and though colour blind he passes the test.

The material is the best possible, as it will not fade like all dyed substances, and therefore all records made with one set of apparatus will be uniform. Again, a coloured light has none of the accessory qualities which enable the colour blind to pass through other tests. Thus many dichromics will call the yellow glass red or green, who would not think of putting a yellow with a green or red wool, on account of the difference in luminosity. He will in the same way if told to pick out colours in the Classification Test to match the colour of the light shown, have to depend upon his colour perception. This is a useful method with nervous and undecided candidates. The objection to it is that it cannot be carried out in the dark room. The test is not open to any of the objections which may be urged against the method of simply naming colours, because the character and intensity of the colour may be changed at will.

The method is better than that of direct comparison, because the candidate is forced to use his colour perception and has to compare the colour seen with previous impressions of colour in his mind. By the use of neutral glasses, &c., I have obviated the fallacy of the method of naming colours—namely, that these can be distinguished by their saturation and luminosity—and forced the individual to depend upon his colour perception and not upon some other accessory quality of the object seen.

No amount of coaching will enable a colour-blind person to pass this test, whilst almost any other may be passed in this way. I have tried on many occasions to coach a man so as to pass my lantern and without success. The combinations are so numerous that the only result is to make the colour-blind man nervous and doubtful and more easily detected than before. This has occurred with men who could pass other tests with ease. The test, also, has a quality possessed by no other—namely, that of enabling the examiner to reject dangerous persons, and dangerous persons only, the lower degrees of colour blindness being allowed to pass.

3. *Special directions for conducting the test.*—1. The candidate should be seated at a distance of 20 feet from the lantern. 2. He should be asked to name the colour of the light produced by a coloured glass (1 to 6) alone, or in combination with another coloured glass or glasses, or with the modifying glasses (7 to 13). 3. A candidate should be rejected (*a*) if he call the red green, or the green red, in any circumstances; (*b*) if he call the white light, in any circumstances, red or green, or *vice versâ*; (*c*) if he call the red green, or white lights black, in any circumstances. 4. A candidate who makes mistakes other than those mentioned above should be put through a very searching examination. It is not necessary to have the room absolutely dark; in fact, I prefer a certain amount of light. The examiner can, if he wish, make the test at night in the open air.

The examiner should on no account conduct the examination on any regular plan, because the candidate, anxious to pass, finds out from persons who have already passed, the order and method of examination, and so, though colour blind, might obtain a certificate. Any one of the glasses may be shown first, and the candidate required to name the colour of the light. The following will serve as an example of the method to be employed in testing a candidate. A red being shown, the candidate is required to name its colour. Then a blue or green may be substituted. It is best to use the largest aperture at first and to show all the colours on one disc. This will give confidence to the normal-sighted candidate, whilst most of the colour blind will be detected. In the case of candidates who appear to be normal sighted and yet very nervous there is no harm in telling them after they have named all the colours on the disc correctly that this is the case. No comment should, however, be made on individual answers. Then one of the neutral ground or ribbed glasses should be inserted, not the slightest intimation being given to the candidate of the nature of the colour. He should be asked to name or describe the light, and the answer, if incorrect, together with his other replies, carefully recorded. The other glasses may then be shown, a combination of the neutral, ground, ribbed, and coloured glasses being used at irregular intervals.

When the candidate has been examined with the largest aperture the examiner can go through the same procedure with one of the smaller apertures. I have found the third aperture the one which is most generally useful. On account of the great diminution of total luminosity caused by

the diminished area of the light source, the three smallest apertures can only be used in a dark room.

If a candidate hesitate about a colour and ultimately name it correctly, a second, and if necessary a third, glass of the same colour should be combined with the first. The fact that in one case a single glass is used and in another two or three of the same coloured glass makes very little difference in the colour of the light to the normal sighted. This is not the case with the colour blind; a dichromic who has hesitated about a green and then correctly named it may emphatically call the light red when another green glass is put in front of the first.

Care must be taken when the candidate is going to be examined with two glasses at once, such as one of the neutral, ground, or ribbed glasses, and a coloured glass, that he does not see the light until both are in position, or else he may see the colour before it is modified in the necessary way.

If the candidate call the standard red green, or the standard green red, in any circumstances—that is, either alone or in combination with the modifying glasses—he is to be rejected.

The examiner should ascertain for himself how far the various colours are visible when modified with the neutral glasses. If the red and green be not visible with the thickest neutral, in the conditions of luminosity and external lighting which the examiner is employing he should use the darkest neutral which allows the colours to be plainly visible to the normal sighted. In all cases of doubt the examinee should be asked to walk towards the lantern and told to say when the light is visible and asked to name its colour. The distance at which the light is visible and then that at which the colour is visible should be noted and compared with the normal.

Particular attention should be paid to the answers given to the combination of the thickest neutral glass with the standard red and green respectively.

The examiner should utilise the fact that successive contrast is increased in the colour blind as this is an easy method of detecting the trichromics. The red having been shown the light should be quickly changed to yellow or clear, the examiner's hand being placed over the aperture if there be any intervening colours. It is necessary that the yellow should be shown immediately after the red without any intervening colours being first seen by the candidate. The normal sighted do not see any change in the yellow or clear when they are shown after the red light, but the trichromic call the yellow light green. The examinee should then be shown the green light and then the yellow or clear in the same way as mentioned for the red. The normal sighted will easily recognise the yellow, but the trichromic will call it red. This portion of the examination must never be omitted in any examination in which the candidate is passed. The two divisions of the test—that is, showing yellow immediately after red and after green—may be used at different periods of the examination, and if there be any doubt repeated.

An examiner should, as far as possible, with the exceptions given in the instructions, avoid all conversation with the candidate, simply asking, "What colour is this?" and recording the answer without comment. If an examiner after each answer say, "Quite right," or some such expression, the following is likely to occur. The candidate after, say, six correct answers makes a mistake; the examiner says, "Are you sure?" Then the candidate knows at once that he has made a mistake, and makes a guess, very probably a correct one. When a similar colour is shown subsequently he remembers the mistake he made and gives the second, and probably the correct, answer.

In addition to being an efficient test it is a very rapid test, as many men who have been certified as normal after a lengthy examination with other tests have at once disclosed their defect by calling the green light of the lantern red. Many are under the impression that in an examination with the lantern the dichromic simply guess. This is entirely wrong. A man who did guess would know that he was incompetent. I find that men have named the coloured lights in strict accordance with their colour perception. A man may, however, guess if examined by an inexperienced and ignorant examiner who, when the examinee has made a mistake, promptly corrects it in a cross tone. A normal-sighted person will guess when examined in this way. The examiner must receive the examinee with a smiling face and courteous manner and appear pleased and satisfied with the answers, no matter what they may be. The candidate is then placed at his ease and answers according to his colour perception. It will be noticed that the lantern detects those who have a slightly diminished colour perception as well as the dangerous varieties of colour blindness. The former undoubtedly are not as efficient as those who have a normal colour perception, so that a definite standard will have to be fixed as in the case of visual acuity. Further details will be found in my book on colour blindness.[3]

*Summary of method of examination.*—1. Show all the colours on one disc with the largest aperture. 2. Show the reds, greens, and yellow modified by the neutral glasses. 3. Show all the colours on one disc with number 3 aperture. 4. Show red, then immediately afterwards yellow with largest aperture. Then show green and yellow immediately afterwards. 5. Test the candidate with the red, green, and yellow with the smallest aperture. 6. Show the neutrals or ground glass alone. 7. Show blue made by combining blue or purple with the signal green. 8. Show a colour, for instance, green, and then combine another glass of the same colour. 9. Show the red produced by the combination of purple with red A. 10. Give the combination of red A and signal green.

### VI. *Other Tests for Colour Blindness.*

I have three other tests for colour blindness—the classification test, the pocket test, and the colour-perception spectrometer. I have also devised an instrument for estimating the exact amount of red, at different wave lengths, which is necessary to neutralise the complementary in different persons.

1. *The classification test.*—(*a*) *Description.*—This test consists of four test colours and 180 confusion colours; 150 coloured wools, 10 skeins of silk, 10 small squares of coloured cardboard, and 10 small squares of coloured glass. The whole series of colours is represented. In addition, there are a large number of colours which have been chosen by colour-blind persons as matching the test colours. The test colours are orange, violet, red, and blue-green, labelled I., II., III., and IV. respectively. The colours are chosen with the view of presenting as much difficulty as possible to the colour blind and as little as possible to the normal sighted. The colour blind find especially difficulty in matching or naming a colour lying at the junction of two of their colours. As the normal sighted often find difficulty in saying which colour predominates in a blue-green, so do the tetrachromic with their purple-green, or the trichromic with their red-green. A colour-blind person may, however, match a colour correctly which corresponds to the centre of one of his colours. In addition to choosing those colours for tests which are particularly liable to be mistaken for other colours by the colour blind, I have used coloured materials of different kinds—wools, silks, glass, and cards—so as to force the colour blind to judge by colour, and not by saturation or luminosity.

(*b*) *Method of examination.*—The candidate should be given the four test colours, and, having named each, he should be told to select all those which are similar in colour to the test colour. He should be told to pay no attention to the fact of a colour being lighter or darker; as long as it is the same colour it should be put with the test skein. The examiner should not go through the test before the candidate first of all, neither should one candidate be allowed to watch another making his selection. A shrewd colour-blind person might pass the test if he had seen a normal-sighted person go through it previously. In order to show the candidate the difference between a shade and a colour the examiner should take one of the wools which is not a test colour—blue, for instance—and pick out four or five shades of the colour. The wools should be arranged without the knowledge of the candidate, so that a yellow or a grey is placed beside a red and the examinee asked to name its colour. At another period of the examination the yellow should be placed adjacent to a green and the examinee again asked to name it.

The examinee may pick out a certain number of colours correctly and then stop, saying that there are no more exactly like the test colour. This may embarrass the examiner; he should, however, examine any candidate who

[3] International Scientific Series, Kegan, Paul, and Co., 1909.

has omitted any colours as carefully as if mistakes had been made. He should ask the candidate to match one of the omitted colours.

The examiner will soon find out from experience those colours which are named and matched wrongly by colour-blind persons; he should ask the examinee to name some of these colours.

Any candidate should be rejected who calls an orange or red, green or brown; black, red, or *vice versâ;* or green, either purple, rose, red, grey, brown, or violet. Similar mistakes in matching necessitate objection. A candidate who puts purple, rose, or blue with violet, or yellow-brown with orange is most probably dangerously colour blind and should be very carefully examined. There are cases which pass the Holmgren test with ease that fail in the most conclusive manner with my classification test. They put green with orange, brown and black with red, and grey with blue-green. This is due to a different selection both of test colours and confusion colours. Orange is by far the most important test colour and its confusion with green by the dichromics is very conclusive. The three other test colours —violet, red, and blue-green—represent both ends of the spectrum and the neutral point in dichromic cases, and practically these colours are those with which most mistakes are made. This test can only be regarded as supplementary to the lantern test.

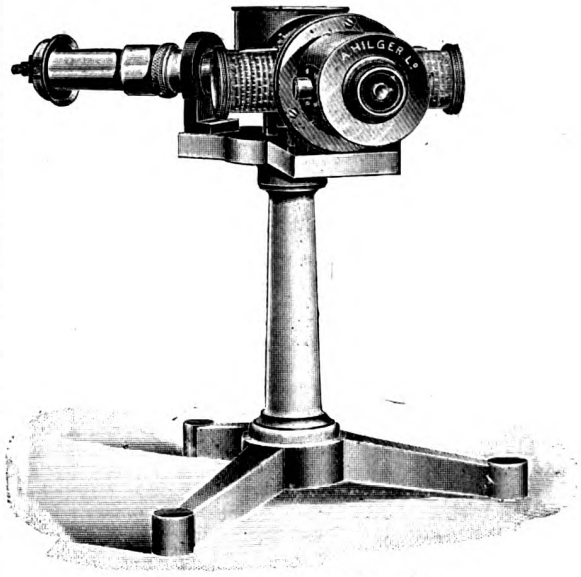
2. *The pocket test.*—This consists of 19 cards on 9 of which are 112 single threads of wool and 14 pieces of twisted silk similar to those in the Classification Test. These are numbered consecutively, with the exception of the first thread of the first four cards and the last thread of the next four cards. The end threads of the first four cards I. to IV. form the tests; they are orange, violet, red, and blue-green. There are also cards on which red, orange, green, blue, violet and purple, and grey respectively are to be found. There are also two special cards marked "Without Red" and two special cards marked "Without Green."

Many normal-sighted persons might object to the inclusion of some of the colours on the orange card, but this card clearly shows the colours which may be taken as a match. Fine distinctions are not wanted. The series of colours I have selected and arranged so as to confuse the colour blind and force them to be guided by their colour perception, whilst the quantity of colour is amply sufficient for the normal sighted to pick out the colours with the greatest ease. The cards should be arranged irregularly on a white cloth in a good light. The two most important test colours are the orange and violet, Nos. I. and II. The person examined should be asked to point out the shades of colour similar to No. I (orange). A piece of paper rolled to a point should be used for this purpose. If he does this correctly he probably possesses normal colour perception. If, however, he matches the test with reds or pinks he is more or less colour blind, at best belonging to the pentachromic class. If, in addition, he matches the violet test, No. II., with blue, he at least belongs to the tetrachromic class. The trichromic, in addition, may match the blue-green test, No. III., with brown and grey. The dichromic will match the orange test, No. I., with yellow-green and yellow-brown. Similar mistakes will be made to those described in connexion with the Classification Test. The examinee should be asked to name all the colours on one of the cards. He should also be asked to point out on which of the cards the four test colours are to be found and which contain none of the test colour. The examiner should continually change the order of the cards. Most of the varieties of the colour blind will be readily detected in this way.

The special advantages of this test are: 1. The colour blind can be ranged definitely in their proper classes. 2. Central scotoma can be detected with its aid. 3. The series of colours are arranged so as to confuse the colour blind, whilst the normal sighted easily match the test colours. 4. On account of the introduction of different materials the relative luminosity and saturation of colours does not serve as a guide to the colour blind. 5. Portability. 6. The wools and silks are kept clean. 7. An important colour is not likely to be lost.

3 *The colour-perception spectrometer.*[4]—(*a*) *Description of apparatus.*—This instrument is a spectrometer so arranged as to make it possible to expose to view in the eyepiece the portion of a spectrum between any two desired wave-lengths (Fig. 1). In the focal of the telescope are two adjustable shutters with vertical edges; the shutters can be moved into the field from right and left respectively, each by its own

FIG. 1.




The colour-perception spectrometer.

micrometer screw, and to each screw is attached a drum (Fig. 2), the one being on the right and the other on the left of the telescope. On each of these drums is cut a helical slot in which runs an index, and the drum is engraved in such a manner that the reading of the index gives the position in the spectrum of the corresponding shutter in wave-lengths direct. Thus it will be seen that if, for

FIG. 2.

Drum attachable to micrometer screw.

instance, the reading on the left drumhead is 5320, and that on the right drumhead is 5920, the region of the spectrum from wave-length 5320 to wave length 5950 is exposed to view in the eyepiece.

(*b*) *Directions for using the instrument.*—It should be used, as far as possible, with a known quality and intensity of light. A small oil-lamp is quite suitable for the purpose. The observer should first ascertain the exact position of the termination of the red end of the spectrum, the left-hand shutter being moved across until every trace of red just disappears. The position of the pointer on the left-hand drum is noted and the wave-length recorded. The left drum is then moved so that the shutter is more towards the middle of the spectrum. The right-hand drum is then moved until the pointer indicates the wave-length recorded as the termination of the red end of the spectrum. The observer then moves the left-hand shutter in and out until he obtains

[4] Made by A. Hilger, 75A, Camden-road, London, N.W.

the largest portion of red, which appears absolutely monochromatic to him, no notice being taken of variations in brightness, but only in hue. The position of the index on the left-hand drum is recorded. The left-hand shutter is then moved towards the violet end of the spectrum, the right-hand shutter being placed at the position previously occupied by the left-hand shutter. In this way the whole of the spectrum is traversed until the termination of the violet end of the spectrum is finally ascertained with the right-hand shutter. The variation of the size of the patches and the terminations of the spectrum with different intensities of light can be noted. The instrument can also be used for ascertaining the exact position and size of the neutral patch in dichromics, the position of greatest luminosity, and the size and extent of pure colours. When it is used to test colour-blindness the examinee should first be shown some portion of the interior of the spectrum, and then asked to name the various colours which he sees. In this way he will have no clue to the colours which are being shown him.

*Objections to other tests for colour blindness.*—The tests which have been proposed for colour blindness are very numerous, but some are so defective that it is rare to detect a single colour-blind person with them. I have, for instance, tested men whom I knew to be colour blind with certain lanterns, with the result that not a single one was detected. In these so-called tests all the requirements of a test and facts of colour blindness have been neglected. I must, however, refer to three tests constructed by exceptionally able men, each with considerable knowledge of the subject. I refer to the tests of Professor Holmgren, Professor Stilling, and Professor Nagel.

All these tests can be passed at the first attempt without coaching by certain dangerously colour-blind persons, chiefly varieties not known to the inventors, but the chief defect of each is that it is very easy to coach a colour blind person to pass it. The surgeon to one of our largest railway companies told me that when they used Holmgren's test they rejected one man in 300, but with my lantern 12 in the same number. All these three tests are much better tests when the persons to be examined have not seen them before. A colour-blind man may make only one mistake—say, for instance, as in a case I examined the other day with Nagel's test (last edition), he passes the test perfectly with the exception of one mistake, that of calling a grey on one card green. All he has to do is to look for some distinguishing mark on this card in order to go through the test with the ease and certainty of a normal-sighted person. It is the same with Stilling's letters, he has only to note the letter which he was not able to read and the appearance of the card. A normal-sighted man or woman would readily help him. The confusion of green and grey does not appeal to the average man as a serious defect, especially when he sees his friend go through the rest of the test perfectly. He says to himself, I suppose, he sees a tinge of green in that grey. The same man would rightly regard it as a most iniquitous proceeding to endeavour to coach his friend through a test when he had seen him mistake a red for a green light.

Holmgren's test rejects a large number of normal-sighted persons, as may be seen by the reports of the Board of Trade; about 50 per cent. of those who appeal are found to be normal sighted and to have been rejected wrongly.

THE CONVALESCENT HOMES ASSOCIATION.—This association has just issued a useful list of convalescent and other homes receiving London patients with particulars of the terms of admission and other useful information. The list includes homes for men, women, and children, homes for children only, patients requiring surgical treatment, homes for mothers and infants, homes for gentlewomen, and sanatoriums for consumptive patients, the terms of residence ranging from 3*s.* 6*d.* per week upwards. The association points out that they accept no responsibility with regard to the institutions named, and that inclusion in the list does not necessarily imply recommendation nor exclusion the reverse. The compilation will, however, we think, prove of great utility to medical practitioners when selecting a convalescent home for their patients, especially those of limited means. The book can be obtained at the offices of the association, 32, Sackville-street, London, W., at the price of 6*d.*

# THE PATHOLOGY AND TREATMENT OF INJURIES CAUSED BY ELECTRICITY.[1]

BY SIR THOMAS OLIVER, M.A. DURH., M.D. GLASG., F.R.C.P. LOND.,

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THE increasing use of electricity is introducing fresh dangers within our midst. As an illuminating agent it stands supreme and for motive power its utility is unquestioned. Electricity is therefore likely to have an extended sphere of application in the future. Its powers of maiming the body and of immediately destroying life are well known. Since 1902, the year in which death by electricity became notifiable to the Home Office, the following are the numbers of fatal cases which have been reported: In 1902, 7; in 1903, 4; in 1904, 6; in 1905, 7; in 1906, 10; in 1907, 11; in 1908, 2; and in 1909, 12. Notwithstanding the precautions which have been taken the number of fatal cases has increased, but this is largely in consequence of more persons being brought into contact with electricity. If we add to the above the many cases in which both minor and severe injuries have been received during recent years we can appreciate the need of having regulations drawn out for the guidance and safety of workmen. It is only because the majority of practical electricians are a well-educated and careful class of workmen that accidents are not more frequent. It is the unskilled labourers who contribute largely to the death roll. Many of the accidents are due to inadvertent contact with exposed parts of highly charged metal not sufficiently insulated or to workmen during alterations touching wires into which the current previously withdrawn has been unexpectedly diverted. Usually it is only a single person who is thus fatally caught in the round of the current, but the danger extends to all who unprotected attempt to succour him. The escape of electrical currents, too, under particular circumstances may become the cause of a catastrophe of an appalling nature. How far the West Stanley explosion of nearly two years ago, in which 166 lives were lost, was the result of an electric spark having fired the coal dust in the mine it is impossible to say. Electricity cannot be trifled with. Experience and experiment alike point the way by which some of the dangers incidental to its use may be averted. The danger depends upon the amount of current passing through the body, the kind of contact, and the insulated position of the individual at the particular time. If he is wearing damp boots, standing on wet soil, and his skin is moist, all of these will aggravate the effects of an electrical shock. The danger is not one of high potentiality of current alone, but of it *plus* the conditions under which the current is received.

Voltage in electrical parlance means pressure or electromotive force. It is difficult to say what voltage is fatal to man. In the United States where the current has been used for the electrocution of criminals not less than 1450 volts has been insisted upon, but in some instances death was not instantaneous. As regards illumination of factories, there is one case on record where a lad on taking hold of a lamp which had been burning badly was killed by a 200 volts alternating current. On the other hand, contact with currents carrying 2000 volts pressure has been made and no serious injury followed. Although opinions are divided as to the comparative dangers of "continuous" and "alternating" currents, it is generally believed that of the two the "alternating" current is the more dangerous. Between 1902 and 1908 there were three fatalities due to continuous currents of 250 volts and lower, whereas during the same period 30 deaths were the consequence of alternating currents. The Board of Trade considers alternating currents to be twice as dangerous as continuous. There is no proof that any one man is more susceptible to electric shock than another. It is, as already stated, rather a question of good or bad contact, dampness of skin, and amount of current entering the body. A dry skin offers greater resistance to the entrance of electrical currents than the same when moist. Where the contact is good and conditions

[1] Part of a clinical lecture delivered in the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Nov. 23rd, 1910.

are favourable there may be great destruction of tissue locally or there may be sudden interruption of nerve connexions which cause immediate death. With milder exposures what happens is that the muscles are thrown into a state of tetanic rigidity so that the individual cannot relax grip of any charged object he has taken hold of, and until the circuit is broken it is dangerous for any other person with unprotected hands to try to rescue him. Effects are only produced when electrical currents enter and leave the body. Any pain experienced may be the result of over-stimulation of sensory nerve endings in the skin, strong cramp-like contraction of muscles, or of the local action at the point of contact of the accumulated products arising from electrolytic decomposition. If the injured person does not lose consciousness fear may cause him to faint, and on the re-establishment of the circulation memory of the harrowing event is apt to retard recovery. The individual either remains nervous for a long time afterwards or he complains of frequent headache and ill-defined pains throughout his body, which are aggravated by disturbed electrical conditions of the atmosphere. Within the last two years I have seen two cases in which severe burning was caused by high pressure currents. One of the patients succumbed to his injuries within seven hours after the accident.

CASE 1.—On Jan. 10th, 1909, a labourer, aged 22 years, was admitted into the Newcastle-upon-Tyne Royal Victoria Infirmary in a state of unconsciousness. His body was in places much burnt. He had been working at an electrical power station, and coming into contact with unprotected metal he had received an electric shock from a current of 20,000 volts. There were several large angry-looking and œdematous burns on the shoulders, abdomen, and limbs, also a deep wound on the back of the head, exposing the occipital bone. He was extremely restless; kept shouting and throwing himself about in bed. I saw him with Dr. E. L. Markham, one of the house surgeons, about two hours after his admission. The pulse was rapid, 150 per minute; the heart's sounds were feeble, the pupils were dilated, and corneal reflexes were present. There was profuse perspiration. Shortly afterwards Cheyne-Stokes respiration developed, and within seven hours after his admission patient died, never having regained consciousness. For permission to make use of these details in this lecture I am indebted to my colleague, Mr. H. B. Angus. The post-mortem examination was made by Dr. George Hall, from whose report I extract the following:—

There are numerous charred burns of various sizes on different parts of the body, one of the most serious being a large wound about 3 inches by 2 over the right side of the occipital bone; the charred skin around this cracks on being bent. There is a large burn extending deeply into the muscles 3 × 3 inches over the right deltoid and surrounded by an inflammatory zone. Forearms and hands are badly burnt—third degree. There are four circular charred burns on the front of the abdomen and numerous burns of a similar character on the thighs and legs. On removal of the calvarium and on dividing the occipital bone it is found that while the charring has not extended right through the bone there are acute inflammatory changes in the diploë immediately underlying the superficial burn. The dura mater and membranes at this particular part are extremely congested. On section of the brain a hæmorrhage of about the size of a walnut is found in the substance of the occipital lobe. It corresponds to the external wound on the scalp; it is a quarter of an inch below the surface of the brain and is surrounded by softened tissue and by numerous petechial hæmorrhages in the white matter. The lateral ventricle and the brain tissues generally are congested. The lungs are congested at the bases. In the pericardial sac there are 1½ ounces of blood-stained serum and on the visceral layer of the pericardium numerous petechial hæmorrhages, especially over the base of the left ventricle. The left auricle and ventricle are distended with clotted blood; the muscle of the right side of the heart seems paler than that of the left; the valves are normal. Kidneys are deeply congested. Liver appears to be normal; spleen is congested and slightly larger than normal. Bladder is full of blood-stained urine which gives an acid reaction, has a specific gravity of 1020, contains albumin such as the presence of blood might account for; it is free from sugar. The duodenum and intestines show nothing abnormal.

Dr. F. W. Mott and Dr. Schuster have been kind enough to make sections of portions of the brain for me and to send me a report upon the same. To Dr. Mott and Dr. Schuster, as well as to the London County Asylums Board, I take this opportunity of expressing my grateful thanks. The report states:—

Hæmorrhages were visible to the naked eye in the sections of the brain. Microscopic examination showed that the hæmorrhages were due to ruptured vessels in the cortex and subjacent white matter (Figs. 1 and 2). The blood contained in the vessels and extravasated into the substance of the cortex showed in places evidence of hæmolysis, for amidst the corpuscles were areas of hæmoglobin like coagulum. The alcohol in which the tissues came was deeply stained with blood. The ganglion cells of the cortex all showed marked chromolytic changes (Fig. 3): not a cell could be seen showing the normal Nissl pattern. Many of the cells showed an intracellular network faintly stained with the basophil dye. In some places, especially where there was a hæmorrhagic extravasation, the cells were stained a uniform dull purple colour by the polychrome eosin stain as if a coagulation necrosis had occurred. The large and small cells of the medulla oblongata showed a marked chromolytic change (Fig. 4); there was an absence or great diminution of the chromo-phyllous substance. I do not think these changes could have been due to the time elapsing between death and the autopsy which was 40 hours, but of this I am not certain.

CASE 2.—A youth, aged 18 years, was admitted into the Royal Victoria Infirmary, under the care of Mr. Angus, on Sept. 22nd, 1908, suffering from burns inflicted by an electric wire. Whilst standing on a concrete floor he had touched a wire carrying 6000 volts alternating current with his right hand and received a severe shock. The palmar aspect of the right hand was deeply charred; the plantar surface of the right toes was deeply charred, and the skin beneath the left toes slightly burnt. The shock was combated with warmth and stimulants and the burns were cleansed and dressed with dry antiseptic gauze. Later on the burnt tissues of the right hand sloughed, exposing the flexor tendons, and by degrees the fingers became contracted into the palm. On Oct. 16th Mr. Angus amputated the terminal phalanges of the first, second, and third fingers of the right hand as these had become gangrenous, and he cleansed the palm. On the 20th a graft covering the palm was taken from the side of the chest after the manner of Tagliacozzi—viz., comprising everything in the skin down to the muscle layer—and sewn on to the hand, leaving, however, the base of the flap attached to the chest. In 17 days the flap was separated entirely from the chest. The graft was successful. Although considerably crippled the hand has been saved. The patient can grip a pencil between his right thumb and forefinger and can draw remarkably well.

Direct exposure to strong electric light may be followed by erythema of the skin accompanied by a sensation of heat and by redness of the part exposed to the rays of the electric arc. The features of electrical burns are extensive local destruction of tissue, an angry and gangrenous appearance of the wounds, and slow attempt at healing. The slowness of healing is to be explained not only by the completeness of tissue destruction but by the inclusion of the nerves in the process and by an ascending neuritis with probably death of portion of the nerves. Although the wounds are mostly on the surface yet internal injuries are in many instances received, for several of the victims suffer from convulsions and loss of consciousness. Frequently it is not until the patient is undressed that the extent of the injuries is realised. The boots, for example, may not exhibit any sign of injury, and yet on removing them the feet are found to be deeply lacerated and the bones exposed. Now and again it happens that a person receives a severe electrical shock and at the time there are no external signs of injury and no symptoms on the part of the nervous system. A few days afterwards signs of gangrene appear in some part of a limb and removal of the affected portion by surgical means has to be adopted; ere a few weeks are allowed to proceed gangrene appears somewhere else on the remainder of the limb. Operation after operation is performed in the hope of saving the patient's life, but the concealed internal injuries are so severe and of such an extensive nature as to baffle the resources of surgery.

When the organs of vision have been injured by an electric spark, the eyelids may become red and swollen, the eyelashes and the eyebrows burnt, or there may be marked hyperæmia of the conjunctiva, and complaint by the patient of the presence of a foreign body in the eye. A few days afterwards this is followed by a muco-purulent secretion, so that superadded to the primary hyperæmia there is an infective conjunctivitis frequently accompanied by a mild iritis. In the retinæ are found certain alterations which Davier speaks of as electrocution of the retina. The retina loses its transparency, a slight cloudiness surrounds both the papilla and the large vessels, and extends for a short distance beyond them. The papilla seems soft and its borders ill defined. The vessels appear to be smaller than normal, a circumstance which differentiates the lesion from specific retinitis. These structural alterations may be present without any diminution of the field of vision, and although they may persist for a time they are not followed, according to Minot, by atrophy of the optic nerve.

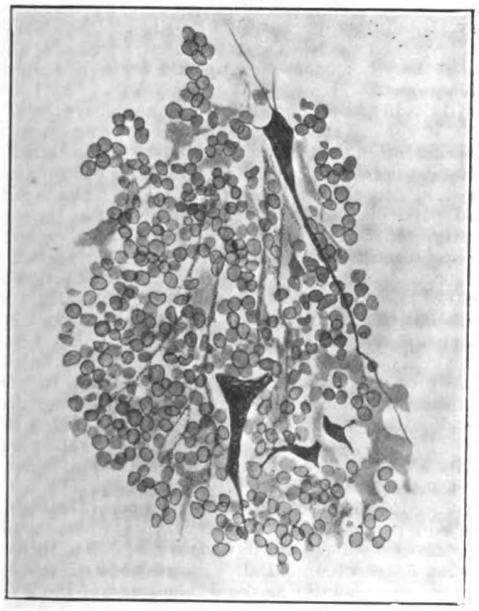
Among the functional eye troubles complained of, mention

may be made of dazzling and of the patient seeing objects coloured red, accompanied by restriction of the visual area. There are an increased watering of the eyes and photophobia, which make it difficult for the patient to gaze long at objects. A few days after the accident neuralgic pains are experienced in the globe of the eye itself or around it, and although the pains are intermittent they are apt to be specially severe at night time and are increased by pressure upon the eyeball and the superficial nerves. The nearer the eye was to the electric flash the greater is the danger to vision. There is always the risk of the trouble assuming the character of hystero-traumatism, where although images are formed perfectly upon the retina, owing to a purely psychical derangement they are not properly perceived. The treatment of electrical injuries of the eyes is difficult. The conjunctivitis is not readily influenced by eye-washes; the neuralgic pains which are stubborn to antipyrin and quinine yield to bromide of potassium.

FIG. 1.

Minute hæmorrhage in brain. In the section hæmoglobin had escaped from the corpuscles. Masses of hæmoglobin could be seen lying between the corpuscles.

FIG. 2.

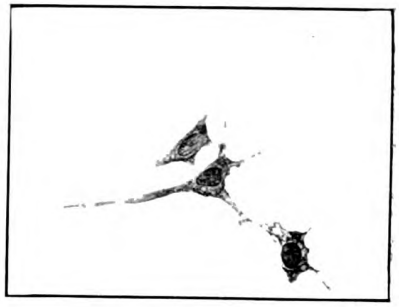


Cells in hæmorrhage. × 640.

What is the cause of death in electrical shock? It was after the Tuileries accident in 1884 that the subject attracted the attention of the medical profession. At that time Grange regarded the medulla oblongata as the part of the brain most sensitive to electrical currents. He had found numerous small hæmorrhages in the bulb which he believed caused death by arresting the action of the heart and respiration through excitation of the vagal centres. D'Arsonval believed death to be the result of stoppage of the heart and respiration.

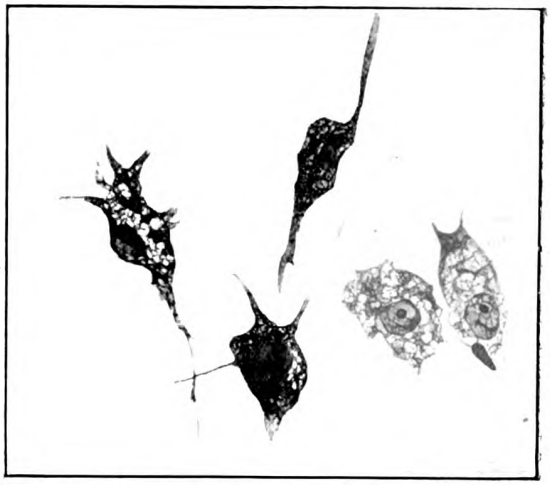
In 1889 Brown and Kennelly in Edison's laboratory carried out several experiments with the view of determining the action of alternating and continuous currents upon dogs and a horse, the voltage for alternating currents varying from 180 to 800. Death followed in from 2 to 65 seconds. With continuous currents the voltages varying from 1000 to 1420 one of the dogs died after ten consecutive shocks. With 700 volts alternating current a horse was killed in 25 seconds.

FIG. 3.



Cells in cortex.

FIG. 4.



Cells from medulla. × 810.

Tatum, experimenting with dogs in 1890, came to the conclusion that death was the result of the action of the electric current upon the heart itself, and that by section of the vagi or the use of atropine the influence of the bulb could be destroyed.

Kratter of Leipzig, writing upon the subject in 1896, lays stress upon the duration of the contact and the kind of animal employed, guinea-pigs and rabbits resisting shock better than dogs. It would seem as if the danger from electric shock increased with the higher development of the central nervous system. With the view of throwing some light upon the subject, in association with Professor Bolam I

performed a series of experiments in 1898.[2] Since in the majority of our experiments the heart was more or less suddenly arrested, while respiration continued, the conclusions we came to were that when death immediately supervenes it is the result of the action of the electric current upon the heart, but whether this organ is paralysed by the current, killed by electrolytic changes, or brought to a standstill by great resistance offered through constriction of the peripheral arteries it is difficult to say.

MM. Prévost and Battelli[3] of Geneva University found that alternating currents of comparatively feeble tension, 20–40 volts, produced fibrillary tremor of the heart; that the heart became paralysed, but that respiration continued; also that with alternating currents, 240–600 volts, respiration and the beat of the heart were immediately arrested; also that high continuous currents were followed by similar effects, but that low voltages did not produce fibrillary tremor.

There are two main theories as to the cause of death in electric shock: (1) inhibition of the medulla oblongata, leading to arrest of respiration, followed by cessation of the beat of the heart; (2) death directly from the heart without the intermediary of respiration. Professor Bolam's and my own experiments rather showed death to be of cardiac origin.

After death from electric shock there is usually found rigidity of the muscles. The heart is flaccid, especially the right ventricle, which contains dark fluid blood. The left ventricle may be empty. The lungs may show nothing abnormal, or there may be signs of congestion if death was not immediate and artificial respiration had been resorted to. The pupils are dilated. The brain and spinal cord may be congested, and the abdominal veins and viscera full of dark blood. There may be hæmorrhage in the brain and petechial hæmorrhages in the pleura and pericardium. Although the blood is usually fluid, it is occasionally coagulated. On spectroscopic examination it is found to contain both oxy-hæmoglobin and reduced hæmoglobin. I have already mentioned the chromolytic changes in the cerebral cells which Dr. Mott found in the portions of brain I submitted to him for microscopical examination.

A lecture on death from electrical shock would be incomplete were no reference made to the electrocution of criminals as carried out in the United States of America. Dr. Léonce Minot[4] has collected cases and summarised them for us. It was in 1889 that the State of New York substituted for hanging death by electrocution. The use of alternating currents was adopted, the voltages varying from 1485 to 2000 and the contact from 10 to 52 seconds. On several occasions a second, third, and even a fourth contact had to be made before pulse and respiration ceased, and even then in one instance three minutes after successive contacts with 1790 volts, and 1900 for eight seconds, and although the current was gradually reduced to 250 volts for 53 seconds there were yet signs of life. Consciousness and respiration were usually abolished after the first contact, but the pulse remained perceptible even when the voltages were higher than 1400. Necropsies of the criminals were made with care. No lesions of a gross character were found which could be regarded as characteristic of death by electricity. At the parts of the body where the electrodes had been applied there were signs of burning. On opening the bodies the blood was found to be dark and fluid, and the organs congested, especially the lungs; there were subpleural and subpericardial ecchymoses; in one instance there were capillary hæmorrhages in the floor of the fourth ventricle. None of these lesions are pathognomonic, since they are found in a certain number of deaths from violent causes, such as hanging, strangulation, and drowning.

*Treatment of the injured.*—For slight shock followed by recovery no treatment is required. For burns the application of boric acid compresses, or charcoal poultices if there is much destruction of tissue, is called for. Where an injured workman is in contact with, or cannot lose grip of, live metal the greatest care must be exercised in touching his body, for any attempt to separate the two might be followed by a disastrous shock to the person rendering assistance. Under any circumstances the breaking of the current means a fresh shock to the individual concerned. The rescuer should have his hands in india-rubber gloves or wrapped round with thick, dry rags. If it is a live wire with which contact has been made this should be cut if possible with long iron scissors in wooden handles. Once the circuit is broken, should there be no signs of life, the body must be placed upon its back and artificial respiration immediately resorted to and continued for a considerable time. Even if there is no quick response, artificial respiration should be continued. In our experiments we succeeded in resuscitating animals whose heart and respiration had ceased for several minutes, and at the Home Office Arbitration Inquiry concerning regulations for electric power-stations one of the witnesses stated that at his works in one man who had received 2000 volts shock the doctor pronounced life to be extinct, but his fellow workmen, to their credit, be it said, immediately resorted to artificial respiration, and as the result of having kept this up for over an hour the man is at work to-day.

Newcastle-on-Tyne.

[2] Brit. Med. Jour., vol. i., 1898, p. 132.
[3] Journal de Physiologie et de Pathologie Générales, Paris, 1889.
[4] Des Accidents Causés par l'Emploi Industriel de l'Électricité, Paris, Steinheil, 1908.

# AN EXPERIMENTAL INVESTIGATION INTO THE QUESTION OF THE POSSIBILITY OF MODIFYING THE EFFECT OF AN INOCULATION OF TUBERCULIN BY COMBINING WITH IT A LOCAL ANÆSTHETIC.

BY H. WARREN CROWE, M.D. OXON.

MANY of the recently observed phenomena associated with the exploitation of that form of treatment known as "active immunisation" are extremely difficult of explanation on any hypothesis at present in vogue. It appears that the scope of modern theories of immunity is too confined. Anaphylaxis has produced many ingenious explanations, but none entirely satisfactory. The tuberculin "reaction" is another example; and not less so, that curious effect which follows the repetition of equal small doses of tuberculin in phthisis, allied as it may or may not be to anaphylaxis or to the tuberculin reaction proper.

It will readily be admitted that the nervous system plays the rôle of general supervisor to the various functions which together maintain that fine adjustment to environment which constitutes the fact of "life." In a former communication[1] I suggested that the nervous system might be endowed with a more particular control over certain of the processes of immunity. If such an influence could be demonstrated, then a new and hitherto unexplored field would be opened up for investigation, and, in fact, the present narrow scope of the theories of immunity would be enlarged.

Much patient endeavour must be expended before it could be claimed that such an elusive factor as "nerve control" was definitely proved to have any important bearing on the intimate processes of immunisation. Still, as a first halting step in that direction I venture to submit the investigations herein detailed. The only question upon which I attempt to throw light is whether the inoculation of tuberculin produces its effect in any degree by stimulating afferent nerve endings at the site of injection.

My procedure has been to combine a considerable proportion of a 4 per cent. solution of beta eucaine lactate with varying doses of tuberculin in various cases of phthisis under treatment by vaccines. Daily observations of the opsonic index were recorded during the whole course of the investigation, and as far as possible the blood specimens were taken at the same hour of the day. I must express my gratitude to Dr. Alexander Noble for the invaluable aid he has given me in his untiring efforts to make the indices reliable. It will readily be understood what an advantage there is in having the indices determined by an independent observer.

Table I. shows records of 24 inoculations of tuberculin given in the ordinary way, though seven of these were interspersed amongst doses combined with eucaine, with a view to providing controls.

Table II. consists of similar records where in each case the tuberculin was combined with from 0·3 to 0·5 c.c. of a 4 per cent. solution of eucaine in a ¼ per cent. lysol.

[1] THE LANCET, April 23rd, 1910, p. 1130.

TABLE I.—*T.R., No Eucaine.*

| No. | Dose in thousandths of a mgr. | Initials of patient. | Date. | Opsonic curve.* | Temperature curve.† | Malaise. | Auto-inoculations.‡ | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1 | 1/100 | M. B. | 12/7/09 | – F. | Rise. | Yes. | No. | Prolonged negative phase. |
| 2 | 1/50 | C. G. | 30/7/09 | F.R.F. | Rise. | Yes. | Yes, 1. | Prolonged negative phase. |
| 3 | 1/100 | ,, | 27/10/09 | F.R.F. | Rise. | Yes. | Yes, 2. | Slighter phases. |
| 4 | 1/100 | ,, | 10/11/09 | F.R.F. | Rise. | Yes. | Yes, 2. | Big reaction on fifth day. |
| 5 | 1/100 | W. G. | 25/11/09 | R.F. | Rise. | ? | Yes, 1. | Acute case, difficult to adjudge as auto-inoculations continuous. |
| 6 | 1/100 | ,, | 1/12/09 | Rise. | High. | ? | ? | |
| 7 | 1/25 | J. C. | 2/9/10 | R.F.R. | Rise. | Yes. | Yes, 2. | This patient had a very subnormal temperature; this fluctuated, but did not rise above normal. What symptoms of negative phases occurred were slight. |
| 8 | 1/25 | ,, | 9/9/10 | R.F.R. | Fall. | No. | ? (1). | |
| 9 | 1/10 | ,, | 16/9/10 | R.F.R. | R.F. | No. | Yes, 1. | |
| 10 | 1/10 | ,, | 24/9/10 | R.F.R. | *Nil.* | No. | Yes, 2. | |
| 11 | 1/100 | M. B. | 31/3/10 | F.F. | Rise. | Yes. | No. | Prolonged negative phase. |
| 12 | 1/100 | ,, | 7/4/10 | F.F. | Rise. | Yes. | Yes, 1. | Cf. No. 1 above. Still longer negative phase. |
| 13 | 1/25 | ,, | 7/6/10 | R.F.R. | *Nil.* | No. | No. | Typical tuberculin curve in phthisis as Fig. (A). |
| 14 | 1/15 | ,, | 21/6/10 | R.F.R. | Rise. | Yes. | Yes, 1. | Also this one; cf. Table II., Nos. 4 and 5. |
| 15 | 1/5 | ,, | 18/9/10 | RR.F.R. | Rise. | Yes. | Yes, 1. | Follows after Table II., No. 8, which cf. |
| 16 | 1/25 | E. R. | 14/9/10 | R.F. | *Nil.* | No. | Yes, 1. | This case always had a high temperature, though well and walking; ? nervous. |
| 17 | 1/10 | ,, | 20/9/10 | R.F.R. | *Nil.* | Yes. | Yes. 2. | |
| 18 | 1/50 | M. P. | 30/7/09 | F.R.FR. | Rise. | Yes. | No. | Not typical curves for large prolonged negative and positive phases, were accompanied by marked symptoms. The lesion: old single focus, suddenly aflame. |
| 19 | 1/50 | ,, | 11/8/09 | F.F.R. | Rise. | Yes. | No. | |
| 20 | 1/50 | ,, | 25/8/09 | FFF.R. | *Rise.* | *Yes.* | No. | |
| 21 | 1/100 | R. P. | 16/8/10 | R.F.R. | Rise. | No. | Yes, 1. | Complicated by acute tubercular hip with auto-inoculations going on from that, but not affecting the index as done with human germs as same curves occurred after joint and temperature subsided. Cf. Table I., No. 10. |
| 22 | 1/50 | ,, | 26/8/10 | F.F.R. | F.R. | No. | Yes, 2. | |
| 23 | 1/50 | ,, | 2/9/10 | R.F.RF. | Rise. | No. | Yes, 2. | |
| 24 | 1/10 | ,, | 23/9/10 | R.F.RF. | F.R.F. | No. | Yes, 2. | |

* In this column the first letter indicates whether the index has risen or fallen on the following day. The other letters indicate the subsequent course of the opsonic curve. Thus, for example, No. 18, F.R.FR., shows that the curve begins with a fall, then follows a rise, and a subsequent fall and rise thus: ⋁⋁. A – means no change in the index. If the reader is sufficiently interested in the subject he would find that by drawing diagrammatic representations of the letters under this column he would more easily compare the two tables.

† This column, similarly to the preceding one, indicates the general course of the temperature.

‡ This column takes note of secondary curves, due probably to considerable auto-inoculations, appearing in the course of the primary curve, which result from the tuberculin inoculation.

TABLE II.—*T.R. + Eucaine.*

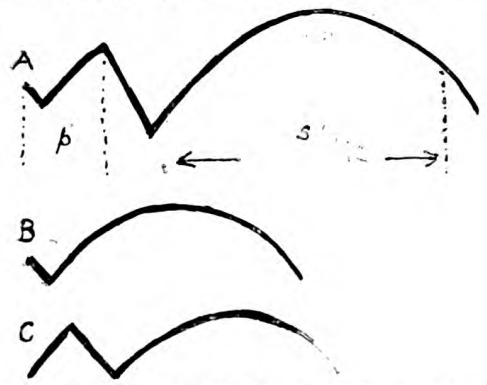
| No. | Dose in thousandths of a mgr. | Initials of patient. | Date. | Opsonic curve.* | Temperature curve.† | Malaise. | Auto-inoculations.‡ | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1 | 1/10 | J. C. | 1/10/10 | *Nil.* | *Nil.* | No. | No. | Follows Table I., No. 10, which cf. |
| 2 | 1/50 | M. B. | 10/5/10 | *Nil.* | Fall. | No. | No. | Practically no effect. |
| 3 | 1/50 | ,, | 17/5/10 | *Nil.* | ? R.F. | No. | No. | Temperature from 98° to 98·6° F. |
| 4 | 1/25 | ,, | 24/5/10 | F.RR.F. | Fall. | No. | No. | These show perfect curves such as rarely, if ever, seen in phthisis. Followed by Table I., No. 13. |
| 5 | 1/25 | ,, | 31/5/10 | F.R.F. | *Nil.* | No. | No. | |
| 6 | 1/15 | ,, | 14/6/10 | Rise. | Fall. | No. | No. | Very short negative curve probable. |
| 7 | 1/10 | ,, | 30/8/10 | *Nil.* | *Nil.* | No. | No. | Third repetition of dose. |
| 8 | 1/5 | ,, | 11/9/10 | Rise. | Fall. | No. | No. | Short negative curve proved. |
| 9 | 1/25 | R. P. | 9/9/10 | R.F.R. | R.F. | No. | Yes. 1. | Cf. Table I., Nos. 21, 22, 23, and 24. |
| 10 | 1/10 | ,, | 16/9/10 | F.R.FR. | Fall. | No. | Yes, 1. | Cf. particularly Table I., No. 24. |
| 11 | 1/10 | ,, | 30/9/10 | R.R.F. | Fall. | No. | No. | Similar to No. 8 above. |
| 12 | 1/5 | ,, | 7/10/10 | F.R. | Fall. | No | No. | No subjective effect in any of this series (Nos. 9 to 15), except the last, though large doses for a febrile patient. |
| 13 | 1/5 | ,, | 14/10/10 | F.–R. | RR.F. | No. | ? 1. | |
| 14 | 1/25 | ,, | 21/10/10 | R.RR. | F.FF. | No. | No. | |
| 15 | 1/25 | ,, | 28/10/10 | –R.F. | RR.F. | Yes. | Yes, 1. | |
| 16 | 1/25 | E. B. | 11/6/10 | F.RR.F. | R.FF. | No. | No. | Much lung involved in this case: febrile, sputum 4 ounces, temperature 99° to 100° noctu. History six years. |
| 17 | 1/20 | ,, | 18/6/10 | F.F.RF. | FF.RF. | No. | Yes, 1. | |
| 18 | 1/20 | ,, | 25/6/10 | R.F.R. | *Nil.* | No. | No. | |
| 19 | 1/5 | ,, | 14/10/10 | F.RR.F. | *Nil*, R. | No. | No. | |
| 20 | 1/5 | ,, | 23/10/10 | F.RR. | *Nil.* | No. | No. | |
| 21 | 1/5 | ,, | 30/10/10 | R.FF.R. | F.RR. | Yes. | Yes, 1. | This dose exceptional effect, as if no eucaine.§ |
| 22 | 1/15 | Q. H. | 15/6/10 | Rise. | Fall. | No. | No. | Short negative curve proved as in II., 8 cf. |
| 23 | 1/10 | ,, | 5/7/10 | – RR. | Fall. | No. | No. | Probably as previous. |
| 24 | 1/10 | E. B. | 11/11/10 | *Nil.* | *Nil.* | No. | No. | This is same case as above, 16–21. |

* † ‡ See footnotes under Table I.

§ I gave the eucaine alone first, then without withdrawing the needle gave the tuberculin. The result was comparable to several of the doses under Table I.

Of the patients referred to in the second table, 2 exhibited temperature charts steadily above normal, 2 showed normal temperatures in the morning, and 1 showed a subnormal temperature throughout. The marginal notes give an indication of the symptoms and conditions which called for comment and also draw attention by cross references to corresponding doses and other comparisons in the two tables.

Before examining the essential points of difference in the two tables it would simplify the business of comparison to describe what seem to be the main characteristics of the opsonic curve as it is seen after an inoculation of tuberculin in phthisis, and to show how it differs from that following tuberculin in a chronic lesion in some other locality. In the paper above referred to an attempt was made to show that the tuberculo-opsonic curve in phthisis was a complex curve which could generally be resolved without difficulty into two or more successive curves, overlapping each other in their incidence; and there it was further suggested that these curves consisted of a primary curve due to the inoculation and one or more secondary curves due to auto-inoculations set up as a result of hyperæmia in the diseased area in the lung. The accompanying figure shows such a curve (A), and for




Primary and secondary inoculation curves: *p*, primary; *s*, secondary.

comparison is shown what may be termed an ideal inoculation curve (B). A third curve (C) is found to occur not infrequently in febrile phthisis. It consists of an appreciable rise lasting for 24 hours or longer, followed by a fall lasting about the same length of time and succeeded by a prolonged positive phase. Wright has described such a preliminary rise as occurring after an inoculation in other conditions, but I understand that he has found it to be of very short duration, being rapidly succeeded by the negative phase. Now this prolonged preliminary rise occurs no less than ten times quite unmistakeably in Table I. (Nos. 5, 8, 9, 10, 13, 14, 16, 21, 23, and 24, and perhaps 7 and 17), whereas in Table II. it occurs only twice (Nos. 9 and 21). Of the two last mentioned the first was undergoing at the time large auto-inoculations with high temperatures, which probably vitiated the curve, and the other has been shown to be possibly uninfluenced by the eucaine.

Look again at the figure (A). Such a curve is found in 16 out of the whole list, when no eucaine was added to the dose, and in 5 of the remainder was obscured or replaced by a quite uncomfortably prolonged negative phase, accompanied by malaise. In Table II. the curve is only found 5 times altogether, and then with diminished distinctness. Compare Table II., No. 10, on Sept 16th, where eucaine was used, with Table I., No. 24, on the 23rd of the same month, where the same dose was given only a week later, but without eucaine. Compare also Table II., Nos. 4 and 5, with Table I., No. 13. Finally, malaise follows 13 of the doses without eucaine and only 2 in Table II., of which one is again the doubtful No. 21.

*Conclusions.*—1. There is a distinct difference in the response to an inoculation of tuberculin in phthisis if eucaine be combined with the dose. 2. The chief proof of this rests on the form of opsonic curve which follows such doses as compared with doses in which no eucaine was given. 3. There is a possibility that an inoculation of tuberculin produces its effect in part by stimulating the central nervous system. 4. Such stimulation may take place at the site of inoculation.

Yelverton, Devon.

# SOME REMARKS ON PANTOPON ANÆSTHESIA.

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DURING the last ten years so many new methods of inducing and maintaining surgical anæsthesia have been placed before the profession that it seems almost supererogatory to add yet another to the number demanding investigation and criticism. But it is fairly obvious that none of the methods now in use can honestly be styled ideal; the very fact that so many novelties are competing for popularity is a proof of the absence of a thoroughly satisfactory anæsthetic. So far as I am aware, up to the present no report of any case in which pantopon has been used as a "combined anæsthetic" has been published in English medical literature, and the conclusions of continental surgeons with regard to this new adjuvant have hitherto received scant attention in this country. As I have now for some time been using the drug a preliminary *résumé* of the results obtained with it may not be without interest to those who are not already acquainted with its possibilities, and it is with that object that these initial notes have been written.

In the early part of 1909 Sahli[1] of Berne, experimenting with the various alkaloids contained in crude opium, concluded that the most effective narcotic was a definite, stable solution of these alkaloids, in which the relative strength of the various constituents was definitely known or could be accurately measured. At his request, Schärger of the firm of La Roche prepared such a mixture, which was provisionally styled "pantopon" (from παν all and ὀπος juice). This, briefly, is a mixture of the soluble chlorides of opium in which the relative strengths of the following are claimed to be known: morphine, narcotine, codeine, papaverine, narceine, thebeine, hydrocotarnine, codamine, laudanine, laudanidine, laudanoeine, meconidine, papaveramine, protopine, lanthopine, cryptopine, goscopine, oxynarcodine, xanthaline, and tritopine. It is obtained as an amorphous, yellowish-brown powder, resembling somewhat finely powdered crude opium, easily soluble in water, less easily in alcohol and acetone, and forming a clear, colourless, or slightly brownish solution which is apparently quite stable at the ordinary temperatures, and which is faintly acid in reaction. One gramme of pantopon is estimated as being equivalent to five grammes of 10 per cent. morphine and 18 per cent. opium, but this estimate is probably too low, especially for anæsthetic purposes. The powder and the solutions have been extensively tried in continental clinics as narcotics and anodynes, and are claimed to be superior to other opium compounds and derivatives. Already a large number of reports on the clinical usefulness of the combination have been published, among which the work of Hallervorden,[2] Heimann,[3] Rodari,[4] Gottlieb,[5] Witowski,[6] and Raffalovitch[7] contains much interesting information. For some time the drug has been used as an adjuvant to general anæsthesia, and the results so far obtained, notably by Brustlein,[8] are so eminently satisfactory that the combination deserves wider trial and investigation. It is almost regularly employed at the German Hospital, Dalston, and has proved remarkably useful.

Combined anæsthesia, in which narcotics are used as a preliminary to the administration of the general anæsthetic, has now been so generally tested that we are in a position to draw certain definite conclusions with regard to its advantages and limitations. The combinations are so varied, ranging from the chloral-urethane group to that in which morphia in some form, either alone or combined with hyoscine, is administered, that it is not easy to collate the findings of various observers. The whole question opens up

1 Sahli: Münchener Medizinische Wochenschrift, No. 26, 1909. Therapeutische Monatshefte, No. 1, 1909.
2 Hallervorden: Uber die Anwendung des Pantopons, Therapie der Gegenwart, 1910, No. 5.
3 Heimann: Münchener Medizinische Wochenschrift, No. 7, 1910.
4 Rodari: Therapeutische Monatshefte, 1909.
5 Gottlieb und v.d. Eeckhart: Festschrift für Schmiedeberg, p. 235.
6 Witowski: Archiv für Experimentelle Pathologie und Pharmakologie, Band xvii. V. Schroeder: Ibid., Band vii.
7 Raffalovitch: Deutsche Medizinische Wochenschrift, 1910.
8 Brustlein: Correspondenzblatt für Schweizer Aerzte, 1910.

such an interesting field of possibilities that it is not surprising to find extreme differences of opinion with regard to individual methods. A few points, however, stand out clearly, and it may not be without interest to draw attention to Burgi's[9] recent elaborate series of experiments in which a large number of combinations were tested. These conclusions have not been challenged; on the contrary, more recent work by Italian critics seems to confirm Burgi's work in substance. He found, what was already known clinically, that two narcotics introduced simultaneously or shortly after each other have a much more powerful effect than when a total quantity of one narcotic, equivalent in strength to the combination, is administered. This triple or quadruple increase of action is greatest when the two narcotics have different cell receptors, and a dose of one drug acts much better when it is given in relatively small quantities, with an interval between each administration, than when it is exhibited at once. These conclusions are of some interest as supporting the Burker[10] theory of narcosis and as yielding certain data which seem at variance with the hypotheses of Overton-Meyer and the Verworn school generally. They are supported by Madelung,[11] who, working with small quantities of scopomorphine, found that this combination very powerfully increases the anæsthetic effect of ether, and that it suffices to produce surgical anæsthesia in animals who are allowed to inspire $CO_2$ or a mixture of this gas and oxygen. Neu's[12] more recent work in this direction is equally interesting, for he found that the administration of small doses of scopomorphine materially increased the effect of gas and oxygen. Rocchi's[13] results were similar with regard to atropine-morphine combinations, and as early as 1880 Surmay[14] pointed out that a preliminary dose of chloral enabled the anæsthetist to use a much smaller quantity of ether than in cases in which no adjuvant had been used. Rave[15] in America and Franck[16] of Bordeaux reported similarly with regard to other combinations; and much more recently Wolffsohn[17]—who was the first observer, I believe, to draw attention to the interesting fact that a positive Wassermann reaction is the rule after combined anæsthesia—has laid stress on the important summative effects of small quantities of a narcotic drug, not in themselves sufficient to produce any appreciable degree of narcosis, in influencing the rapidity of action of general anæsthetics. The advantages of dividing the preliminary dose of narcotic have been concisely summed up by Beinaschewitz,[18] whose conclusions on this subject are well worth study.

These findings are valuable when we consider that pantopon appears to be in many respects an ideal narcotic to employ for anæsthetic purposes. In the majority of cases, as Sahli and his co-workers[19] have shown, it is well tolerated, producing none of the unsatisfactory after results that sometimes follow the administration of solutions of morphia. Raffalovitch, in the interesting thesis already alluded to, states that it influences the respiratory centre much less than does morphia, and Grafenberg,[20] in an equally instructive study in which he contrasted it with scopomorphine, comes to the conclusion that it is in every way preferable, since it is more reliable and has no tendency to cause collapse. It is at present used mainly as an injection, 1 c.cm. of a 2 per cent. solution of the drug being injected an hour before the operation, though, as has already been stated, it is much to be preferred that the dose should be subdivided and administered at intervals. The solution can be bought ready prepared in ampoules, each containing the requisite dose, or it can be readily made by dissolving the powder in a mixture of 75 per cent. water and 25 per cent. glycerine, the solution so obtained being quite stable and sterile. At the German Hospital the ampoules are used, and they have so far proved quite satisfactory. The injection causes a slight tingling, similar to the sensation which is experienced after an ordinary hypodermic of morphia; this soon passes off, and the patient feels no further discomfort. The anodyne action of the drug is very striking; the pulse becomes slower and steadier, the respirations are quieter and more regular, and—a matter of considerable importance to the anæsthetist—the patient is quite tranquil and composed when brought in. The difference between pantopon and scopomorphine in this last particular is very marked. Where a patient has received a comparatively small dose of the latter it often happens that his behaviour on the table is the reverse of satisfactory, especially in cases where oxygen is used in combination with ether or chloroform; in sturdy alcoholic adults this negativism, to use a charitable expression, is sometimes very great. With pantopon I have as yet observed no such preliminary excitement, and the period of induction is very much shortened, even when contrasted with the relatively short stage in scopomorphine anæsthesia. In some cases, where two injections of the drug have been given, somnolence is much greater, and Brustlein has been enabled to perform operations on patients in this condition without availing himself of a general anæsthetic at all. For obvious reasons, however, this course is to be deprecated, especially since we lack conclusive evidence with regard to the narcotic strength of the preparation. I have already stated that I consider the morphia equivalent of pantopon is too low, and it must always be remembered that individual idiosyncrasy towards opium derivatives is sometimes very marked and can never be previously estimated. The combination of morphia with narcotine may have something to do in determining the action of the preparation in certain individuals who appear to respond to it much more quickly than others, and in future it may be preferable to use pleistopon, a combination in which the latter alkaloid does not enter. I have as yet had no opportunity of trying this combination myself, and I know of no reported cases in which it has been employed as a preliminary to general anæsthesia.

A considerable experience of scopomorphine anæsthesia, especially in combination with ether and oxygen, has convinced me that Perrier's[21] strictures on this combination are not altogether undeserved. However easy and pleasant in the majority of cases it renders the anæsthetist's task, especially with regard to inducing narcosis, and however much it minimises the dangers of general anæsthesia, its after results are not always so satisfactory as one could wish. In the first place, the relative length of the apnœic periods during the administration of ether and oxygen are greater than where no narcotic has been used as a preliminary, and though it is easy to overcome this tendency towards apnœa by allowing the patient to breathe into the bag and so to obtain a small quantity of $CO_2$, this course has manifest disadvantages, not to speak of dangers. In the majority of patients the breathing under scopomorphine anæsthesia is apt to be shallow when oxygen is used. The result is invariably some congestion at the lung bases, and there is reason to believe that the percentage of post-anæsthetic broncho-pneumonias is higher in cases where this combination has been used than in those in which ether-oxygen-chloroform alone has been employed. At the German Hospital, where the Roth-Dräger is used as a matter of routine, there is a general feeling that this apparatus is occasionally responsible for the lung complications that sometimes ensue. This opinion I confess I do not share, for ordinary anæsthesia maintained by means of the apparatus certainly does not show an increased percentage of post-operative pulmonary complications. At the Graz clinic, where the Roth-Dräger is constantly used, lung complications are relatively infrequent, though the patients are exposed to more adverse atmospheric conditions than is the case at Dalston. My own experience at Graz certainly does not support the supposition that the apparatus is primarily responsible for such complications, though I am aware that there is ground for believing that the inhalation of oxygen itself under high pressure is likely, in some patients at least, to give rise to such complications owing to the apnœa produced during the administration. Dr. St. John, who is at present working at Professor von Hacker's clinic, has very

[9] Burgi: Deutsche Medizinische Wochenschrift, 1910; Correspondenzblatt für Schweizer Aerzte, 1909. Deutsche Medizinische Wochenschrift, 1909.

[10] Burker: Münchener Medizinische Wochenschrift, 1910.

[11] Madelung: Archiv für Experimentelle Pathologie und Pharmakologie, Band lxii.

[12] Neu: Münchener Medizinische Wochenschrift, 1910.

[13] Rocchi: Bolletino della Società Lancisciana degli Ospedali di Roma, 1891.

[14] Surmay: Union Médical Commun, 1880.

[15] Rave: New York Medical Journal, 1886.

[16] Franck: Journal de Médecine de Bordeaux, 1880.

[17] Wolffsohn: Deutsche Medizinische Wochenschrift, 1910.

[18] Beinaschewitz: Therapeutische Monatshefte, 1910.

[19] Sahli: Loc. cit. Ewald: Berliner Klinische Wochenschrift, No. 35, 1910. Burgi: Deutsche Medizinische Wochenschrift, 1910. Sahli: Zentralblatt für die gesammte Therapie, 1909.

[20] Grafenberg: Deutsche Medizinische Wochenschrift, No. 34, 1910.

[21] Perrier: Inaugural Dissertation: Die Skopomorphin Anaesthesia, Geneva, 1908.

kindly supplied me with his observations on the subject which coincide with mine, and Dr. Streissler, the chief assistant at the Graz Hospital, writes to me that he has not met with any pulmonary complications that can justifiably be attributed to the apparatus. At Graz no scopomorphine is given, and at Prague, where the Roth-Dräger is also extensively used, the results, without scopomorphine, are equally satisfactory. It is therefore not unreasonable to regard the pulmonary complications which have occurred in my own practice where the Roth-Dräger has been used, as dependent, to some extent at least, upon the action of this combination. The shallow respirations, together with the initial quickened breathing, may legitimately be regarded as predisposing to such complications, and in my opinion both are due to the scopomorphine. The recent work of Henderson and Scarborough [22] on the causes of death under anæsthesia, and of Collingwood and Boswell [23] on the influence of morphia in raising the threshold for $CO_2$ is of great interest in this connexion, but a discussion on the subject would be out of place in this paper.

Further disadvantages of scopomorphine when oxygen is used conjointly with ether or some other anæsthetic are the increased excitement manifested during induction and the prolonged stupor that follows, during which Cheyne-Stokes breathing is sometimes to be observed. The tendency towards post-operative nausea and sickness, which is greater than when no scopomorphine has been used, must be added as another unsatisfactory concomitant. A preliminary dose of scopomorphine does not diminish the tendency to vomit during the administration, and appears to increase the sickness after the operation, especially in operations on the neck and thorax in which prolonged retching seems to be invariably the case. None of these objections—with the possible exception of vomiting—appear to hold with pantopon. The breathing is throughout regular and quiet, never, except when a double dose has been given, shallow; there is no apnœa whatever. I have never yet observed any vomiting during the administration or immediately afterwards, though the patients sometimes retch considerably later on when returned to bed, so that in this respect pantopon does not seem to be much superior to scopomorphine. It is only fair, however, to say that the after course in the great majority of cases of pantopon anæsthesia is excellent, the patients do not vomit, do not complain of pain, and are quiet and comfortable in bed. The initial stage of induction is almost ideal; the patients are absolutely tranquil, and the calming and quietening effect of the drug is much more marked than is the case with scopomorphine. There is no struggling or excitement, the patient breathes deeply and regularly, the pulse is full and slow, there is an absence of all signs of negativism, and once the case is "under" a very small amount of anæsthetic suffices to keep it in a suitably relaxed condition for the surgeon. I have been at some pains to compare the amount of anæsthetic used in pantopon cases and in those in which scopomorphine has been given; Grafenberg [24] using the Wanscher-Grossmann apparatus and employing ether only, found that a much smaller amount of the anæsthetic was sufficient in pantopon cases than in scopomorphine cases. Sick,[25] employing the Roth-Dräger apparatus, averaged with scopomorphine anæsthesia 8–10 c.cm. (men) and 6–8 c.cm. (women) of chloroform, together with 60–100 c.cm. (men) and 60–90 c.cm. (women) ether per hour of anæsthesia. My own results under similar conditions average 8–14 c.cm. chloroform and 60–130 c.cm. ether per hour. Where no oxygen is used a much smaller quantity of anæsthetic suffices. The following details of some early cases of pantopon anæsthesia are interesting for purposes of comparison:—

CASE 1.—Stout, flabby woman, with apical mitral murmur. Operation for umbilical hernia together with total hysterectomy. ½ c.cm. pantopon administered an hour previously to, and another ½ c.cm. just before, operation. Patient calm, breathing regularly, respirations 18; pulse full and steady, 74. Pupils moderately contracted, reacting to all stimuli. Induction period eight minutes; commenced with oxygen, 7 pints per minute, and ether, starting at 0·5 gramme per minute, gradually rising to 1·5 grammes per minute. Conjunctival reflex present throughout operation which lasted an hour and ten minutes. Pupils small, anæsthesia perfect, no vomiting or retching, no mucus. Patient had edentulous jaws and a very large tongue, with loose, flabby, lips, which interfered somewhat with the mask. Pulse an hour after commencement of administration 72; respirations 14 to 16. Total amount of ether used 62 grammes; no chloroform.

CASE 2.—Male, 33 years of age. Nephrotomy. Similar injections of pantopon. Anæsthesia excellent throughout; conjunctival reflex present. Induction time 10 minutes, period 40 minutes; 96 grammes ether.

CASE 3.—Female, 58 years of age. Cholecystectomy. Patient in very poor condition; pulse at commencement of administration 104, dropped to 85 during anæsthesia. Conjunctival reflex abolished at early stage of anæsthesia. Duration 1 hour and 20 minutes; 160 grammes ether.

CASE 4.—Male, aged 15 years. Hernia inguinalis sinistra. Induction period eight minutes; conjunctival reflex present. Anæsthesia completely satisfactory. Ether 40 grammes.

CASE 5.—Female, aged 44 years. Gall-stones. Cholecystectomy. Very much emaciated, feeble woman. Duration of anæsthesia 1 hour and 40 minutes; ether 160 grammes.

In none of these cases was there the slighest difficulty during the induction or administration. There was no retching, no mucus had to be sponged out from the throat, and the patients were completely relaxed, although for the greater part of the operation they only received ether at the rate of 0·5 to 1 gramme per minute with the full quantity of oxygen—7 pints per minute. In a few cases it has been necessary to give chloroform, mainly during the induction, in order to hasten the anæsthesia in strong, vigorous male patients. Lately, however, I have not used chloroform with pantopon, and when it is remembered that it is exceedingly difficult to keep a sturdy patient sufficiently under the anæsthetic (and almost impossible to do so in the case of an alcoholic) with the Roth-Dräger apparatus when ether is given alone and at a less rapid rate than 1·5 grammes per minute, these results are very satisfactory.

I do not know of any contra-indications for the use of the drug. In no case have any bad results followed its use in kidney operations, and, from an anæsthetic point of view, the most successful cases were those in which the patients were deeply jaundiced. I am inclined to think that pantopon predisposes to bleeding, as in some cases there was considerable oozing; this, however, is probably to be ascribed to the stimulating effect on the skin by the iodine sterilisation. Some observers are apparently averse to administering scopomorphine in cases in which valvular disease of the heart is present: I have not found the slightest disadvantage in doing so, and in one case of pantopon anæsthesia where the patient had very well marked mitral regurgitation the anæsthetic was excellently borne. A possible objection to using the drug lies in the fact that it renders the mucous membranes very dry. Patients are usually very thirsty when they wake, though not as a rule constipated. Cutaneous excretion is augmented, and the sweating is sometimes exceedingly profuse, the patient's shirt being almost saturated with moisture in some cases. There is naturally a very strong opinion against administering opium derivatives to children as a preliminary to anæsthesia. This seems to me to be acting over-cautiously; there are undoubtedly cases in children in which a preliminary administration of a small amount of pantopon would be of great usefulness. The Abbott compound (hyoscine-morphine-cactin) has been used with some success in children's cases and I see no reason why pantopon should not be employed as an adjuvant, as I am convinced that its advantages in mitigating the effects of a prolonged operation on a child, as regards shock, are great, and these advantages outweigh the possible, but more or less theoretical, dangers. Wiki [26] has recently shown that children bear morphia injections remarkably well, especially in cases of profound collapse from pain, and it is just in this class of case that it seems advisable to use pantopon on account of its sedative effect.

The ideal combination for pantopon, so far as surgical anæsthesia is concerned, is with gas and oxygen as a general anæsthetic. This method demands a somewhat complicated apparatus, but is undoubtedly to be preferred to any other. For ordinary purposes, however, the usual methods, either open ether or chloroform administered on a Skinner's mask or A.C.E. on a Rendle, will be found thoroughly satisfactory when pantopon has been given in divided doses beforehand.

A word must be said in conclusion with regard to the dangers of the method. No anæsthetic is ideally safe, but it is always well to bear in mind Bilroth's dictum that an anæsthetic, by itself, is never responsible for a death under anæsthesia. The concomitant causes are so various and so manifold that it is difficult, if not

[22] Henderson and Scarborough: American Journal of Physiology, 1910.
[23] Collingwood and Boswell: Ibid., 1907.
[24] Grafenberg: Loc. cit.
[25] Sick: Deutsche Zeitschrift für Chirurgie, 1908, Band xcvi.
[26] Wiki: L'Opium chez les Enfants, Revue Médicale de la Suisse Romande, vol. xxx., 1910.

wholly impossible, to estimate their relative importance in producing a fatal result, and where a new method is in question it is always well to be cautious in ascribing dangers to it on theoretical grounds. Scopomorphine has now been so extensively used that it is possible to estimate its relative safety with some degree of accuracy. Faust,[27] Rinne,[28] and Neuber[29] have reported fatalities, and American observers have added to the number, while more recently Schoemaker[30] and Sick[31] have also discussed the question. Neuber, in an elaborate paper, puts the figures as follows: scopomorphine, 1 in 4762; chloroform, 1 in 2060; ether, 1 in 5930. These are fairly reliable figures, as they have been worked out from a very large number of published and unpublished cases, but it is obvious that a large number of cases of so-called deaths under anæsthetics are never reported and are therefore not available for statistical purposes. With regard to the opium combinations, many of the reported cases are not wholly reliable. Schoemaker's case, in which a patient died after an injection of a quarter of a grain of scopomorphine, is one of those. With regard to pantopon, I know of only one fatality, and it is very doubtful if that can be ascribed to the drug, since there was apparently no necropsy. The patient died the day after the operation in coma; the anæsthesia had apparently been normal throughout. It is generally agreed that death in cases of scopomorphine anæsthesia is due to the morphia. The symptoms, which come on a few hours after the operation, are those of opium poisoning—sleep, deepening into stupor, supervening in coma. With pantopon the picture would probably be similar, and the treatment would be on the lines of an ordinary case of morphia intoxication. It is just as well, therefore, to bear in mind that, according to Rigopoulos,[32] atropine is not of much use in such a condition, but that early intravenous injections of a fairly strong solution of potassium permanganate hold out the best chance of saving the patient. During the administration the size of the pupils does not afford much indication of the depth of anæsthesia when pantopon is used; they are usually contracted, reacting faintly to light, but when much oxygen is given they may remain comparatively large with an equally faint reaction; the conjunctival reflex is hardly ever lost with pantopon. The safest guide to the anæsthetist in this as in most other methods remains a careful attention to all details, especially the cutaneous capillary reflex, and the condition of the breathing though the latter may be almost inaudible and imperceptible in some patients during an apnœic period when oxygen is used.

My thanks are due to Dr. E. Michels for allowing me to make use of some of his cases, and to Dr. A. Oberstadt, the house surgeon, and Dr. G. Dorner for information with regard to the after-history.

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[27] Faust: Deutsche Medizinische Wochenschrift, 1910.
[28] Rinnie: Deutsche Medizinische Wochenschrift, 1910.
[29] Neuber: Surgical Congress, 1909.
[30] Schoemaker: Deutsche Medizinische Wochenschrift, 1910.
[31] Sick: Loc. cit. ant.
[32] Rigopoulos: L'Action Antagonistic du Permanganat de Potasse vis-à-vis de la Morphine, Thèse de Genève, 1905. See also Hanckold; Zeitschrift für Experimentelle Pathologie und Pharmakologie, Band vii. Lindemann: Ibid. Bendersky: Comptes Rendus de la Société de Biologie, 1904. Engelmann: Centralblatt für Chirurgie, 1902.

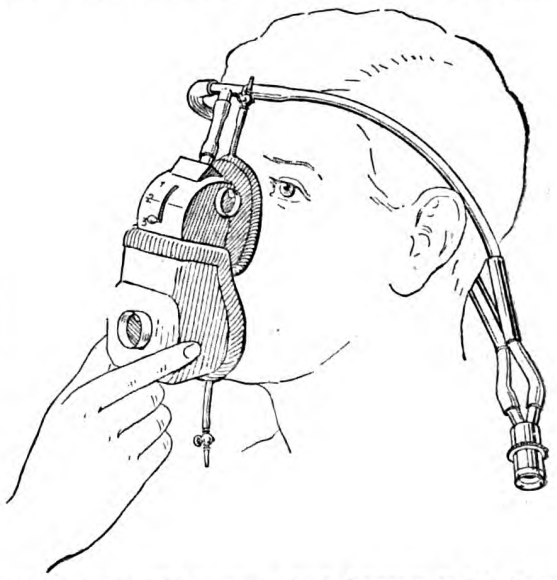
# A NEW METHOD OF ADMINISTERING NITROUS OXIDE, WITH OR WITHOUT OXYGEN, FOR PROLONGED DENTAL OPERATIONS.

BY NORMAN S. HEEGAARD WARNER.

THE apparatus used is shown in the accompanying woodcut, and consists of the following parts.

A special form of inhaler, which I call a *naso-oral inhaler* and which has two separate parts—a nose-piece and a mouth-piece. A metal attachment is adjusted so that two rubber tubes are in connexion with the ordinary "gas bag." These tubes pass one each side of the patient's head, and are joined to a hollow metal T-piece, which rests against the forehead. The vertical or lower part of the T-piece has a wider bore, and is joined to the top of the nose-piece by a short piece of rubber tubing.

*The nose-piece* is so made that it takes up the minimum amount of room (so as not to get in the way of the operator), and at the same time has the maximum width for its apertures. Running down the centre is a sliding plate (the regulator) which can be adjusted to the following positions, so that (1) the supply of gas is immediately cut off and air simultaneously admitted; (2) gas is admitted only to the nose; and (3) gas is admitted to the nose and mouth (as shown in the illustration). In the lower part of the nose-



piece is a rectangular opening, which, however, is not shown in the illustration, as it is covered by the upper part of the mouth-piece, thus indicating Position 3. This opening serves a double purpose: (i.) admits air, *provided that the mouth-piece is removed and the regulator is in Position 1;* (ii.) communicates with the mouth for the passage of gas, *when the mouth-piece is in place and the regulator at Position 3* (*vide* illustration).

An expiratory valve is on either side of the nose-piece. Nose-pieces can be obtained fitted with or without pneumatic rubber cushions, though the former is advised, thus ensuring a better fit round the bridge of the nose Coming off from the smooth facet of metal, just in front of the nitrous oxide tube, but not shown in the woodcut, is a short metal tube for the oxygen attachment. This tube is closed at its upper end by means of a metal cap, to prevent the escape of nitrous oxide when the oxygen attachment is not in use.

*The mouth-piece* needs no special description other than the illustration. It is supplied with an expiratory valve in the centre, and a pneumatic rubber pad or cushion round its sides. The rubber pad is essential in the case of the mouth-piece. Both the rubber pads can be easily removed for sterilisir g purposes.

### I.—*When used for the Administration of Nitrous Oxide without Oxygen.*

The connexions having been made, as already described, the gas-bag filled, and the patient ready with mouth-prop in position, the nose-piece is adjusted with the regulator at 1—i.e., the patient is breathing only air through the nose-piece.

(*a*) *In the case of normal patients.*—A few words of encouragement and instruction should be given the patient as to breathing through the nose. After a few inspirations of air, when he should have become accustomed to the inhaler, and when he is seen to be breathing normally the valves on the stopcock of the gas bag are thrown out of action (as they are unnecessary, there being valves on the nose-piece), and the regulator is then turned to 2. At this point the mouth-piece is put in position, which is, so that its upper border lies between the lowest part of the slot in which the regulator slides, and the upper border of the rectangular opening, which admits air. It is important that a gentle but constant pressure be exerted on the bag, to force the gas through the tubes, otherwise the patient is apt

to strain on inspiring, and hence suffer from feelings of faintness on recovering from the effects of the gas. Also, due to the fact that the pressure of the gas is greater than atmospheric pressure, the inadvertent entrance of air is prevented. If the patient is recovering from the anæsthetic during the operation the pressure should be increased until he is again well under the influence of the gas.

There are several forms of bag compressors on the market, all more or less after the some principle. One that I have found work admirably is the steel-spring compressor that was designed by Mr. J. F. Trewby, house anæsthetist at the Royal Dental Hospital of London, and used by him at that hospital. Another steel compressor—one that is cheaper but equally efficient—is the one designed by Mr. F. Coleman, assistant dental surgeon to the Royal Dental Hospital of London. Thirdly, the gas-bag could be compressed by an assistant; but if one is unobtainable the anæsthetist should use his own arm or hand. The last mentioned can be managed quite well after a little practice.

The most scientific and preferable method, however, is to use a special form of gas regulator, which can be joined to the gas cylinder, and which obviates the necessity of using a gas bag. Connected to both cyclinder and gas regulator are nine coils of thick copper wire, beneath which is a small metal stand, on which rests an ordinary spirit lamp. This little lamp when lighted heats the copper wire, two or three minutes only being necessary to produce gas at body heat, provided an average pressure is exerted. Fixed to the top of this gas regulator is a fine screw adjustment, by means of which *any* desired pressure can be obtained. If this regulator is used the gas bottles will be found not to freeze, as is often the case if a great number of gas patients are treated in immediate sequence.

Usually in from 45 seconds to a minute the mouth-piece can be removed, and the dental operation started. There is no need to "push the anæsthesia" to the end of the third stage, as is done with the ordinary face-piece, but the operation can be proceeded with at the *beginning* of the third stage of nitrous oxide narcosis.

*Best signs indicating the stage in the administration at which to remove mouth-piece.*—(i.) Eyes become dull and expressionless, but sclerotic reflex persists; (ii.) the pupils begin to dilate; (iii.) strabismus sometimes occurs; (iv.) limbs become flaccid. While the dental operation is proceeding, anæsthesia is kept up, until the breathing loses its rhythm and a slight stertor is audible, together with other approaching signs of deep nitrous oxide anæsthesia. These signs generally occur within 30 seconds of the removal of the mouth-piece, and at this point two full inspirations of air should be allowed, or the patient should be permitted to breathe air for about five seconds. When these deeper signs again appear the patient can have, as a rule, from 5 to 20 seconds for breathing air—i.e., from two to eight inspirations—when the gas should again be turned on by the regulator on nose-piece.

The administrator should endeavour to steer clear of deeper nitrous oxide narcosis, and should avoid such signs of deep anæsthesia as "oscillation of the eyeballs," and "jactitations" (clonic muscular movements of the thoracic and abdominal muscles and extremities, and spasmodic elevations of the larynx towards the epiglottis and base of the tongue, the last mentioned giving rise to the stertor).

I find it better to begin the administration of gas through the nose only, as it is easier for the patient to continue breathing so, after the removal of the mouth-piece. The mouth-piece could be discarded in normal cases, the patient's mouth being closed at the beginning of the administration, which is conducted by means of the nose-piece alone. When the patient is sufficiently under his mouth could be opened up with a Mason's gag.

(*b*) *In the case of alcoholic patients and mouth-breathers, &c.*—The administration is proceeded with on similar lines as before, with the exception that when the patient has inspired one or two breaths of air through the nose-piece, and has become used to the inhaler, the mouth-piece is adjusted *immediately*, and the regulator moved to Position 3 (as depicted in the illustration)—i.e., the inhaler is practically converted into an ordinary face-piece. The patient is now having gas administered to him through the nose and mouth. This is kept up until the patient is ready for the operation, when the regulator is moved to Position 2, and the mouth-piece withdrawn. This method is desirable with powerful men, or alcoholic and other excitable patients, as the period of induction is considerably lessened. Mouth-breathers are certainly not very good patients as regards nasal administration, but even they can be made to have a longer period of anæsthesia than they would have with the ordinary face-piece method.

### II.—*When used for the Administration of Nitrous Oxide with Oxygen.*

As already explained, there is a short metal tube of narrow bore at top of nose-piece as a fixture, to which another tube of similar bore can be adjusted. This latter tube is the oxygen attachment, and has fixed to it an ordinary long-arm tap for regulating the supply of oxygen. This tap can be made to pass across an arc plate, which has a series of depressions into which a stud spring catches. The depressions are placed very close together, so as to give the smallest variation to the arm, at the same time holding it securely during any of the movements (Weiss). When the arm, or tap, is vertical it is full on, and when horizontal the oxygen is turned off.

A rubber tube of equal bore is joined to the other end of this metal tube, and communicates with the oxygen bag, which should have a capacity of about one and a half gallons. The nitrous oxide and oxygen bags are both filled and hung on a stand or on to a metal bar, which can be adjusted to any operating chair. The bags should hang immediately to the left of patient (out of the operator's way), and in such a position that they can easily be seen by the anæsthetist. They should also be as near to the patient's head as possible, so that the minimum distance from gas bags to nose-piece can be obtained.

If a pressure regulator for the $N_2O$ is used, only one bag with a spring compressor will be needed—viz, that for the oxygen. The $N_2O$ and the oxygen must, of course, be administered under an equal pressure.

*The oxygen is used simply to control the number of respirations, and keep down the cyanosis.*

Usually in about 45 seconds the breathing becomes slightly laboured and noisy. At this point oxygen is gradually admitted, when the breathing will generally quieten down. If excitement ensues, the supply of oxygen is lessened or turned off altogether, and two or three inspirations of nitrous oxide allowed. After this the oxygen can be turned on again very gradually. *In this manner the respirations can be controlled.* Air, however, should be admitted from time to time.

*Signs to watch for* to indicate the best time for removal of mouth-piece: (i.) *Respiration* is regular and tranquil, or is softly snoring in character (similar to the breathing in a good chloroform anæsthesia); (ii.) the sclerotic or corneal reflex is abolished; (iii.) *the eyeballs* are fixed and widely staring, or present slight oscillatory movements; (iv.) *extremities* are flaccid (or, in rare cases, very rigid). Sometimes the corneal reflex is still present, when the other signs appear, in which case the mouth-piece can safely be withdrawn and the operation started. The other particulars are essentially the same as in the administration of nitrous oxide alone. This method should be used in cases of disease in the circulatory system, heart weakness, &c.

### *Advantages of the Method.*

I. *Its advantage over the usual method of administering nitrous oxide and oxygen, or nitrous oxide alone.*—1. A much longer anæsthesia is obtained. Mr. J. H. Patterson, by means of the nasal method of administration, maintained anæsthesia for 9 minutes 55 seconds, using nitrous oxide without oxygen. This was at a public demonstration at Cambridge on a man aged 35 years. The patient was kept absolutely quiet, and recovered after a very few minutes. During anæsthesia two exposed and inflamed pulps were removed, and the two teeth partly prepared for crowning. In addition to this 18 teeth were extracted. On 23 occasions the anæsthesia has exceeded four minutes, but it must be mentioned that these times represent the actual duration of the operation and *not the total available anæsthesia*, which would be 20 or 30 seconds longer, and which *could have been further prolonged had the operation required it*.

2. There is no necessity to "push the anæsthetic" at all, as is often done to an asphyxial point in the ordinary face-piece method, in order to maintain a longer anæsthesia. Many hold the view that this "pushing the gas to the utmost limit" is unscientific and wrong in principle, though

one need not doubt for a minute that it is perfectly safe in the hands of an expert anæsthetist.

3. *The operator* would appreciate this method, as it gives him longer time to do the work in hand thoroughly. Each extraction being performed deliberately, would be a great advantage to—

4. *The patient*, inasmuch that it would mean less damage to the alveolar process, and thus a quicker healing and absorption of the tooth sockets.

5. The instantaneous action of the oxygen in arresting accelerated breathing.

II. *Its advantage over ether, ethyl chloride, and chloroform.*—1. It is a safer anæsthetic. 2. It requires no special preparation of the patient. 3. The patient's recovery is much quicker, and is, as a rule, unattended by any unpleasant after-effects, as vomiting, headache, &c., the patient being quite able to go home after a few minutes.

*Advantages of the Apparatus.*

1. The extreme simplicity and ease in learning how to manage it. The anæsthetist practically has the whole control of the inhaler and the patient, in the small handle of the regulator.

2. Only one hand is necessary to hold the entire inhaler in position (i.e., both nose-piece and mouth-piece together), *leaving the other hand free* to manipulate the gag, &c.

3. The *same* movement of the regulator cuts the "gas" off and *simultaneously* admits air, *which enters immediately below the patient's nostrils.*

4. There is no need to remove the nose-piece from the patient's face to admit air, this being a great advantage to the operator. Its shape, also, is such that it is well out of the operator's way.

5. The Naso-Oral Inhaler will fit practically everybody.

6. The nose-piece is so made that it takes up the minimum amount of space, and at the same time has the maximum size for its apertures.

7. The oxygen is quite independent of the $N_2O$.

8. The quantity of oxygen used is always visible.

9. Great economy of oxygen.

10. Great economy of $N_2O$ if a regulator is used.

11. Definite proportions of air, $N_2O$, and oxygen can be admitted, if required, by decreasing the pressure of the $N_2O$ and the oxygen, and moving the regulator on the nose-piece to any desired point *between* positions 1 and 2.

12. Both nose-piece and mouth-piece are supplied with expiratory valves.

13. The apparatus can easily be adjusted to any gas-bag, gasometer, regulator, or stop-cock that the dental surgeon may already have in his possession.

This apparatus has had a successful trial at Guy's Hospital Dental Out-patient Department during the summer term and long vacation, and has been approved by the dental surgeons and anæsthetists present.

The following can be cited as examples of two of the cases, which we had during the winter session :—

CASE 1.—One Saturday morning (Oct. 22nd, 1910) Mr. Marmaduke Page easily maintained anæsthesia with this apparatus for a period of about seven or eight minutes, though, unfortunately, no exact time was recorded. During anæsthesia, Mr. Montagu Hopson removed a myeloid epulis from an upper jaw, and at the same time extracted the adjoining right central incisor. Both sides of the alveolar process were thoroughly scraped and then cauterised with pure carbolic acid. After this, the incisor was replanted, being kept in place by a special dental splint made of metal, which was cemented over the teeth with copper oxy-phosphate. The splint was held firmly in position while the cement set, anæsthesia being maintained during the whole process. The patient, a girl, aged 13 years, had a quick recovery, with *no* unpleasant after-effects, and was able to walk home almost immediately.

CASE 2.—A similar operation took place on Saturday, Nov. 19th, 1910, when Mr. Montagu Hopson again removed a myeloid sarcoma, with extraction and replantation of the adjoining lateral incisor. In this case anæsthesia was maintained for *10 minutes 25 seconds*—i.e., until the completion of the operation. A longer anæsthesia was required on this occasion, owing to the fact that the dental pulp was removed and the nerve canal carefully filled with an antiseptic material prior to the replantation of the incisor. A special dental splint was then applied as before. The patient (female, aged 22 years) had a similar recovery as that mentioned in Case 1, which was excellent in every way. It should be remarked that she was distinctly a very neurotic patient, and a pronounced mouth-breather. The third position of the regulator on the nose-piece proved of great value.

I should like to acknowledge that the appearance of this apparatus is largely due to the excellent instruction and practice that I was fortunate enough in obtaining from the staff anæsthetist who taught me. If, by chance, he should read this article he will see that I fully appreciate the 12 months' course of instruction that he gave me, and the splendid practice I had in administering general anæsthetics as his "full clerk" in the surgical and dental out-patient department.

I am grateful also to the dental surgeons, assistant dental surgeons, and anæsthetists, for their courtesy and kindness in allowing me to use the inhaler in the out-patient department at Guy's Hospital.

Acknowledgments are due to the Dental Manufacturing Company, of Newman-street, Oxford-street, W., for their willingness in making the apparatus for me, for their help in assisting me in getting out a universal shaped nose-piece, and for their patience in making many slight alterations to perfect the same.

In conclusion, I wish to thank Mr. Kenneth Hoby, L.D.S. Eng., and Mr. Ellison, co-manager of the company, for help as regards the drawings and woodcut.

Brockley-road, S.E.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### THE ADMINISTRATION OF THYROID GLAND SUBSTANCE UPON SERUM RASH AND SERUM SICKNESS IN DIPHTHERIA.

BY A. E. HODGSON, M.B. EDIN., D.P.H. CAMB.,
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THE occurrence of serum rashes, either alone or in conjunction with high temperature, arthritic pains, œdema, inflamed throat, adenitis, rhinitis, albuminuria, &c., forming the syndrome designated by von Pirquet as "serum disease," after the hypodermic injection of diphtheria antitoxin and other sera, and the graver anaphylactic complications, have attracted very considerable attention during recent years, both at home and abroad.

The conclusions most generally accepted are: (1) That the phenomena are not due to any substance in the antitoxic elements of the serum, but to a protein body inherent in the serum itself; (2) that serum rash and serum sickness or disease may follow one injection only, but will follow more rapidly when a second injection is made, coming on earlier as a rule, the more recent the first injection; and (3) that anaphylaxis usually only becomes a possibility when a second injection is made from 10 to 12 days and onwards, after the primary one.

Simple serum rash may be of no consequence in a case of diphtheria, in so far as bad results are concerned. On not a few occasions however, I have seen infants rendered distinctly "croupy" by œdema of portions of the air passages, coincident with, or resultant upon, an urticarial serum rash. Serum sickness, when severe, may very considerably tax a patient whose system is already burdened with the toxins of diphtheria; and I cannot agree with a recent writer in whose opinion the occurrence of a sharp febrile reaction has been rather useful than otherwise in very prostrate patients. The pyrexia, amounting to 103° F., or even 104° in some cases which I have observed, cannot but have some detrimental effect upon the cardiac muscle. Similarly, the sudden œdemas are commonly accompanied by an alarming fall in blood tension. Two cases in my recollection—each suffering from only a comparatively mild attack of diphtheria—came to a fatal issue as a result of exhaustion following a severe attack of serum sickness. The condition of anaphylaxis, I have fortunately not encountered as yet.

The conclusions referred to earlier undoubtedly include certain main factors involved in the causation of these conditions; but that other elements enter into the etiology is also admissible. Clinical experience proves that one particular series or batch of serum (probably from a particular horse), will cause a higher percentage of undesirable sequelæ than another series; and may there not be other factors inherent in, or peculiar to, the patient himself?

In a paper entitled, "Serum Sickness and Sudden Death following the Hypodermic Administration of Antitoxin," by Dr. Miller and Dr. Root of Detroit, published in the *Therapeutic Gazette* for February, 1910, the writers discuss this point, and in their conclusions suggest the possibility of a relationship between serum sickness and sudden death and "status lymphaticus or some allied condition"; or, in other words, that these particular antitoxin sequelæ may bear some connexion with a greater or less degree of a "hyper-lymphatic" state, if I may coin such an expression.

Following up this idea, with particular regard to serum sickness, and with a view of counteracting any tendency to this hyper-lymphatic or hyper-thymic state, a number of cases of diphtheria were given thyroid gland substance in the form of thyroid gland tablets (Parke, Davis, and Co.), simultaneously with, and for some days following, the administration of antitoxin. The dosage employed was, roughly, as follows: Up to 5 years, 1¼ grains daily, for six doses (decreased in infants); from 5 to 10 years, 2½ grains daily, for six doses; from 10 to 15 years and upwards, 5 grains on alternate days, for four doses. In all, 100 cases were observed, 50 receiving thyroid and 50 receiving none, the latter acting as control cases. The antitoxin employed was, in all cases, taken from a serum series which was clinically known to produce a large incidence of rashes, &c. My results may be tabulated thus:—

| | Cases receiving thyroid. | Cases not receiving thyroid. |
|---|---|---|
| Total number observed ... ... ... | 50 | 50 |
| No sequelæ ... ... ... ... ... ... | 29 | 22 |
| Simple rash ... ... ... ... ... ... | 15 | 12 |
| Serum sickness ... ... ... ... ... | 6 | 16 |

The figures of the first and second sections are not particularly striking, but the large number of cases in the non-thyroid column which suffered from serum sickness, and the small number in the thyroid column, at least suggest that the thyroid gland substance has some effect in modifying the condition.

The number of cases under observation, however, is not sufficiently large to admit of the drawing of anything in the shape of a definite conclusion; nevertheless, the results may be of sufficient interest to stimulate further observations in this subject.

Liverpool.

## AUTO-INOCULATION AND MASSAGE IN A CASE OF GONORRHŒAL SYNOVITIS.

BY J. R. RIGDEN TRIST, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient in this case, a man, aged 26 years, was under my care four years ago suffering from gonorrhœa. There was considerable fever, and for a fortnight he was very ill; there was also a severe conjunctivitis. He was kept in bed and thorough irrigation with argyrol was followed by complete recovery of the eyes. The urethra having been washed out with argyrol, he began to improve, and by the end of a month was fairly happy and comfortable and taking his food well, and the temperature had begun to settle. He then had pain in his right knee and the temperature went up to over 100° F. There was a gonorrhœal synovitis. Immobilisation and fomentation of the affected knee with continuance of active measures to the urethra were followed by a commencing fall of temperature in about a week, and at the end of a fortnight I ordered massage *once* to the affected joint, taking care that the temperature was observed. Within 12 hours the temperature was over 100°. I interpreted this as evidence that the massage had produced a condition of auto-inoculation. I waited for the temperature to settle down again, as it did in less than a week, and repeated the massage; a similar but less pronounced reaction ensued. The treatment was repeated, the temperature chart being used as a guide, and it was found that longer massage was needed before the reaction was observed. Massage was continued periodically on this plan until no reaction took place, and the patient left the nursing home apparently cured at the end of about eight weeks.

I should not, I think, adopt this method again in the treatment of gonorrhœa because I should use a gonococcus vaccine, but I have thought that the case is instructive as bearing on the subject of auto-inoculation so ably dealt with in Dr. Clive Rivière's thoughtful paper in THE LANCET of Jan. 28th.

Auto-inoculation is, I take it, an important factor in the good results obtained by massage in acute osteo-arthritis, a condition in which the preparation of a vaccine is not always possible owing to the difficulty of determining the organism or organisms responsible for the lesions.

Putney Bridge-road, S.W.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

*Exhibition of Cases and Specimens.—Splenomegaly.—Ulcerative Stomatitis in Children.*

A MEETING of this section was held on Jan. 27th, Dr. E. CAUTLEY, the President, being in the chair.

Dr. ERIC PRITCHARD showed: 1. Intermittent Word-blindness (Congenital) in a boy, aged 8½ years, who was both intelligent and dexterous. His vision was normal and his hearing good. He was slow at learning to read, but quick at mental arithmetic, and had no difficulty in reading Arabic numerals. He could recognise simple words when spelt aloud, but as a rule was quite unable to recognise the same words when written. On occasions, however, he could read simple sentences. He could write from dictation and copy written words, but did not understand their meaning unless he repeated the letters slowly, or slowly performed the movements for writing them. Thus, though his visual memories for words and letters were defective, his auditory and kinæsthetic memories were good. The intermittent character of the word-blindness was suggestive that the condition was a psychosis rather than due to a defect in the visual word centre. 2. Idioglossia in a girl, aged 9½ years. The child was prematurely born, and her mother's half brother was a deaf-mute. She was two years old before her speech was intelligible. She was a bright child, who wrote and composed well. Her mental condition was normal, but her hearing was slightly defective. The vowel sounds were more or less correctly pronounced, but consonants presented a difficulty, C, D, T, G being all pronounced Nee, H as Hay, J as Nai, S and X as Ai, V as Mew, Z as Ney, &c.

Mr. H. S. CLOGG exhibited a specimen from the case of Necrosis of the Lower Jaw, shown at the last meeting. The child subsequently had abscesses on either side of the jaw, which were incised, and it was determined to remove the necrosed portion of the bone. The specimen consisted of the whole of the lower jaw except the inner shell of the ascending ramus and the condyloid process on the left side. In the place of the jaw the child now had a firm, solid arch, but whether this was bone or not it was impossible to say.

Dr. T. R. C. WHIPHAM showed a case of Enlargement of the Liver in a healthy-looking boy, aged 9 years, with no symptoms except slight jaundice. The liver was enormous, reaching down to the anterior superior spine of the ilium and to the umbilicus in the middle line and extending below the left costal margin. In the epigastric angle was a large round swelling, which appeared to rise from the surface of the liver and was more elastic than the rest of the organ. The spleen at one time had been just palpable below the ribs. There was no ascites and the chest was normal. There was no enlargement of glands anywhere. The blood showed an eosinophilia of 7·8 per cent. but no other marked changes. The boy presented no external signs of congenital syphilis, but there was a history of the mother having had three miscarriages. During the past five weeks no change had

occurred in the patient's condition and his temperature had been normal. The general opinion was that the case was one of hydatid cyst, but diagnoses of gumma and hypernephroma were also suggested.

Mr. S. STEPHENSON showed a case of Embolism of the Central Artery of the Retina in a girl, aged 11¾ years, with no signs of inherited syphilis. The patient had mitral regurgitation, but presented no evidence of mitral stenosis. On Dec. 8th she had slight pain over the left eye, and the next morning found that the sight had done. On examination there was no perception of light in the eye. The retinal arteries were filiform and the yellow spot region was œdematous, with a red spot at the fovea. The disc was blurred by the surrounding œdema. The disc had gradually become atrophic and the œdema had practically disappeared, so that the contrast between the fovea and the surrounding fundus was not pronounced. The arteries were still smaller than normal. When shown the eye had sufficient sight to distinguish between light and dark.

Dr. K. KELLIE showed: 1. Two cases of Infantilism. (*a*) A girl, aged 4 years; weight 17 lb. 2 oz.; height 29½ inches. The abdomen was large and suggested at first tuberculous peritonitis, but injection of tuberculin and von Pirquet's test were negative. The stools were large and greasy, showing that probably the pancreas was at fault. (*b*) A twin boy, aged 3¼ years; weight 16 lb; height 28 inches. The patient could not walk and could only speak a few words. The stools were frequent, foul, and slimy. 2. Persistent Jaundice in a male infant, aged 5 months. Jaundice had been noticed since the fourth day and had varied slightly in intensity. The motions were colourless. The liver was enlarged to three fingers' breadth below the costal margin. There was no history of syphilis. The diagnosis lay between congenital syphilis and congenital obliteration of the bile ducts.

Dr. F PARKES WEBER read a paper on Splenomegaly with Recurrent Jaundice ending in Hepatic Cirrhosis and Ascites, with remarks on the Splenomegaly of Inherited Syphilis in Children. Various cases were described or referred to. From a study of his own and other cases, and from the literature of the subject Dr. Weber came to the following conclusions: 1. Moderate splenomegaly in children about the ages of 5 to 16 years may be almost the only evidence of an inherited syphilitic taint, and is often accompanied by occasional (usually only slight) attacks of obstructive jaundice. 2. Hepatic cirrhosis, with or without ascites, may be associated with splenomegaly, and at the time of death is probably usually of the ordinary "hob-nail" type. 3. Though it seems doubtful that the cirrhosis of the liver in these cases is of specific syphilitic origin, it is quite possible that the presence of an inherited syphilitic taint may diminish the resistance of the liver towards the action of toxins (including alcohol) and render it specially liable to cirrhosis. 4. The inherited syphilis in such cases need not necessarily be associated with retardation in general physical development. 5. Great caution must be employed with regard to anti-syphilitic, especially mercurial, treatment, probably on account of the general delicacy of the patients and their liability to renal and catarrhal complications. 6. There may be very little real anæmia or none at all. There may even be more or less polycythæmia, probably of "reactive" nature. 7. Abdominal crises (pain, &c.) may occasionally occur. 8. Some cases of familial splenomegaly in two or more brothers and sisters may perhaps be dependent on inherited syphilis. 9. Splenomegaly in children may be the most important sign of the presence of hepatic cirrhosis. 10. Some cases of splenomegaly in children with inherited syphilis probably ultimately present the characteristic clinical features of splenic anæmia or Banti's disease.

Mr. S. F. ROSE read a paper on Ulcerative Stomatitis in Children, laying stress on the typical distribution of the lesion on one side of the mouth and the efficacy of potassium chlorate as a means of treatment. The disease occurred for the most part in ill-nourished and neglected children, and was frequently started by one or more loose or septic teeth.

The cases and papers were discussed by the PRESIDENT, Dr. G. DE B. TURTLE, Mr. W. MILNER BURGESS, Dr. J. PORTER PARKINSON, Dr. J. W. CARR, Dr. G. A. SUTHERLAND, Dr. PRITCHARD, Dr. J. D. ROLLESTON, Dr. F. LANGMEAD, Mr. S. STEPHENSON, and Dr. PARKES WEBER.

## SECTION OF BALNEOLOGY AND CLIMATOLOGY.

*Osteo-arthritis and its Relation to Chronic Rheumatism.*

A MEETING of this section was held on Jan. 27th, Dr. T. F. GARDNER, President of the section, being in the chair.

Dr. C. W. BUCKLEY (Buxton) read a paper entitled "Osteo-arthritis and its Relation to Chronic Rheumatism," which was followed by a discussion. He said:—Osteo-arthritis is generally assumed to be a form of arthritis characterised by bony changes in connexion with the joints. Bony changes occur in many diverse forms of arthritis, such as pyæmic tuberculosis, gonorrhœal and gouty arthritis, and in the arthropathies, as well as in those conditions to which the name is more definitely applied, but in many cases of so-called osteo-arthritis the stage of bony change is never reached. Bony changes of hypertrophic type are essentially secondary and reparative and do not characterise any particular disease. The cases in which there is no other symptom than stiffness and creaking of the knee-joints are commonly a chronic synovitis due to wear and tear plus increased vulnerability of the joints from heredity or modified vascular supply, such as may be caused by varicose veins, and are then best described as chronic villous arthritis; but slight bony changes may occur in the form of osteophytes arising from the patella. This links them to certain other forms of osteo-arthritis, in which no specific cause is discoverable and which have been termed hypertrophic arthritis. In order to differentiate these two conditions from gouty and other forms of arthritis there is much to be said in favour of the term chronic articular rheumatism, which in spite of possible confusion with rheumatic fever would more clearly indicate their pathology and treatment, and the name osteo-arthritis should be abandoned altogether.

Dr. J. B BURT (Buxton) said that when they considered osteo-arthritis in such a condition as Heberden's nodes, they found that the formation of osteophytes was merely a compensation change. It seemed unreasonable to classify a group of clinical diseases under the term osteo-arthritis if that were only a secondary condition.

Dr. F. A. DE T. MOUILLOT (Harrogate) believed that the differential diagnosis of the different forms of arthritis was of great practical importance, as many patients' lives were made miserable by a diagnosis of rheumatoid arthritis on very insufficient evidence, sometimes the only symptom being a creaking of the knees. He also related a few cases showing how one form of arthritic disease was added to one already existing, such as gout, or rheumatic fever, or rheumatoid arthritis.

Dr. LEONARD WILLIAMS said that it was probable that the joints were if not excretory organs, then elaborating organs, enabling some materials to be more easily excreted. From the sex incidence of such diseases as gout and rheumatoid arthritis it was reasonable to suppose that the organs peculiar to the sexes, the testicle and the ovary, and the internal secretions were primarily responsible for the diseases in question.

Dr. ERNEST YOUNG suggested that members of the section should make careful clinical notes of these cases for the next two years. The collective evidence which might thus be obtained would form a far more satisfactory basis for classification than that which existed at the present time.

Dr. BUCKLEY, in reply, referred to the difficulty in diagnosis, and considered that rheumatoid arthritis was more frequently met with in young women and the conditions known as osteo-arthritis at the menopause. He welcomed the suggestion that members should make a careful study of a series of cases with a view to a future discussion which might greatly assist in the differentiation of these disorders.

## NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

*Non-malignant Diseases of the Breast and their Relation to Mammary Cancer.*

A JOINT meeting of this society and the Nottingham Division of the British Medical Association was held on Feb. 1st, Mr. W. MORLEY WILLIS being in the chair.

Mr. W. SAMPSON HANDLEY, in an address on Non-malignant Diseases of the Breast and their Relation to

has omitted any colours as carefully as if mistakes had been made. He should ask the candidate to match one of the omitted colours.

The examiner will soon find out from experience those colours which are named and matched wrongly by colour-blind persons; he should ask the examinee to name some of these colours.

Any candidate should be rejected who calls an orange or red, green or brown; black, red, or *vice versâ*; or green, either purple, rose, red, grey, brown, or violet. Similar mistakes in matching necessitate objection. A candidate who puts purple, rose, or blue with violet, or yellow-brown with orange is most probably dangerously colour blind and should be very carefully examined. There are cases which pass the Holmgren test with ease that fail in the most conclusive manner with my classification test. They put green with orange, brown and black with red, and grey with blue-green. This is due to a different selection both of test colours and confusion colours. Orange is by far the most important test colour and its confusion with green by the dichromics is very conclusive. The three other test colours —violet, red, and blue-green—represent both ends of the spectrum and the neutral point in dichromic cases, and practically these colours are those with which most mistakes are made. This test can only be regarded as supplementary to the lantern test.

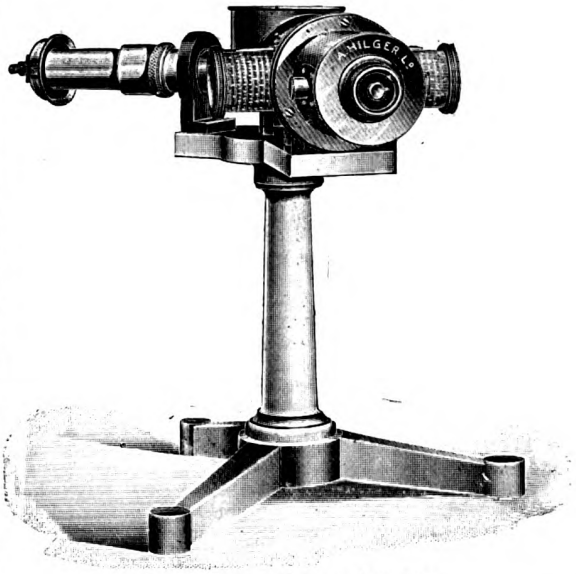
2. *The pocket test.*—This consists of 19 cards on 9 of which are 112 single threads of wool and 14 pieces of twisted silk similar to those in the Classification Test. These are numbered consecutively, with the exception of the first thread of the first four cards and the last thread of the next four cards. The end threads of the first four cards I. to IV. form the tests; they are orange, violet, red, and blue-green. There are also cards on which red, orange, green, blue, violet and purple, and grey respectively are to be found. There are also two special cards marked "Without Red" and two special cards marked "Without Green."

Many normal-sighted persons might object to the inclusion of some of the colours on the orange card, but this card clearly shows the colours which may be taken as a match. Fine distinctions are not wanted. The series of colours I have selected and arranged so as to confuse the colour blind and force them to be guided by their colour perception, whilst the quantity of colour is amply sufficient for the normal sighted to pick out the colours with the greatest ease. The cards should be arranged irregularly on a white cloth in a good light. The two most important test colours are the orange and violet, Nos. I. and II. The person examined should be asked to point out the shades of colour similar to No. I (orange). A piece of paper rolled to a point should be used for this purpose. If he does this correctly he probably possesses normal colour perception. If, however, he matches the test with reds or pinks he is more or less colour blind, at best belonging to the pentachromic class. If, in addition, he matches the violet test, No. II., with blue, he at least belongs to the tetrachromic class. The trichromic, in addition, may match the blue-green test, No. III., with brown and grey. The dichromic will match the orange test, No. I., with yellow-green and yellow-brown. Similar mistakes will be made to those described in connexion with the Classification Test. The examinee should be asked to name all the colours on one of the cards. He should also be asked to point out on which of the cards the four test colours are to be found and which contain none of the test colour. The examiner should continually change the order of the cards. Most of the varieties of the colour blind will be readily detected in this way.

The special advantages of this test are: 1. The colour blind can be ranged definitely in their proper classes. 2. Central scotoma can be detected with its aid. 3. The series of colours are arranged so as to confuse the colour blind, whilst the normal sighted easily match the test colours. 4. On account of the introduction of different materials the relative luminosity and saturation of colours does not serve as a guide to the colour blind. 5. Portability. 6. The wools and silks are kept clean. 7. An important colour is not likely to be lost.

3 *The colour-perception spectrometer.*[4]—(*a*) *Description of apparatus.*—This instrument is a spectrometer so arranged as to make it possible to expose to view in the eyepiece the portion of a spectrum between any two desired wave-lengths (Fig. 1). In the focal of the telescope are two adjustable shutters with vertical edges; the shutters can be moved into the field from right and left respectively, each by its own micrometer screw, and to each screw is attached a drum (Fig. 2), the one being on the right and the other on the left of the telescope. On each of these drums is cut a helical slot in which runs an index, and the drum is engraved in such a manner that the reading of the index gives the position in the spectrum of the corresponding shutter in wave-lengths direct. Thus it will be seen that if, for instance, the reading on the left drumhead is 5320, and that on the right drumhead is 5920, the region of the spectrum from wave-length 5320 to wave length 5950 is exposed to view in the eyepiece.

FIG. 1.




The colour-perception spectrometer.

FIG. 2.

Drum attachable to micrometer screw.

(*b*) *Directions for using the instrument.*—It should be used, as far as possible, with a known quality and intensity of light. A small oil-lamp is quite suitable for the purpose. The observer should first ascertain the exact position of the termination of the red end of the spectrum, the left-hand shutter being moved across until every trace of red just disappears. The position of the pointer on the left-hand drum is noted and the wave-length recorded. The left drum is then moved so that the shutter is more towards the middle of the spectrum. The right-hand drum is then moved until the pointer indicates the wave-length recorded as the termination of the red end of the spectrum. The observer then moves the left-hand shutter in and out until he obtains

[4] Made by A. Hilger, 75A, Camden-road, London, N.W.

the largest portion of red, which appears absolutely monochromatic to him, no notice being taken of variations in brightness, but only in hue. The position of the index on the left-hand drum is recorded. The left-hand shutter is then moved towards the violet end of the spectrum, the right-hand shutter being placed at the position previously occupied by the left-hand shutter. In this way the whole of the spectrum is traversed until the termination of the violet end of the spectrum is finally ascertained with the right-hand shutter. The variation of the size of the patches and the terminations of the spectrum with different intensities of light can be noted. The instrument can also be used for ascertaining the exact position and size of the neutral patch in dichromics, the position of greatest luminosity, and the size and extent of pure colours. When it is used to test colour-blindness the examinee should first be shown some portion of the interior of the spectrum, and then asked to name the various colours which he sees. In this way he will have no clue to the colours which are being shown him.

*Objections to other tests for colour blindness.*—The tests which have been proposed for colour blindness are very numerous, but some are so defective that it is rare to detect a single colour-blind person with them. I have, for instance, tested men whom I knew to be colour blind with certain lanterns, with the result that not a single one was detected. In these so-called tests all the requirements of a test and facts of colour blindness have been neglected. I must, however, refer to three tests constructed by exceptionally able men, each with considerable knowledge of the subject. I refer to the tests of Professor Holmgren, Professor Stilling, and Professor Nagel.

All these tests can be passed at the first attempt without coaching by certain dangerously colour-blind persons, chiefly varieties not known to the inventors, but the chief defect of each is that it is very easy to coach a colour blind person to pass it. The surgeon to one of our largest railway companies told me that when they used Holmgren's test they rejected one man in 300, but with my lantern 12 in the same number. All these three tests are much better tests when the persons to be examined have not seen them before. A colour-blind man may make only one mistake—say, for instance, as in a case I examined the other day with Nagel's test (last edition), he passes the test perfectly with the exception of one mistake, that of calling a grey on one card green. All he has to do is to look for some distinguishing mark on this card in order to go through the test with the ease and certainty of a normal-sighted person. It is the same with Stilling's letters, he has only to note the letter which he was not able to read and the appearance of the card. A normal-sighted man or woman would readily help him. The confusion of green and grey does not appeal to the average man as a serious defect, especially when he sees his friend go through the rest of the test perfectly. He says to himself, I suppose, he sees a tinge of green in that grey. The same man would rightly regard it as a most iniquitous proceeding to endeavour to coach his friend through a test when he had seen him mistake a red for a green light.

Holmgren's test rejects a large number of normal-sighted persons, as may be seen by the reports of the Board of Trade; about 50 per cent. of those who appeal are found to be normal sighted and to have been rejected wrongly.

THE CONVALESCENT HOMES ASSOCIATION.—This association has just issued a useful list of convalescent and other homes receiving London patients with particulars of the terms of admission and other useful information. The list includes homes for men, women, and children, homes for children only, patients requiring surgical treatment, homes for mothers and infants, homes for gentlewomen, and sanatoriums for consumptive patients, the terms of residence ranging from 3*s.* 6*d.* per week upwards. The association points out that they accept no responsibility with regard to the institutions named, and that inclusion in the list does not necessarily imply recommendation nor exclusion the reverse. The compilation will, however, we think, prove of great utility to medical practitioners when selecting a convalescent home for their patients, especially those of limited means. The book can be obtained at the offices of the association, 32, Sackville-street, London, W., at the price of 6*d.*

# THE PATHOLOGY AND TREATMENT OF INJURIES CAUSED BY ELECTRICITY.[1]

BY SIR THOMAS OLIVER, M.A. DURH., M.D. GLASG., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.

THE increasing use of electricity is introducing fresh dangers within our midst. As an illuminating agent it stands supreme and for motive power its utility is unquestioned. Electricity is therefore likely to have an extended sphere of application in the future. Its powers of maiming the body and of immediately destroying life are well known. Since 1902, the year in which death by electricity became notifiable to the Home Office, the following are the numbers of fatal cases which have been reported: In 1902, 7; in 1903, 4; in 1904, 6; in 1905, 7; in 1906, 10; in 1907, 11; in 1908, 2; and in 1909, 12. Notwithstanding the precautions which have been taken the number of fatal cases has increased, but this is largely in consequence of more persons being brought into contact with electricity. If we add to the above the many cases in which both minor and severe injuries have been received during recent years we can appreciate the need of having regulations drawn out for the guidance and safety of workmen. It is only because the majority of practical electricians are a well-educated and careful class of workmen that accidents are not more frequent. It is the unskilled labourers who contribute largely to the death roll. Many of the accidents are due to inadvertent contact with exposed parts of highly charged metal not sufficiently insulated or to workmen during alterations touching wires into which the current previously withdrawn has been unexpectedly diverted. Usually it is only a single person who is thus fatally caught in the round of the current, but the danger extends to all who unprotected attempt to succour him. The escape of electrical currents, too, under particular circumstances may become the cause of a catastrophe of an appalling nature. How far the West Stanley explosion of nearly two years ago, in which 166 lives were lost, was the result of an electric spark having fired the coal dust in the mine it is impossible to say. Electricity cannot be trifled with. Experience and experiment alike point the way by which some of the dangers incidental to its use may be averted. The danger depends upon the amount of current passing through the body, the kind of contact, and the insulated position of the individual at the particular time. If he is wearing damp boots, standing on wet soil, and his skin is moist, all of these will aggravate the effects of an electrical shock. The danger is not one of high potentiality of current alone, but of it *plus* the conditions under which the current is received.

Voltage in electrical parlance means pressure or electromotive force. It is difficult to say what voltage is fatal to man. In the United States where the current has been used for the electrocution of criminals not less than 1450 volts has been insisted upon, but in some instances death was not instantaneous. As regards illumination of factories, there is one case on record where a lad on taking hold of a lamp which had been burning badly was killed by a 200 volts alternating current. On the other hand, contact with currents carrying 2000 volts pressure has been made and no serious injury followed. Although opinions are divided as to the comparative dangers of "continuous" and "alternating" currents, it is generally believed that of the two the "alternating" current is the more dangerous. Between 1902 and 1908 there were three fatalities due to continuous currents of 250 volts and lower, whereas during the same period 30 deaths were the consequence of alternating currents. The Board of Trade considers alternating currents to be twice as dangerous as continuous. There is no proof that any one man is more susceptible to electric shock than another. It is, as already stated, rather a question of good or bad contact, dampness of skin, and amount of current entering the body. A dry skin offers greater resistance to the entrance of electrical currents than the same when moist. Where the contact is good and conditions

[1] Part of a clinical lecture delivered in the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Nov. 23rd, 1910.

Mammary Cancer, said he should consider, first, the diagnosis of the various mammary tumours; secondly, their genetic relationship to one another and in what circumstances innocent tumours might develop into malignant type; and thirdly, the possible steps which might be taken to prevent innocent tumours from becoming malignant. By means of lantern slides of microscopic and macroscopic sections, Mr. Handley clearly demonstrated the pathological anatomy of fibro-adenomata through their varying stages. He quoted and showed slides of pathological specimens showing the relationship between fibro-adenoma and carcinoma—e.g., in one case carcinoma developed in a breast six months after the removal of an innocent fibro-adenoma; also, in the museum of St. Bartholomew's Hospital there is a specimen of a fibro-adenoma with a carcinoma in the centre of it. Therefore he always advised the removal of fibro-adenoma, and in addition he always swabbed out the cavity caused by its removal with some strong antiseptic solution so as to destroy any stray cells of the tumour left in its removal. On the other hand, types of soft fibro-adenoma sometimes became very rapid in their growth, and he had no doubt these occasionally took on a sarcomatous type. In the same way Mr. Handley followed out the course of the growth of duct papilloma, and showed a beautiful example with a duct papilloma projecting in the lumen of the duct, and having eroded the opposite wall; beyond this were undoubted signs of duct cancer. He advised the complete removal of the breast in all cases of duct papilloma, in fact, wherever there was serous discharge at the nipple. Turning to the inflammatory tumours, chronic mastitis was probably the chief precursor of malignant disease. He regarded Paget's disease as being carcinomatous from the commencement and only secondly becoming eczematous. Mr. Handley pointed out that "pig skin" was not always malignant, but might be due to syphilis or tubercle as it was caused by lymphatic obstruction. The pits were the openings of the sweat glands where the skin was tied down to the subcutaneous tissue.

Mr. R. G. HOGARTH proposed a vote of thanks to Mr. Handley and Dr. C. H. CATTLE seconded this.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF SURGERY.

*Two Unusual Gall-bladder Cases.—Congenital Fistulæ.*

A MEETING of this section was held on Jan. 20th, Mr. SETON PRINGLE being in the chair.

Dr. W. S. HAUGHTON read a paper on Two Unusual Gall-bladder Cases: (1) Foreign Body; (2) Typhoid Carrier. In the first case the patient had had well-marked biliary colic in two previous years, with severe gastric disturbance and pain during the intervals. A very small thickened gall-bladder, with adhesions to liver and stomach too dense to permit removal without stomach resection, was found. The gall-bladder contained two small calculi and a bristle, resembling a tooth-brush bristle, half an inch long and with a piece of thread tightly rolled round one end, which might have ulcerated through the stomach-wall. In the second case there was no definite history of typhoid fever, though there had been intermittent symptoms of partial intestinal obstruction for six years. Operation revealed a pear-shaped gall-bladder, the cystic duct forming a long pedicle. The walls were half an inch thick. It contained 18 calculi and much white milky fluid containing a pure culture of typhoid bacilli. The blood was highly agglutinating.—Dr. W. M. CROFTON said that, in spite of the absence of a history of typhoid fever, an anomalous febrile illness in a person who had come from Cairo—a hotbed of typhoid fever—was suspicious. No conveyance of the disease was proved.—Mr. SETON PRINGLE inquired whether the area of tenderness opposite the tenth and eleventh dorsal spines on the right side, said by Boas to be present in all gall-stone cases, had been found. He himself had found it only once, in spite of constant search. He suggested that it would be safer and simpler and would lessen the risk of sepsis to remove the gall-bladder unopened in such a case as the present. As the cystic duct was closed in the second case the woman might not be a carrier. Infection of the gall-bladder, he thought, might occur through the mouth without typhoid fever.—Dr. H. STOKES asked why it was so difficult to pass a probe down the common bile-duct in the dissecting-room when it was easy in the living subject. Also whether the typhoid bacillus could live and multiply in a patient with marked agglutinating power.—Mr. A. J. MCAULEY BLAYNEY did not think Boas's tenderness to be relied on for diagnosis. He had never been able to find it himself. He had often had difficulty in passing a probe into the cystic duct in the living, probably from a valve-like condition of the mucous membrane. From the high agglutinating power the patient must have absorbed a considerable amount of typhoid poison. She had probably had typhoid fever.—Dr. T. P. C. KIRKPATRICK said that there was no evidence that this patient excreted typhoid bacilli, so she could not properly be called a typhoid carrier.—Dr. W. PEARSON said that, as to removal of the gall-bladder, the questions were: 1. If not removed would it be a source of danger to the patient? 2. Was anything to be gained by leaving it behind? In contracted gall-bladder the likelihood of cancerous changes suggested removal, as did also stricture of the cystic duct. There was no evidence that the gall-bladder had any other function than as a reservoir for bile, while Opie's experiments showed that mucus rendered the bile innocuous. Therefore, as cholecystectomy was more serious than cholecystostomy, in suitable cases of cholecystitis the bladder should be left.—Mr. K. E. L. G. GUNN reported an instance in support of the contention that it was not sound practice to remove the gall-bladder in every case.—Mr. R. A. STONEY said that there was often difficulty in passing the probe in the living from adhesions or the tortuous course of the cystic duct. When the bladder was fairly normal it was better to leave it, especially in young patients, but with well-marked changes it was better to remove it. As to the relative merits of cholecystectomy and cholecystostomy, statistics could not be relied on, because the former was done in severe cases, the latter in milder ones.—Mr. HAUGHTON and Dr. CROFTON replied.

Dr. J. H. P. BOYD BARRETT read a paper on Congenital Fistulæ, confining his remarks to fistulæ of the umbilicus, external ear, preauricular area, and coccygeal area. Laparotomy was suggested in umbilical fistulæ where the possibility of adherence of the ileum to the umbilicus through a Meckel's diverticulum existed.—Mr. STONEY related two cases of sacral fistula simulating ischio-rectal abscess. In the first case the abscess had been twice opened. Mr. Stoney then opened it and found the fistula lined with skin, which had probably formed the route of infection from the anus. The abscess was scraped out and the fistula dissected out. There had been no recurrence.—Mr. GUNN related a case from the Adelaide Hospital to show that it was not so easy as Dr. Barrett had implied to distinguish between umbilical fistula and adenoma.—Dr. STOKES and Dr. PEARSON related cases.—Mr. SETON PRINGLE suggested that where the diagnosis lay between patent urachus and intestinal fistula, it might be well to give the patient methylene blue and see if the escaping fluid became coloured.—Dr. BARRETT replied.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on Feb. 3rd, Professor R. Muir, the President, being in the chair.—Professor R. Stockman read a paper on the Clinical Symptoms and Treatment of Chronic Subcutaneous Fibrosis. This condition is, in Professor Stockman's experience, a very common one, and is secondary to various acute and chronic affections—e.g., acute rheumatism, influenza, general gonococcal infections, and mucous colitis. It consists in an irregularly spread, patchy, chronic inflammation of the subcutaneous connective tissue, which involves also the small peripheral nerves and blood-vessels. Microscopic examination of an affected patch shows the fibrous tissue thicker and denser than normal, with numerous fibroblasts, the small nerve twigs running through it being in a condition of interstitial inflammation, and the blood-vessels showing peri- and endo-arteritis. Implication of nerves gives rise to so-called "rheumatic" symptoms, aching, pain, stiffness, neuralgia, numbness, tingling, chilliness, lack of vigour. An erroneous diagnosis of neurasthenia is often made. The condition is common at all ages, in both sexes, and quite independently of obesity. The thickenings are readily felt and usually tender on pressure. When they occur in stout

persons the subcutaneous fat tends to form larger or smaller masses round them. Such masses are deposited mostly in the ordinary situations of fat accumulation, especially on the abdomen, hips, and thighs, and are often very painful on pressure, the condition then being identical with that described by Dercum as "adiposis dolorosa." Treatment in the case of thin patients consists in massage, daily exercises directed to stretching the altered fibrous connective tissue and to accustom it to movement, along with an active open-air life. In the case of stout or plump persons, the superabundant fat must first be removed by a more or less strict diabetic diet, and the administration of thyroid gland or liquid extract of fucus vesiculosus. Perseverance on these lines for some months usually results in a cure, or, at least, considerable improvement; but in cases where the subcutaneous fibrous tissue is dense and widespread with little fat, very moderate betterment is to be expected.—Dr. T. W. Dewar read a paper on the Treatment of Phthisis by means of the Intravenous Injection of an Ethereal Solution of Iodoform. After ten years' experience of this method of treatment Dr. Dewar's belief is that in an early uncomplicated case of pulmonary tuberculosis with good veins, three or four months of iodoform treatment, without special diet or rest, will effect a cure. Such a case would be one presenting the physical signs of apical consolidation on one side. In more advanced disease, with breaking down in one upper lobe and consolidation in some part of the other lung, iodoform treatment for a year or more, together with modified rest and extra diet, will also succeed. Even in far advanced cases with vomicæ improvement occurs. Dr. Dewar has treated several men who prior to receiving injections were unable to work, but who soon resumed it, and have been able to continue it when undergoing treatment. The doses given vary from ¼ to 1 grain of iodoform, and are generally administered three times a week. The occurrence of toxic symptoms, increased temperature, or increase of sputum are indications for reduction of the dose. How iodoform in such small doses can counteract the virulent poison of the tubercle bacillus is unknown. Dr. Dewar suggests that it may act germicidally as its own molecule; or from its decomposition in the body nascent free formic aldehyde and nascent free iodine, both powerful antiseptics, may be formed; or it may stimulate phagocytosis; or it may act as a toxin, inducing the formation of an antitoxin inimical to the growth of the tubercle bacillus. Dr. Dewar has had no success with tuberculin treatment, and stated reasons for his belief that no success is to be expected. As the results of sanatorium treatment admittedly leave much to be desired, he urged that the iodoform treatment be given a thorough trial.—Dr. John Guy said that he had at present under his treatment in the Bridge of Weir Sanatorium 35 cases of phthisis, and he showed the records of 12 of these who had been under treatment for periods varying from 9 to 22 weeks. He had failed to see any decided benefit accruing, and some of the cases had become continuously worse while being treated.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 3rd, Dr. Leonard Williams, the President, being in the chair.—Dr. Eardley Holland read a paper on the Diseases of Women which are directly due to Childbirth and their Prophylaxis during Labour and the Puerperium. He said that 50 per cent. of the cases of women with gynæcological diseases are due to trouble at labour or in the puerperium and are preventable by proper management. Lacerations of the perineum are generally due to lack of knowledge of the way to preserve the perineum; and severe lacerations are caused by delivery of the head in unreduced occipito-posterior presentations and by too rapid delivery of the head by forceps. Lacerations should always be sutured, otherwise they leave raw surfaces for the entrance of bacteria. Prolapse of the uterus is not due to lacerations of the perineum, but to injuries to the pelvic floor. The levator ani is the chief support of the uterus and forms a muscular diaphragm on which the head rests, and if the head passes through too quickly fibres of the levator ani get torn. Lacerations of the cervix are due to too rapid passage of the head through the undilated os, hence the application of forceps before full dilatation of the os is absolutely contra-indicated. Post-partum hæmorrhage occurring when the uterus is small and hard as a cricket-ball is due to severe laceration of the cervix. Subinvolution is one of the commonest diseases and mostly occurs in women with large families who get up too early. It is associated with congestion of the uterus, which is due to retention of blood clots, bits of placenta, and membranes. Hence, to prevent subinvolution, care should be taken to empty the uterus. Of all the minor diseases of women a permanent retroflexion is the most troublesome. The uterus is always subinvoluted and congested and causes painful menstruation, pain on coitus, leucorrhœa, &c. 75 per cent. of all retroflexions arise in the puerperium and are essentially preventable and curable. They occur mostly in primiparæ and arise on the eighth to the twelfth day of the puerperium. Treatment consists of rest in bed and replacement of the retroflexed uterus with the finger, the subinvolution being treated with very hot vaginal douches and big doses of ergot and strychnine. Generally, to prevent puerperal diseases, thorough asepsis during labour should be aimed at, and as few examinations as possible should be made. In the second stage of labour the patient should never be allowed to go more than two hours. If the head is presenting and there are no contra-indications forceps should be applied. For if the patient is left longer resistance is lowered, needless pain is suffered, asphyxiation of the child is risked, &c. The third stage ought to be left to nature. The hand ought to be kept lightly on the fundus of the uterus, but not heavily pressed. After expulsion of the placenta the hand should be kept on the uterus for 15 minutes and the uterus should be rubbed and squeezed so as to get rid of blood clots, bits of placenta, and membranes.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Dr. F. Hinds, the President, being in the chair.—Dr. A. W. Williams showed a case of Rodent Ulcer near the inner canthus, which had been treated by means of X rays. This had nearly healed the ulcer, but there was left a resistant point which a single application of solid $CO_2$ over lead-foil had cured.—Dr. R. J. Ryle moved, and Dr. J. Lambert seconded, the following resolution:—

> That the absence of control of the feeble-minded is a contributory factor of great importance in relation to crime, to immorality, and to the problem of unemployment, and that the lack of control, because of the greater fecundity of the feeble-minded, seriously reduces the mean average of the health, the intelligence, the morality, and the physique of the race, and they therefore urge upon His Majesty's Government the necessity of placing in some authority, subject to such safeguards as may be thought advisable, the permanent care and control of these unfortunates; and that copies of this be forwarded to the Prime Minister, the President of the Board of Education, the President of the Local Government Board, and the borough Members of Parliament.

—A discussion took place in which the following members spoke: Dr. L. A. Parry, Dr. W. Furner, Mr. H. H. Taylor, Mr. T. H. Ionides, Dr. C. H. Benham, the President, Dr. E. Hobhouse, Mr. H. Stott, Dr. Helen Boyle, and Dr. C. F. Bailey.—The resolution was then carried.

WESTMINSTER CITY COUNCIL AND MEDICAL CERTIFICATES FOR WORKMEN.—The question of certification of illness and payment of sick pay to workmen formed the subject of a report presented to the meeting of the Westminster city council on Feb. 2nd by the general purposes committee. It appeared that the practice subsisting under the standing orders of the council was that workmen were entitled to certain sick pay in the case of illness or accident subject to the production of a weekly medical certificate from the Poor-law medical officer of the district in which the workmen resided. The cost of these certificates (2*s.* 6*d.* each) was borne by the council and had annually averaged during the last five years £237. In June of last year the council decided that where a workman's illness was of longer duration than one week he should also, at his own expense, produce a weekly certificate from the doctor by whom he was being attended for his illness to the effect that he was receiving medical treatment. The latter certificate met all the council's requirements, and it was agreed that the certificate from the Poor-law medical officer should be dispensed with, and notice was ordered to be given to the Poor-law district medical officers terminating the arrangement under which they issued weekly certificates. Workmen in future would therefore be required to obtain at their own expense certificates from a medical practitioner in the event of being unable to perform their duties.

# Reviews and Notices of Books.

*The Treatment of Cataract.* By Lieutenant-Colonel HENRY SMITH, B.A., M.D. R U.I., M.Ch., Indian Medical Service. Calcutta: Thacker, Spink, and Co. 1910. Pp. 121.

Lieutenant-Colonel Henry Smith's strenuous advocacy of the intracapsular method of extracting cataract is familiar to ophthalmologists all over the world. It is a merciless assault on the practice of the most distinguished surgeons since Daviel first extracted a cataract in 1750. Such temerity can be justified only by reasoned argument and proved success. If these had not been forthcoming in appreciable degree Lieutenant-Colonel Smith would not have obtained the following of disciples who act as his lieutenants in India and his missionaries in the United States. We particularly welcome this work on the whole range of the treatment of cataract in all its forms, because it enables us to obtain a clearer and juster conception of the author's attitude to the classical method of extraction which he has almost, if not entirely, abandoned. In his scattered papers and addresses the statement of his thesis is so dogmatic and polemical that, however willingly these defects are condoned and excused as the expression of a perfervid enthusiasm, they have militated against a calm and judicial estimate of his claims. Here he has a larger canvas and is compelled to depict details with greater regard to their true perspective. The dogmatism is still apparent, but it is less misplaced in a didactic treatise.

Much of the book is necessarily devoted to the treatment of forms of cataract for which the intracapsular method is unsuited. It differs little except in comparatively unimportant details from the same sections in other textbooks. A lengthy chapter devoted to Daviel's operation, as the author prefers to call the usual method of extraction, shows that he is fully conversant both in practice and theory with its admitted defects. We are not inclined to view as lightly the many improvements in technique which have been introduced since Daviel's time, and which in our opinion make the name "Daviel's operation" inadvisable. A very careful consideration of the *pros* and *cons* of this operation and of the intracapsular method confirms us in the opinion that the latter is eminently suited for the extraction of immature cataract if only the majority of ophthalmic surgeons could acquire the dexterity to command such success as Lieutenant-Colonel Smith claims for himself. But on his own showing this can only be attained by practical instruction from a master of the art, and he must admit that few are in a position to make a pilgrimage to India for the purpose. The book does not succeed in convincing us that the operation should be undertaken for mature or hyper-mature cataract, at any rate by the weaker brethren in the West. We say unhesitatingly, however, that every ophthalmic surgeon ought to read the book and weigh the arguments for himself with the seriousness they merit.

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*Normal Histology, with Special Reference to the Structure of the Human Body.* By GEORGE A. PIERSOL, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania. With 438 illustrations, many of which are in colours. Eighth edition. London and Philadelphia: J. B. Lippincott Company. Pp. 418. Price 15*s.* net.

THE eighth edition is a great advance on its earlier predecessors. It has been rewritten and greatly improved. The author remarks that histology often has its place at the beginning of a medical curriculum, so that the student is required to study microscopical details of organs before he has become acquainted with their gross anatomy. For this reason—and we think wisely—the author, to minimise this deficiency, has prefaced some of the histological descriptions with references to the "macroscopic features" whenever such explanations seem desirable, as, for example, in the chapters on the central nervous system. The treatise, be it noted, has special reference to the structure of the human body.

The illustrations are admirably and most faithfully reproduced, most of them original. Indeed, the author has introduced many illustrations which are not usually found in histological text-books. We may mention a few amongst many: developing blood-vessels in embryonic subcutaneous tissues, section of leaflet of tricuspid valve and of lymphatic valves, perivascular lymph spaces of the retina, coccygeal gland, wall of the pharynx showing the pharyngeal tonsil, the gall-bladder, velum interpositum, pineal body with its calcareous concretions, external auditory canal, cervical mucous membrane of the uterus, and the labia. The figures of injected organs are particularly good, and give the student an excellent idea of the manner in which the main vessels get into a dominant position in an organ from which they can most efficiently supply its individual parts with blood. In the coloured diagrams of the hepatic lobule the relative size of the hepatic artery and portal vein might be improved. The illustrations throughout reach a high standard of excellence, while the text is also admirable, not too diffuse, but giving the salient features of the various structures with sufficient fulness to impress important details without wearying minutiæ. An additional commendable feature is that in every case the magnifying power is appended to the original illustrations, which were drawn with the aid of the camera lucida by Mr. Louis Schmidt, obviously a faithful reproducer of typical and excellent preparations.

Professor Piersol deserves unstinted praise for the excellence of his treatise; it is one of the best and most useful in the English language. A short appendix is added concerning microscopical technique, presenting a few methods which are satisfactory and thoroughly trustworthy for the majority of histological examinations. We commend most heartily this work to all interested in the histology of the human body.

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*Practical Motherhood.* By HELEN Y. CAMPBELL, L.R.C.P. & S. Edin., L.F.P.S. Glasg. London: Longmans, Green, and Co.; Johannesburg: R. L. Esson and Co. 1910. Pp. 535. Price 7*s.* 6*d.*

WE do not gather from a careful perusal of this book that Dr. Helen Campbell is entitled by experience to undertake so ambitious a task as writing a book of 500 pages on the subject of practical motherhood. Nevertheless, in this case the reader benefits by the compensatory care which the author has clearly taken to consult the best authorities, to quote them accurately, and, so to speak, pick their brains to the greatest advantage. No doubt, the reader will appreciate the fact that the text is not encumbered with particulars or references to the sources of information.

The subject matter is well arranged, clearly and simply stated, and in most respects accurate. The first part is concerned with the Hygiene of Pregnancy, Infancy, and Childhood, the second part with Feeding in Infancy and Childhood, the third part with Difficulties and Illness in Infancy and Childhood, the fourth part with the Development and Training of the Mind in Childhood, while the fifth and final section is devoted to the School Age. In the preface Dr. Campbell states: "I am of opinion that the practical knowledge which we owe to the work of our several pediatrists, in so far as it concerns the feeding of the healthy infants, should belong to every mother, and that if its essentials were universally realised difficult feeding cases would be much more rare." This is not only

the motive of the author's plain talking in Section II., but it is clearly the principle which guides her in the chapters which deal with obstetrics and pedagogy. "How much is good for mothers to know" is a question which has always vexed the mind of the medical profession, but where angels have fear to tread Dr. Campbell has entered boldly, and she has told them everything, and what she has told them is perfectly true—but is it good for them?

The best section is undoubtedly that which is concerned with the feeding of infants. The instructions at first sight appear a little complicated, but if the whole section is read no difficulty will be found in following out all the details with complete accuracy. The whole method is founded on a percentage basis, but the reader is not confused by tables or figures. The goal at which the author aims is to feed infants on milk and cream mixtures, but she realises and explains to her readers that the infant has to learn to digest cow's milk in the same way that it has to learn many other functions.

As a work which is admittedly written for the lay public and for mothers this book is unusually accurate and scientific. It is also so practical that medical men in general practice could only assimilate its contents with advantage to their patients.

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*Sewage Disposal in the Tropics.* By W. WESLEY CLEMESHA, M.D. Vict., D.P.H., Major I.M.S., Sanitary Commissioner, Bengal; Professor of Hygiene, Calcutta University; late Officiating Sanitary Commissioner, Madras. Calcutta and Simla: Thacker, Spink, and Co. London: W. Thacker and Co. 1910. Pp. 232. Price 15*s.* net.

IT is very interesting to learn from those who have studied closely the practical side of the subject that the introduction of the biological method of the disposal of the sewage into western countries has given remarkable results, so that although all that was at first claimed for the process may not now be accepted there can be no doubt that to use certain organisms for converting offensive excrementitious matter into simple substances is, in the main, a success. To describe the measure of success reached is the purport of Major Clemesha's work, and he has written an account of the subject which will be valuable to all those engaged in practical sanitation, more particularly as the work is based upon a strenuous laboratory and practical study. The problem of sewage disposal presents in the East difficulties which do not exist in western countries. The habits of the people themselves constitute a very marked difference from those of the inhabitants of Europe. In rural areas practically no method of disposal of night-soil and urine exists except the one that dates back thousands of years ago, when it was laid down in the Shastra that every individual should go out early in the morning to some waste land for the purposes of nature. That simple method must obviously be abandoned when the rural district gives way to the town, and when a thickly populated area is rapidly formed. This experience has been repeated again and again in the modern history of India, and so a definite scheme of sanitation has to be devised, which has commonly taken the shape of a system of latrines, "public and private, conserved by hand." The water-carriage system is only installed in the very largest cities. The hand-removal system must remain usual for the present, though here and there attempts are being made to supplant it by water-carriage. Meantime, splendid work is being done to free the hand-removal system from reproach by applying to it the principles of up-to-date biological treatment. It is in this direction that Major Clemesha and his colleague, Dr. Fowler, are doing admirable work in the great cause of sanitation in an enormous empire, and this volume shows that by the use of the biological method, when certain conditions are observed, the whole of the excreta from a community can be satisfactorily disposed of in specially designed latrines, thereby avoiding the nuisance and the dangers to health involved by the removal of a large mass of putrescible material. The chapters on the design of the latrine, the tank, the chemical action in the tank, the arrangement of contact beds, the aerobic and anaerobic treatment of sewage, the septic tank effluent, all show a remarkable attention to detail and an intimate knowledge of the factors which must be taken into account if success is to be assured. The book altogether is a valuable practical contribution to the problem of sanitation in the East and should help very materially the advancement of a great and most important sanitary campaign.

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*Manual of Operative Surgery.* By JOHN FAIRBAIRN BINNIE, A.M., C.M. Aberd., Professor of Surgery, Kansas State University, Kansas City. Vol. II., Vascular System, Bones and Joints, Amputations. Fourth edition, revised and enlarged, with 550 illustrations. London: H. K. Lewis. 1910. Pp. 553. Price 14*s.* net.

IT would have been difficult to express a higher opinion of a work on operative surgery than that we have put forth on previous appearances of this work. The book occupies a position amongst works on operative surgery. It would be of very little value to the junior student, but to the senior student, and especially to the surgeon engaged in the active work of his profession, it is just what is wanted to enable him to be fully conversant with the most recent advances. It is written in a style which enables the reader to see almost at a glance the essential points connected with any operation and to compare readily the relative merits of the different methods of surgical treatment. This second volume completes this edition of the work. The plan is admirable, and it has been admirably carried out.

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*Ergebnisse der Chirurgie und Orthopädie. (Contributions to Surgery and Orthopædics.)* Herausgegeben von Erwin Payr of Greifswald und Hermann Küttner of Breslau. Vol. I. With 148 illustrations in the text and 4 plates. Berlin: Julius Springer. 1910. Pp. 525. Price 20 marks; bound, 22 50 marks.

THIS is the first volume of an attempt to put forth the latest facts and series connected with special subjects in surgery. In each case an author has been chosen, thoroughly familiar with the subject on which he has to write and fully competent to record its latest developments. In each case the article is preceded by the recent bibliography which represents the material on which the article has been based, though naturally the author has supplied original information himself.

The first subject dealt with is the transplantation of vessels and organs by means of suture of the vessels, and it has been written by Professor Rudolf Stich of Bonn. It is provided with 34 illustrations and it describes practically all that is known at the present time of the very difficult subject of suture of vessels, especially as applied to the transplantations of organs. Professor Hermann Küttner of Breslau has written on Circumscribed Myositis Ossificans. He recognises three forms—the traumatic variety, a non-traumatic variety, and a neurotic form. Dr. Hermann Coenen of Breslau has written an article on Opsonins, in which he describes the technique and discusses the value of the method. Several other valuable papers are contained in the volume. Thus Professor B. Bardenheuer and Professor R. Graessner have written on the Treatment of Fractures, Dr. Josef Hertle on the Methods of Replacing Deficiencies of the Skull, Dr. Felix Landois on the Parathyroid Glands, Dr.

E. Melchior on Exophthalmic Goitre, Professor Ferdinand Sauerbruch on the Present State of the Employment of Differences of Atmospheric Pressure in Operations on the Organs contained in the Thorax, Dr. Günther von Saal on Benign Tumours of the Breast, Dr. Martin Kirschner on the Operative Treatment of Umbilical Hernia, and Dr. W. Hirt on Hypertrophy of the Prostate. The articles naturally differ in importance, but there is not one of them which does not give a clear exposition of its subject.

It is to be hoped that future issues will maintain the high standard set by this volume, and we think that the editors, Dr. Payr and Dr. Küttner, have inaugurated a useful addition to surgical literature. One suggestion we would like to make. Many surgeons will wish to separate the volume into its constituent papers, and this will be much easier if each article is made to begin on a right hand page.

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*A Manual of Physiology, with Practical Exercises.* By G. N. STEWART, M.A., M D. Edin., D.P.H. Camb., Professor of Experimental Medicine in Western Reserve University, Cleveland. Sixth edition. With coloured plates (2) and 449 other illustrations. London: Baillière, Tindall, and Cox. 1910. Pp. 1064. Price 18*s.* net.

THE first edition was published in 1896; the fourth in 1900; the fifth in 1906, with 911 pages and 395 illustrations; and now we have the sixth edition, with the illustrations increased to 449 and 1064 pages of text. The general arrangements are retained, but much has been rewritten—e.g., the introductory chapter on proteins and the general chemistry of living matter. The histology of leucocytes has been relegated to small type to make room for additions to such matters as viscosity of blood, "titratable" alkalinity of blood or serum, hæmolysis and allied phenomena connected with blood. "Metschnikoff" (p. 52) is still written with an "s." In the practical exercises on blood slight changes are made and the figure of a hæmatocrit is added. Altogether about 11 pages are added to the introduction and Chapter I., on the blood and lymph.

Without going into changes of detail in the successive chapters, we have compared this edition with its predecessor, and we find that it has been most thoroughly revised and brought quite up to date by judicious additions. We think that a few outstanding dates in the history of the subject might be added, so that the student might know how recent are some of the most fundamental facts—e.g., the experiments of Stannius, the discovery of vaso-motor nerves, the vaso-dilation action of the chorda tympani by Bernard, when Hales first measured the blood pressure and Ludwig recorded it, when Eckhard discovered the nervus erigens, and Addison made his epoch-marking discoveries in relation to the suprarenal capsules, &c., as well as those of older date, such as the experiment of Mariotte.

Full advantage has been taken by the author of the newer researches on the *a.-v.* bundle, and the observations on pulsatile phenomena in veins. The author gives every here and there a keen critical account of contending theories—e.g., Is the beat of the heart neurogenic or myogenic? What are the processes connected with the secretion of urine? The summaries printed in italics are useful. The rice ordeal of India might be added under salivary secretion, and on p. 361 we should expect a note on the remarkable acid salivary secretion of Dolium galea. Under muscle rigor we do not find any account of Sommer's movements. On p. 468 is Berkely a misprint for Berkley?

The central nervous system now occupies 145 pages instead of 120. The author has woven in the leading new facts recorded in Sherrington's "Integrative Action of the Nervous System" and Campbell's work on the cerebrum, including notice of the question recently reopened by Marie as to the relation of aphasia to lesions of the inferior frontal convolution, and of the autonomic nervous system of Langley. A very full account is given of the phenomena observed after section of cutaneous nerves by Trotter and Davies, following on the pioneer work of Head, and the student is "warned that the distinction of protopathic and epicritic sensibility has met with adverse criticism." Under the head of radium we do not find reference to the spinthariscope of Crookes (p. 950). A new chapter is added on the transplantation of tissues as carried out by Guthrie and others, and one on "parabiosis."

Several of the woodcuts are reversed as they are inserted in the text—e.g., Barker's figures of a pyramidal cell, the neural canal, and brain showing the Rolandic fissure from above as determined by Thane's rule.

The work maintains its high scientific character and will be read with advantage by all candidates preparing for the higher examinations in physiology and desiring to obtain a broad grasp of physiological problems. We cordially commend its perusal also by the practitioner, whose scientific education is now reaching so high a level that he will be able to benefit by the teaching afforded.

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*An Epitomised Index of Dermatological Literature.* By A. WINKELRIED WILLIAMS, M.B., C.M. Edin. London: H. K. Lewis. 1910. Pp. 275. Price 12*s.* 6*d.* net.

THIS useful book will be welcomed by all who have experienced the tedious difficulties of looking up the literature of past years by a prolonged search through the index pages of the 21 volumes of the *British Journal of Dermatology*. The subtitle—"An Epitome of Volumes I. to XXI., inclusive, of the British Journal of Dermatology"—is the true description of the book, which is not an index to all dermatological literature. The book would have been more useful if it had been possible to add references to the more outstanding dermatological literature in other British medical publications, but the additions and omissions might have led to invidious criticism, and the size of the volume must have been doubled. This drawback is in part overcome by the fact that the book is interleaved throughout, so that the physician who uses it may add his own references culled from any source and also keep his index up to date in future years.

We are surprised not to find the word "Vaccines" in the index, and on turning to "Opsonins" we find no reference to the demonstration given by Sir Almroth Wright and Captain S. R. Douglas, I.M.S., before the Dermatological Society of London in June, 1904, and reported in Volume XVI. of the *British Journal of Dermatology*. Other references for which we have looked have been correct, and we consider that every English-speaking dermatologist will be grateful to Dr. Williams for having performed a task which will save his colleagues so much uncongenial labour.

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## LIBRARY TABLE.

*Parent and Child: A Treatise on the Moral and Religious Education of Children.* By Sir OLIVER LODGE, D.Sc., F.R.S. London and New York: Funk and Wagnalls Company. 1910. Pp. 73. Price 2*s.* net.—In seven pithily worded chapters dealing respectively with child nature, parental influence, imparting of knowledge, preparation for life, preparation for science, preparation for literature, and preparation for religion, Sir Oliver Lodge brings us back to many true principles that are in danger of being overshadowed, if not entirely cast aside, in our modern State-controlled methods. Preparation of the child for individual life he proclaims the main object of education. The brooding and meditative moods of children should be respected. Stress

is laid on good nursery traditions, training in consideration for others, modesty, helpfulness, reverence for elders, and self-subordination, all points to the neglect of which there is too great a tendency. With regard to fairy-tales, which some would have us ruthlessly discard, while he admits that it is possible to cultivate them to excess, he says that to exclude them and forbid children to hear the old immortal stories—part of the tradition of the race—would be a literary crime. In the inquiring mood children should be supplied with facts; in the imaginative mood with fairy-tales. Some things are better than true. Children must learn that things are not what they seem, and that works of imagination and beauty have a truth of their own which can be felt but not stated. The book can be commended to the thoughtful study of parents and those *in loco parentis*.

*A Text-book of Organic Chemistry.* By A. F. HOLLEMAN, Ph.D., F.R.A. Amst. Edited by A. JAMIESON WALKER, Ph.D. Heidelberg, B.A.; assisted by OWEN E. MOTT, Ph.D. Heidelberg. Third English edition, partly rewritten. London: Chapman and Hall, Limited. New York: Wiley and Sons. 1910. Pp. 599. Price, cloth, $2.50.—We anticipated in a review of the previous edition (THE LANCET, Feb. 15th, 1908) that this work would be widely appreciated. We predicted its success because of the author's gift of discriminating between principles and facts which, on the one hand, are immediately essential to the beginner's grasp of the subject, and those on the other which, at all events in his early studies, only conspire to upset his mental digestion by reason of their richness and intricacy. The new edition shows that many alterations and additions have been made, and a rearrangement of the subject-matter has rendered it necessary to re-number the paragraphs from 199 onwards. We note that the editor, in accordance with a suggestion in the previous review, has introduced the protein classification adopted by the Chemical Society of London and the English Physiological Society. We know of no text-book on the difficult subject of the chemistry of the carbon compounds that is written more clearly than is Professor Holleman's book.

*Treatise on Diseases of the Skin for the Use of Advanced Students and Practitioners.* By HENRY W. STELWAGON, M.D., Ph.D., Professor of Dermatology in the Jefferson Medical College, Philadelphia, &c. Sixth edition, thoroughly revised. With 298 illustrations in the text and 34 full-paged coloured and half-tone plates. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 1195. Price 25*s.* net.—The text-book on diseases of the skin written by Professor Stelwagon occupies such a high position in the opinion of those qualified to judge that any expression of opinion of its value is almost unnecessary, but there may be some medical men who, not having devoted special attention to this branch of medicine, are unacquainted with the work, and therefore it may not be superfluous to say that for all those who desire a thoroughly trustworthy and up-to-date text-book on dermatology we can recommend the volume before us. The rapid appearance of revised editions indicates the great recognition which the work has met with; only eight years have elapsed since the book appeared, and already we welcome the sixth edition. The opportunity of a new edition has enabled the author to omit that which has become obsolete, to rewrite the article on pellagra, and to describe sporotrichosis. We are pleased to see included an account of the uses of carbonic acid snow, as the more the therapeutic agent is employed the more it will be valued.

*Man's Redemption of Man: A Lay Sermon.* By WILLIAM OSLER. London: Constable and Co. 1910.—Professor Osler strikes the keynote of his theme in his opening sentence: "To man there has been published a triple gospel—of his soul, of his goods, of his body." The third engages his present attention. He traces the struggle against disease and pain, those distressing clouds that darken the outlook on the world of life, from its "tap roots" in Hellenic thought to the grand development of preventive medicine in the present day. This lay sermon is thoroughly interesting.

*The Ruins of Fountains Abbey.* By the Rev. A. W. OXFORD, M.A., M.D. Oxon. With illustrations and photographs by J. REYNOLDS TRUELOVE, A.R.I.B.A. London: Henry Frowde. 1910. Pp. viii. + 245. Price 3*s.* 6*d.* net.—This excellent little book is based on the recent investigations of the ruins of Fountains Abbey by Mr. St. John Hope and Mr. Arthur Reeve. As it is written in simple language, with all architectural terms clearly explained, it will commend itself to the general tourist as a handy guide to this lovely Abbey. Moreover, under the guidance of Dr. Oxford the reader will be able to realise something of the magnificence of the old Cistercian monastery, with its church, chapels, guest-houses, infirmary, and kitchens, and to follow the daily life of its inmates. The latter half of the volume contains a history of the Abbey and its rulers, translated from old records. Most medical men are possessed of a scientific or artistic hobby. To a great many the physical sciences most appeal, and we have also amongst us metaphysicians, musicians, and artists. A considerable number find their recreation in archæology, and to these we can commend Dr. Oxford's little volume with confidence. The beautiful illustrations form an important feature of the book, but a list of these illustrations might with advantage have been given as an aid to the student desirous of referring to some architectural detail.

## JOURNALS AND MAGAZINES.

*The Quarterly Journal of Medicine.* Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. IV., No. 14, January, 1911. Oxford: At the Clarendon Press. Subscription price, 25*s.* per annum; single numbers, 8*s.* 6*d.* each net.—The contents of this number are: 1. The Bacteriology of Human Bile, with especial Reference to the Typhoid Carrier Problem, by J. F. Windsor. The contents of the gall-bladder in 103 cases have been examined bacteriologically, and the results are recorded and discussed. The bile proved to be sterile in less than one-fourth of the cases—viz., in 22. The organism most commonly obtained was the bacillus coli, but in four cases bacilli of the typhoid-paratyphoid group were found, although not one of the four was definitely known to have had enteric fever. 2. On Carcinoma Originating in the Suprarenal Medulla in Children, by R. S. Frew. From a study of certain cases observed by himself and of the other cases recorded in the literature, Dr. Frew comes to the conclusion that this condition spreads by the lymphatic system, and that it gives rise to different appearances according to whether the left or right suprarenal is primarily affected, the secondary deposits showing a different distribution in each case. 3. Notes upon Alternation of the Heart, by Thomas Lewis. A brief description is given of a condition of divergent alternation of ventricle and carotid—i.e., one in which a large ventricular contraction corresponds to a small carotid upstroke. 4. The Influence of Certain Factors upon Asphyxial Heart-Block, by Thomas Lewis and B. S. Oppenheimer. 5. On Chylous and Pseudo-chylous Ascites, by R. L. Mackenzie Wallis and H. A. Schölberg, Part II. Two additional cases of pseudo-chylous ascites are described and the characters of the fluid are fully detailed. The distinctions between chylous and pseudo-chylous ascites are

tabulated and an analysis of the recorded cases with a full bibliography is given. 6. On Pneumococcal Peritonitis, by Harold Rischbieth. This paper is based upon a series of 57 cases in children and one adult case. It affords an interesting pathological and clinical study of this condition. 7. A *Résumé* of Some of the Evidence Concerning the Diagnostic and Clinical Value of the Wassermann Reaction, by Hugh Wansey Bayly. 8. Critical Review: Vertigo, by Sydney Scott. A valuable presentation of some of the principal features of vertigo, with a useful bibliography.

*Science Progress in the Twentieth Century.* Editors: H. E. ARMSTRONG, Ph.D., F.R.S., J. BRETLAND FARMER, D.Sc., F.R.S., W. G. FREEMAN, B.Sc., F.L.S. January, 1911. London: John Murray. Price 5*s*.—This quarterly journal of scientific work and thought contains papers on Molecular Architecture, by R. T. Colgate and E. H. Rodd; The Iron Supplies of the World, by J. W. Gregory, D.Sc., F.R.S.; Some Scientific Aspects of the Report of the Canada and West Indies Royal Commission, by Sir Daniel Morris, K.C.M.G.; The Sudden Origin of New Types, by Felix Oswald, D.Sc.; The Great Star Map: Part III., Star Positions, by H. H. Turner, D.Sc., F.R.S.; The Evolution of the Function and Structure of the Fins in Fishes, by H. H. Swinnerton, D.Sc.; The Translocation of Carbohydrates in Plants, Part II., by S. Maugham, B.A.; The Problem of Three Bodies, by F. W. Henkel, B.A.; The Prevention of Malaria, by E. A. Minchin, M.A.; and Recent Advances in High Temperature Measurement, by J. A. Harker, D.Sc., F.R.S. Mr. Minchin's article on malaria is a critical review of Professor Ronald Ross's book, "Prevention of Malaria." He considers Ross's attempt to deal with the problem mathematically hardly calculated to make the process any clearer to the ordinary person unaccustomed to express his thoughts in mathematical formulæ, but useful as a *memoria technica*, by means of which to keep in mind the various factors on which the prevalence of malaria in a given locality depends.

*Jahreskurse für Ärztliche Fortbildung* (*Post-Graduate Review*). A monthly journal. Munich: Lehmann. Price M.16 a year.—The November number is devoted to a consideration of the organs of special sense. Professor L. Bach deals with the eye. Some importance is attached to the influence of light with short wave length in the preservation of the sight. The work of Krusius on trachoma is accepted as proving the causal relation of a protozoon parasite to this disease, and an account is given of the evidence of the transmissibility of it by this means to apes. The problems of secretion and osmosis in relation to the metabolism of the eye are discussed at some length. In the treatment of inflammatory eye affections an important rôle is assigned to the use of both specific and non-specific sera. In particular the anti-pneumococcus serum has great value for the serpiginous ulceration of the cornea. The discussion of the recent methods for the treatment and diagnosis of tuberculous and syphilitic diseases seems a little redundant in this section, as these subjects have been dealt with fully in former numbers of this series. Professor v. Eicken contributes a most interesting article upon the detection of foreign bodies in the air passages and their removal. Brüning's instruments are described and illustrated with some detail. The question as to whether the bronchoscope should be passed through the larynx or by a tracheotomy wound is answered by saying that the latter method is indicated only in cases with much dyspnœa or when the foreign body is large and irregular. Professor W. Kummel writes on the diseases of the ear. His article is devoted almost entirely to the consideration of labyrinthitis. The course and functions of the various nerve tracts of the ear, the special functions and disorders of the cochlea and of the vestibule are each described. The subject of nystagmus in relation to disease of the inner ear is discussed at some length, and Bárány's caloric reaction is given in detail with regard to its method and scope. In conclusion, the non-infectious diseases of the internal ear are considered. ——The December number deals with surgery and allied subjects. Professor Payr devotes himself almost exclusively to the question of skin disinfection. The conclusion is reached that both for accidental wounds and those of an operation the iodine method is by far the best. It is used in the strength of 10 per cent. (this is five times as strong as B.P. tincture which is used in England). No soap and water are used and if any shaving has to be done it is performed with a dry razor. In the treatment of extensive contused wounds it is recommended to excise the whole wounded surface if this can be done within six to ten hours after its infliction. Glass drainage tubes are preferred to all others on account of their smaller liability to become blocked. The treatment of infected wounds by the local application of Peru balsam is strongly recommended. Professor Borchardt deals very fully with the subject of local anæsthesia. After describing the various methods and solutions, the employment of a 2 per cent. solution of novocaine combined with adrenalin is said to be by far the most generally useful method. Practically every region of the body in which the method can be used is described and illustrated. Professor Thiem concludes the volume by discussing the various problems relating to the legal aspect of accidental injuries. Of particular interest are his collected facts about the relation of tumours to mechanical injury and artificial injections. The occurrence of epithelial proliferation after the injection of scarlet red oil, the transmutation of carcinoma cells into those of sarcoma and *vice versâ*, the phenomena of Jensen's mouse tumour are some of the subjects that are shortly reviewed. All parasitic theories of the origin of cancer are dismissed as untenable. With regard to the question of heredity the largest number of collected cases of cancer histories give positive evidence of this inference in only 13 per cent. In these cases the inheritance is twice as often on the mother's as on the father's side. In 329 cases of married cancer patients 3 per cent. produced contact cancer in husband or wife. An interesting series of collected cases is given where there is clear evidence of carcinoma or sarcoma being the direct result of trauma. Körber's figures of the duration of life in different forms of cancer are summarised. From these it appears that the interval between the first symptom and death is shortest in the case of the gall-bladder (4·2 months) and longest in the case of the face (45·6 months).

*The Child: A Monthly Journal devoted to Child Welfare.* Edited by T. N. KELYNACK, M.D. Vict. London: John Bale, Sons, and Danielsson, Limited. Price 2*s*. net.—The February number (the fourth of Vol. I.) contains, like its predecessors, much interesting material. Professor W. H. Perkin, F.R.S., discusses the fireproofing of flannelette and the protection of child life, describing a process that, it is alleged, leaves undiminished the softness, warmth, and cosiness of the material; is non-poisonous; has no injurious action on the skin; and does not, as so many other processes do, come out in the wash. Dr. A. Hugh Thompson urges the formation of school ophthalmic clinics and tabulates the essentials thereof. Dr. D. M. Taylor discusses fatigue in school children, and especially emphasises the difference between ordinary or normal fatigue and the fatigue that has passed into a chronic state, describable as "jading" or "weariness." He discusses the signs and symptoms of the latter, its diagnosis and causation, and summarises the requisites for its prevention, respectively as they affect the teacher, the parent, the school medical officer, and education committees. "Medical Influence in the School" is the title of a paper by

Mr. W. J. Butcher, and this is followed by an interesting discussion on the Punishment of Children, in which almost every point of view is represented severally by Dr. Greville Macdonald, Mrs. H. O. Barnett, Professor E. P. Campagnac, Dr. H. Macnaughton-Jones, Mr. Thistleton Mark, Mrs. Edith Myers and Dr. Charles S. Myers, Miss Charlotte M. Mason, Mr. G. H. Archibald, and the Rev. Dr. A. W. Upcott. There are also a memoir of the Rev. Thomas Guthrie, D.D., by Lord Guthrie; a description of Cheltenham Ladies' College, by Miss E. M. Guinness, the vice-principal; and many other articles on the social economics of child life.

# Reports and Analytical Records
FROM
# THE LANCET LABORATORY.

### AMIDO-AZOTOLUOL MEDICINALE "AGFA."
(CHAS. ZIMMERMANN AND CO., 9 AND 10, ST. MARY-AT-HILL, LONDON, E.C.)

THE active constituent of scarlet R (Sudan red) is amido-azotoluol, scarlet R itself having been used for promoting or stimulating skin formation upon wounds. Amido-azotoluol medicinale "agfa," however, is said to be more efficacious than scarlet R. Its employment in the formation of skin is said to be astonishing. We have examined an ointment containing 8 per cent. of the active agent. We have also received specimens of scarlet red itself and an ointment containing 8 per cent. of this substance. This has also been used with the object of accelerating epithelial formation over granulating wound surfaces and the results are stated to be very satisfactory. They were first obtained by Professor Schmieden of Berlin in 1908.

### TRILACTINE FERMENT No. 1. TRILACTINE FERMENT No. 2.
(W. MARTINDALE, 10, NEW CAVENDISH-STREET, LONDON, W.)

These preparations are worthy of notice as they may be used in the place of sour milk in cases where milk is unsuitable for the patient. Trilactine ferment No. 1 is a pure culture of the Bulgarian bacillus in a liquid medium consisting of malt extract, milk sugar, and peptone bouillon. The No. 2 ferment contains the same bacillus, but with the addition of yeast in the same medium; it is adapted for use in diabetic cases and in obesity. The preparations have the advantage of presenting the active lactic acid bacillus in a relatively small amount of medium, and the lactic acid present can be easily adjusted and reduced if need be to a negligible quantity should the acid be found to lead to undesirable developments. We also examined a sample of trilactine milk, which is a beautifully clean preparation, having a pleasant delicate acid flavour free from bitterness.

### ATHERIUM (WHITE METAL ALLOY).
(PRITT BOWLEY AND CO., 46, FENCHURCH-STREET, LONDON, E.C.)

This is a very remarkable metal, and no doubt will find a wide application in the arts and sciences. Our interest in it is that it has been suggested that it might be suitable for the manufacture of surgical instruments. It has a silvery tone, but the most remarkable thing about it is that it is slightly lighter than aluminium, the specific gravity averaging about 2·5. This remarkable lightness, however, would count for nothing were it not that the alloy is remarkably durable, having a tensile strength of 18 66 tons to the square inch. It is difficult to bend with the fingers a piece of plate one-eighth of an inch thick. In the case of aluminium, of course, that is very readily done. We understand that the alloy makes good sound castings and works well in rolling and turning. Clean screw threads can be cut and it can be soldered, forged, and welded. It is susceptible to the action of acids and certain metallic salts, but resists the tarnishing or corrosion that occur, in the ordinary way. It appears, also, to defy the corrosive action of salt- or sea-water. There is a future for this alloy if its price can be brought within the requirements of practice. It contains for the most part aluminium which is no doubt alloyed with a substance possessing hardening properties.

### PYSHAN POINTS TEA.
(THOMAS CHRISTY AND CO., 4, OLD SWAN-LANE, LONDON, E.C.)

According to the experience gained in THE LANCET Laboratory there is no tea without tannin, the real point of importance being whether the tannin is combined with an equivalent of caffeine, which renders the tannin inactive. "Pyshan Points" tea on analysis proved to contain 12·40 per cent. of caffeine tannate, according to the analysis of a five minutes' infusion (1·25 per cent.). This tannate contained 3 10 parts of caffeine, and 9 30 parts of tannin; the total caffeine in the tea proved to be 3·10 per cent., and the total tannin 9·38 per cent. The caffeine and tannin are present, therefore, in the balanced proportion of 1 to 3, neither being present in the free state in which they may be harmful. The conclusion is that the tea is one of desirable quality from a physiological point of view. It is, further, an economical tea, inasmuch as it is rich in the active principles. We learn that this tea is produced from the leaf edges and young shoots of the plant, all coarse portions being rejected. The flavour of the tea, as might be expected, is agreeably smooth.

### SUPRARENALIN SOLUTION.
(ARMOUR AND CO., ATLANTIC HOUSE, HOLBORN VIADUCT, LONDON, E.C.)

The claims made in regard to the purity of this solution of the active principle of the suprarenal capsule are, according to the examination we made, correct. Suprarenalin solution is prepared from an ash-free active crystalline principle of the suprarenal substance. It is simply the active principle contained in normal saline solution, and is free from objectionable additions.

### STREPTOCOCCUS VACCINE RHEUMATIC FEVER (WELLCOME BRAND).
(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

This vaccine has been obtained from the so-called micrococcus rheumaticus, the presence of this organism having, it is said, been demonstrated in rheumatic lesions and in the blood of rheumatic patients. The vaccine is issued in hermetically sealed phials, containing in the one case 10,000,000 and in the other 50,000,000 organisms. The vaccine has been employed with advantage, it is stated, in persistent relapsing rheumatism.

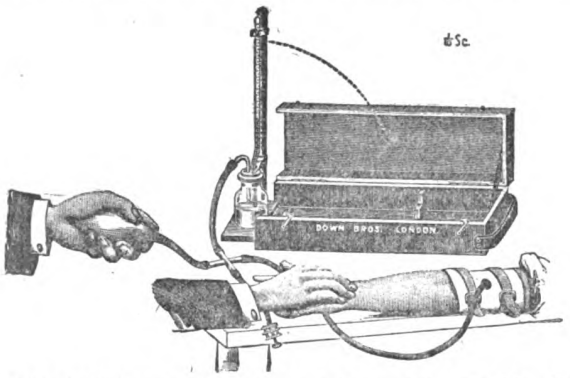
### SEA-WATER PLASMA.
(OPPENHEIMER, SON, AND CO., 179, QUEEN VICTORIA-STREET, LONDON, E.C.)

The supply of sea-water plasma for subcutaneous injections is now being undertaken by the above firm, who have made arrangements to collect at frequent intervals under special conditions the water from the deep North Sea. Precautions are taken in regard to the purity of the water in accordance with the directions laid down by Dr. Robert Simon in Paris. The sea-water plasma is supplied in aseptules of the capacity of 30, 50, and 100 cubic centimetres and in undiluted condition in sterilised bottles of 8 ounces capacity. The treatment appears to have a very favourable effect on nutrition and gives tone to the gastro-intestinal tract. The sea-water, of course, is sterile and isotonic with the blood.

# New Inventions.

## A NEW FORM OF SPHYGMOMANOMETER.

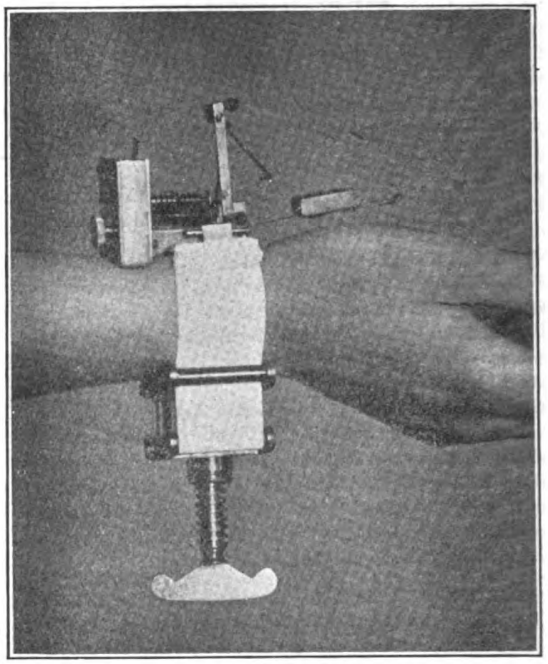
THIS instrument, which has been made at the suggestion of Dr. Herbert French, consists of a vertical mercury manometer connected, as shown in the diagram, with a four-way glass cannula, the other three limbs of which lead respectively to a rubber air-bellows, a broad rubber bag inclosed in canvas for encircling the arm, and a clip for letting out air when required. The principle is similar to that of various other sphygmomanometers devised for measuring the maximum systolic blood pressure. Most instruments of the kind, however, have the disadvantage that until fixed up they are not ready for immediate use, and that unless great care is used the mercury is very apt to become spilled. If the apparatus is carried to a consultation at a distance much time is taken up in packing it so that nothing will go wrong *en route*. In the instrument now described these disadvantages are obviated. The box into




which it fits has one of its narrow sides hinged. To this side the mercury bottle is fixed in such a way that the whole manometer can either stand vertically, as in the illustration, or else be rotated down in the direction indicated by the dotted line and arrow until it lies flat in the box. The length of the glass manometer tube and the amount of mercury in the bottle are so adjusted, that whereas the lower end of the tube is immersed in the mercury when the manometer is vertical the tube leaves the mercury some little time before it reaches the horizontal position. The result of this single adjustment is that the mercury cannot become upset whatever position the apparatus is in. It is something like the ordinary non-spillable ink bottle in this respect. The great advantage of this is that as soon as a reading has been taken the manometer and its attachments can be laid down flat in the box, and the latter can be carried in any position—even upside down—without spilling the mercury. Owing to the hinging of the mercury bottle to the main box no clamp is required to prevent its upsetting. It may also be mentioned that there is a contrivance for making the mercury in the manometer rise or fall smoothly when blood pressure is being measured without wide jumpings and oscillations. The main advantage claimed for Dr. French's sphygmomanometer is that, whilst giving direct readings in millimetres of mercury, it is so constructed as to be equal'y and instantly ready either for transit to a distance or for immediate use upon a patient. Messrs. Down Brothers, Limited, St. Thomas's-street, London, S.E., are the manufacturers.

## AN IMPROVED SPHYGMOGRAPH.

THAT the sphygmograph is somewhat neglected as an instrument of diagnosis and record is largely due to the ineffective and uncertain methods used for attaching it to the patient's wrist. The ordinary attachment may be a buckle, catch, or band, each of which may cause much annoyance to the investigator. The device illustrated occurred to me during a more than usually protracted struggle to get a satisfactory tracing from the soft pulse of a young subject. It consists of an ordinary screw tourniquet fitted with a penny dress band, each end of which projects about 3 inches, and ends in a skirt-clip. No strap is permanently attached to the sphygmograph itself, but when the artery has been felt with the finger in the ordinary way the instrument is put in position, the clips inserted into the holes where the straps are usually fastened, and the screw gradually tightened, when with surprising ease and certainty the lever begins to work. The most accurate gun may be useless unless mounted on a firm and finely adjustable carriage, and the sphygmograph is of greatly increased value and accuracy with firm band and screw adjustment which I have described. The device is strong, instantly attached and detached, and can be carried



without any case, and is already in the possession of many medical practitioners. In conjunction with a good sphygmometer the sphygmograph is of great service, especially in ascertaining whether the action of such drugs as the nitrites is being properly maintained.

Highbury, N. J. ALISON GLOVER, M.D. Cantab., D.P.H.

A WANDSWORTH MORTUARY.—At the conclusion of an inquest held at Wandsworth town hall on Feb. 3rd, Dr. Arthur Dumville Roe, the divisional surgeon of police, complained of the unsatisfactory heating of the local mortuary, in which he had had to conduct the necropsy. The coroner, Mr. John Troutbeck, said he had long thought this mortuary was most unsatisfactory. Considering that doctors had very important public duties to carry out there he thought their comfort ought to be more studied. The condition of this mortuary had long been a public scandal. It offered such a glaring contrast to all other mortuaries in London, for in them doctors could conduct investigations in comparative comfort. The remedy, he thought, lay with the borough council. The jury expressed their agreement with what had been said. The want of accommodation and the general discomfort of the mortuary at Wandsworth have been pointed out on many occasions. Proposals for a new mortuary have been before the borough council more than once, and it is said that a site has been secured. At a comparatively recent meeting of the council there was some question of a difficulty with regard to the settlement of boundaries between two coroners' districts, but it is to be hoped that this will not delay the provision of a more commodious and comfortable place for the performance of post-mortem examinations, and meanwhile it would seem that there ought to be no difficulties in the way of adequately warming the present building.

# THE LANCET.

*LONDON: SATURDAY, FEBRUARY 11, 1911.*


## The Encyclopædia Britannica and its Medical Public.

IT is impossible to withhold a tribute of admiration from the enterprise which has induced the authorities of the Cambridge University Press to undertake the production and issue of the new edition of the Encyclopædia Britannica, the first 14 volumes of which are now before us, even if we have to confess that our sympathy with the undertaking is not quite whole-hearted and that we do not altogether approve either the methods or the extent of the advertisements by which the new issue is being recommended to the public. It is no small achievement to have converted the Encyclopædia from a book which occupied a place of honour upon the shelves of its possessor, which might be looked at with some pardonable pride in its ownership, and which was sometimes referred to in an emergency, into one which, by reason of its more convenient form, may not only be read through from title-page to *finis*, but which appears calculated to furnish reading enough to last the average proprietor for his lifetime. An educated man has been described as one who knows something of everything, and everything of something; and the Encyclopædia is certainly well calculated to assist in the fulfilment of the first clause of the description. Its weakness, of course, lies in the inevitable combination, within the same covers, of knowledge which has passed into a condition of approximate stability with knowledge which is in a condition of perpetual flux, so that the work as a whole, after the lapse of a comparatively short period of time, must of necessity come to rival that historical egg which was pronounced by the curate to be "good in parts," and must also become a snare to the feet of the too confident smatterer who, under its guidance, rashly permits himself to be authoritative in the presence of those who know. It may be doubted, too, whether it does not contain on any subject at once too much information for the requirements of that mythical personage the general reader, and too little for those of the genuine student, so that, on the whole, it may perhaps be described, if we may borrow a line from VICTOR HUGO, as—

"Trop pour la concubine, et trop peu pour l'epouse."

As regards the special requirements of the medical profession, it may be said that the articles of the Encyclopædia contain an enormous amount of important and generally accurate information about the history of medicine and surgery and about the lives of their most distinguished followers, as well as about the courses of epidemics and the characters and causes of disease. That this information is not of a kind, generally speaking, to meet the requirements of the practitioner or to assist him in his daily work is not an objection with any point.. The Encyclopædia necessarily confines itself to broad outlines and to masses of people, while the practitioner chiefly requires to study details in their applications to individuals. A medical officer of health who was preparing a course of lectures on hygiene or sanitation for the instruction of the more intelligent dwellers in his district would find the Encyclopædia an inexhaustible mine of facts and illustrations adapted for his purpose, but for the uses of the practitioner whose locality was invaded by an epidemic it would prove itself of less practical value. It would be likely, nevertheless, to afford opportunities to the members of sanitary committees, or to the local clergy, or even to ladies Bountiful, of cross-examining the medical man with an appearance of knowledge; so that if mumps, for example, were to break out in Little Pedlington it would be quite prudent for the local practitioners to ascertain what the Encyclopædia had to say about that malady, and to be prepared to encounter any criticisms or recommendations which might be founded upon its article. In other respects it hardly appeals more to the medical profession than to any other educated section of the community, and its value as a treasury of knowledge must be estimated by considering how much of the contents of that treasury are likely to be made available by any intending purchaser, either for the gratification of his intellect or for the conduct of his life. The India paper and the flexible cover constitute an enormous advance on all previous editions of the work, adapting it, as they do for the first time, for actual perusal as well as for mere reference; but it is none the less manifest that perusal, to be of any advantage, must be sustained by real interest in the subject matter, and that this, by people in general, can only be either excited or maintained with reference to a limited number of topics. The reader who passes on from the article on CELLINI to that on CELSUS, merely because they are in juxtaposition in the same volume, is hardly likely to derive or to retain important information from either.

On the whole, we are much inclined to think that the class of literature represented by encyclopædias has almost fulfilled its function in the world, and that it is less and less likely to find favour in the future. There will always be room for the slightly expanded dictionary which furnishes detailed explanations of technicalities; and increasing value will be attached, it is reasonable to hope, to such works as the New Oxford Dictionary, and to the help which they afford in the direction of the proper use of words. But there is, we think, an increasing recognition that the great peril of democracy lies in the increasing influence of the smatterer, and that, at a time when the dominion of the world must clearly pass into the hands of those who submit themselves to the guidance of knowledge, the nations who are content with its semblance must of necessity lose their places in the contest. If we are wise we shall recognise in time that the dangers of our being surpassed in the struggle for commerce, or in the race for empire, are mainly dependent upon our neglect of knowledge. Germany for many years has been steadily organising a system of education which, if it does not impart knowledge, at least imparts a respect for it and a complete recognition of its importance, so that the comparatively

untaught are willing to submit themselves to the guidance of those who know; and the difference between the two nations in this respect, conspicuous as it is in many directions, is nowhere more conspicuous than in relation to medicine. The German working man, though the amount of quackery in Germany is extensive, is willing to admit that medical men know more than he about health and disease, and that actuaries know more than he about the possibilities of insurance, and the result is contented acquiescence in a national system of aid in sickness which is being continually improved under the guidance of experts. As yet too many an English working man has never been taught the value of knowledge, and hence thinks himself capable of arriving at a correct decision upon every question which may be submitted to him, while he is systematically encouraged in this belief by those politicians who seek to rise to power wholly by his support. As long as it is a paying policy to flatter the ignorant, and to submit problems which they cannot understand to their decision, so long will there be a manifest temptation to other countries to challenge an imperial or a commercial supremacy which they have long envied, and which we seem no longer solicitous to retain. The spread of knowledge is what is wanted, and the publication of encyclopædias is designed to meet the want. Admittedly one of the dangers of encyclopædias is that they have some tendency to extend the glorification of the smatterer among the partially educated classes, and to induce forgetfulness of the fact that to know something about everything is a definite source of intellectual weakness, unless it be balanced by the complete fulfilment of the other clause of the description. On the other hand, good encyclopædias rightly used are still valuable national possessions. As the accumulations of exact information become unmanageably large the day of encyclopædias may be threatened by dictionaries of special reference, bibliographies, and so on—we think this position has been reached; but for the present we need encyclopædias.

## The Operative Treatment of Cancer of the Rectum.

RECENT conferences on important subjects at the Royal Society of Medicine have proved of great value, for they have shown more clearly than was possible in any other way the diversity of opinion which may exist on the principles of procedure even amongst those who have devoted special attention to a particular branch. In January of this year at two meetings of the Surgical Section there took place on the subject of malignant disease of the rectum and its surgical treatment a discussion which was fully reported in our columns.[1] Operations on the rectum for the removal of cancerous growths have now been practised for many years, but each succeeding decade has seen a marked increase in the extent and complexity of the operations performed and an improvement in the statistical results. Cancer of the rectum, like cancer elsewhere, usually requires an extensive operation for its removal, and at first the tendency was always to limit the operation too much to the neighbourhood of the obvious growth, with the result that secondary appearances of the disease and recurrence of the growth locally frequently occur. At first all attempts made to remove malignant disease of the rectum were practised from the perineum, various tactics being adopted for enlarging the opening by which the growth might be reached. This perineal method was only applicable to tumours situated low down in the bowel, and in many cases, even when a tumour could be readily reached from the anus, the recurrence of the disease locally proved that the amount of bowel excised had not been sufficient. If there was one point more than another brought out by the recent discussion it was the fact that the recurrences of malignant disease of the rectum are frequently long delayed. Not long ago a limit of three years was supposed to prove the sufficiency of the excision, and when those three years had passed the patient and the surgeon congratulated themselves on the success of the operation; but it is now well recognised that recurrence is not at all rare after three years, and even ten years after the operation a return of the disease has been seen. The fact that this late recurrence is purely local in the majority of cases shows clearly that the local operation has been too restricted.

Not long after the operation by the perineal method had become fairly frequent more ambitious procedures suggested themselves. In cases where the growth had been above the reach of the finger from the perineum no radical measures had been undertaken, but the surgeon usually was satisfied with performing a colostomy. In 1885 KRASKE introduced his method of trans-sacral proctectomy, which undoubtedly allowed the surgeon to operate on many cases which are not amenable to the perineal operation. The mortality, which is still ominous, and the numerous modifications of the original operation, show that it has not yet reached an ideal form. Several speakers at the recent discussion spoke highly of this route and stated that they practised it by preference. Undoubtedly it has many great advantages, it gives the surgeon full control over the whole of the true rectum, but it is hardly applicable to a growth involving the pelvic colon. The removal of a rectal growth by an abdominal incision antedated KRASKE'S trans-sacral method by two years, for in 1883 CZERNY made an abdominal incision for the purpose of completing the removal of a rectal tumour which extended too high for the perineal method. Various modifications of the abdominal operation have been practised. It is sometimes performed with, and sometimes without, a perineal incision. Occasionally it is possible after removal of the growth to bring the sigmoid flexure down to the anus while preserving that sphincter. This is an ideal operation so far as the result is concerned in successful cases, but the cases which are truly suited for it are few in number and the mortality is high; yet it found advocates amongst the speakers at the Royal Society of Medicine, and it is possible that in the future means may be found for reducing the death-rate from it. In most cases when the abdominal route is adopted all that can be done is to leave an abdominal anus, and the discomfort from this cause is generally less under modern

[1] THE LANCET, Jan. 14th (p. 100) and 28th (p 230), 1911.

methods than used to be the case, and it is at least debatable which is the more convenient site for an artificial anus—the sacral region or the abdomen.

Another point in regard to which divers opinions were expressed was the desirability of performing a preliminary colostomy before proceeding to the excision of the growth. Undoubtedly in favour of a preliminary colostomy are the comparative freedom from sepsis which it ensures, the more speedy healing of the wound, and the greater comfort to the patient. On the other hand, a colostomy opening entails an anchoring of the sigmoid in the inguinal region, and this is disadvantageous if an attempt is to be made to bring down the upper portion of the bowel to the anal opening. The experience of all those who have been accustomed to practise a preliminary colostomy will be in agreement as to its great value and its simplification of nearly all operations for the removal of a growth of the rectum, and, moreover, the incision of the abdominal wall necessary for the formation of a colostomy enables the surgeon to examine the glands of the mesocolon and the liver itself, so as to know whether secondary infection has occurred—for it needs no saying that, if extensive involvement of the mesocolic glands or any infection of the liver is present, an operation for excision of the malignant growth will be contra-indicated. On the whole, the majority of surgeons will agree that a colostomy performed in advance of any operation for the removal of the growth of the rectum is of value. It is clear that, if the surgeon, after excision of a rectal growth by the abdominal route, does not intend to reconstitute the continuity of the bowel but designs to make an abdominal anus, a preliminary colostomy is uncalled for.

There was unanimity amongst the speakers as to the undesirability of attempting the removal of rectal growths which have extended too far; so long as the growth is confined to the rectum the possibility of removing it completely is great, but if it has spread elsewhere no operation for removal is likely to prove of permanent value. In the very old, too, a radical operation is undesirable, and in all these cases the value of a palliative colostomy was acknowledged by several speakers. When the irritation of the fæces is prevented the progress of the growth is often extremely slow and several years of fair comfort may be enjoyed. Some twelve surgeons took part in the discussion, and their names include most of those London surgeons who have specially worked at diseases of the rectum, and therefore we are justified in accepting the opinions expressed at these meetings as indicative of modern opinion in London. Practically all agree that the perineal route is hardly ever to be employed; most condemned it utterly. Opinions were divided on the question of the value of the trans-sacral operation. Some preferred it in nearly all cases, while others believed the abdominal route to be the better. All would assent to the statement that, if the sigmoid could be brought down to the anus, with the preservation of that sphincter, after complete and adequate removal of the malignant growth, the result would be ideal, provided that the mortality could be kept low; but most of the speakers doubted the possibility of combining this method of operation with sufficient removal of infective tissues, while to others the main obstacle appeared to be the heavy mortality with which it was accompanied. So for the present the matter must be left, but we are inclined to think that in a not far distant future some modifications of operative procedures will result in a greater unanimity in the choice of the site of operation. In the meanwhile we congratulate the Surgical Section of the Royal Society of Medicine on this interesting and valuable discussion of an important question.

## Health and the Hotel Interest Abroad.

THERE is a warfare which is not military, preceded by no diplomatic overtures or formal declaration of hostilities, resulting in no death-roll or list of wounded, in no exchange of prisoners or cession of territory, mitigated on the field of battle by no Geneva Convention—a warfare, however, none the less real, embittered, and relentless because, from inability of the opposing champions to meet in physical combat, it stops short of personal violence. Its seat is the southern region of Europe, principally where this abuts on the Mediterranean, its scenes of hottest action "winter cities" or "sun traps" frequented by the foreign or paying guest, and the belligerents the hotels and their management, French or Swiss on the one part and Italian on the other. The warfare thus waged is at its height in the so-called tourist season—that is, from the late autumn to the advanced spring—and the "weapons of precision" (rather less than more precise) in favour with the combatants, are those of reciprocal misrepresentation and disparagement, striking at nothing which can discredit the opponent or deflect from him the custom so dear to both.

The season now well on its way has witnessed an unusually keen succession of such encounters, and the advantage, strategic and other, has hitherto been on the side of the French and Swiss, as against the Italian belligerent. This latter from the late autumn has been fighting under every conceivable difficulty, of which its antagonists have been all too prompt to avail themselves, and the tide of battle has driven it, baffled and dispirited, well-nigh to its last entrenchment. The cholera scare, hardly overcome in October last, continued an effective weapon against it till well on into the winter, and even now has still strength enough to keep the Sicilian and Neapolitan hotels all but empty. Though never approaching the epidemic stage, and numbering its victims only among the poorest of the proletariat and of these but a very few, the "Asiatic invader" was credited with a diffusion and a virulence that sufficed to keep the northern world at bay or to confine it to the Swiss slopes of the watershed and the French Riviera. The hotels in that region throve abundantly on the well-maintained fiction, some of them boldly inscribing on their *menus* at *table d'hôte* a warning against any sojourn, however short, in Italy as fraught with danger to invalid and robust alike. Now that the cholera has ceased to play the deterrent, other weapons from the sanitary *armamentarium* have been pressed into the service; and after an ominous hint as to small-pox, with a side-glance at the dangers from earthquake, perennial

as these are held to be in Italy, the influenza is, in the day now passing, brought within range, and, truth to tell, has been doing effective execution against Italian interests, particularly in Rome and Florence. The last scene of an attempted scare in the transalpine cause is that great *entrepôt* of tourist traffic Milan, insomuch that a counter demonstration has had to be issued by its "Ufficio Municipale d'Igiene" setting forth the exceptionally sound conditions of the public health both in city and suburb. The Regio Commissario has published statistics showing the absolute immunity of the Lombard capital, not only from cholera, but from all epidemic disease of an infective type, and its leading journals, in giving voice to his conclusions, comment with well-warranted indignation on the fictions put in circulation, to the prejudice of the city, by interested parties. The Regio Commissario, the Commendatore GALLOTTI, remarks on the difficulty of antagonising such malicious reports, propagated by agencies other than journalistic, against the fair fame of a great centre conspicuous for the intelligence, the energy, and the efficient service of its board of hygiene. Milan, it is true, has special reason to complain that its sanitary record has not always a counterpart in its sister centres, and that the inefficiency of other hygienic offices plays into the hands of the critic, none too scrupulous in discriminating between one Italian city and another. It has to suffer, in other words, for the shortcomings revealed in Sicilian and Neapolitan health resorts, creating, if not justifying, as these do, a sinister impression as to the general sanitation of the kingdom.

There are two Italies, as the statistics of the last few years have put in evidence—the Italy of the north, intelligent, enterprising, and eager to fall into line with contemporary progress; and the Italy of the southern mainland and the islands, where the proportion of the *analfabeti* is some 70 per cent., and where all the administration, hygienic and other, is on a similar plane. Surprise visits in those regions on the part of the KING, impartial reports by leading clinicians and consultants deputed *ad hoc*, have revealed a state of backwardness not only discreditable to the local authorities but providing an all too welcome handle to the detractor whose business it is to deter the invalid, the valetudinarian, and the sun-seeking visitor from Italian resorts. It is in this direction that Italy has to set her house in order, stimulated as she ought to be by the promotion of the grave interests she has at stake and by the conviction, now dawning upon her, that to cope on equal terms with her rivals on the Riviera and across the Alps she must disarm the power to criticise her and make all warfare of calumny effective against none but those by whom it is malignantly waged.

ROYAL INSTITUTION.—A general monthly meeting of the members of the Royal Institution was held on Feb. 6th, the Duke of Northumberland, the President, being in the chair. Among the newly elected members were Dr. W. S. Colman, Dr. A. H. Levy, and Dr. N. Raw. The special thanks of the members were returned to Dr. J. Y. Buchanan for his donation of £100 to the fund for the promotion of experimental research at low temperatures.

# Annotations.

**"Ne quid nimis."**

## LIBRARIES AND LIBRARIANS.

IN the winter time our thoughts seem naturally to turn to libraries, not only for instruction, but also for recreation and consolation. There can be little doubt that winter darkness and winter weather have an influence on book reading, and that books offer us literally *lucem in tenebris*. It is on record that in 596 A.D. St. Augustine brought nine volumes into England, which formed the nucleus of the first English library. Since that time we owe much to the monasteries for preserving valuable books and papers. Now, however, as Mr. Victor G. Plarr, the librarian of the Royal College of Surgeons of England, reminds us, in an interesting paper read before the Medical Library Association last year, and published in the *Dublin Journal of Medical Science* for November last, their place is occupied by *M. le Bibliothécaire*, the curator of the library. *Monsieur* is a worker in the hinterland of literature, whose work none the less shall endure and blaze the trail and prepare the way for the literary immigrants of the future, if conscientiously done; and no librarian can be a true *bibliothécaire* without being conscientious. His task it is to excavate the covered plains of literature and to display their hidden treasures with critical acumen, so grouped and classified as to be convenient of study from whatever point of view the student may approach a given subject. Mr. Plarr rightly points out that "the making of a title is, indeed, a small art of itself. ..... A book title should, of course, have no dubious element about it, but should be absolutely definite." Yet of many books it may truly be said that their titles are given them to conceal their contents. Whence, as Mr. Plarr points out, *M. le Bibliothécaire* must possess many sterling qualities—method, industry, and sound judgment; he should be a sound logician, something of a grammarian, a rhetorician, and a geographer, as well as a polyglot linguist, and particularly a Latinist, a man acquainted with the movements of science, a man of letters, a man of the world, perhaps a traveller, and of necessity a wide reader. But since he has to deal not only with books but also with people, he must be urbane and merciful to the ignorant, able to conceal his amusement at the naïveté of many who consult him, and superior to the weakness of making less instructed persons "feel small." The need of these qualities Mr. Plarr emphasises by instance and reminiscence. For example, he himself was once tested by being asked by a certain eminent librarian to classify at sight a work entitled "De Cornutis." It seemed catchy and incomprehensible, and he perspiringly replied, "'De Cornutis, concerning horned beasts." To which the eminent librarian very grimly replied: "Yes, they are horned beasts." In the jargon of the ancient satirists, then a *terra incognita* to the youthful librarian, *cornuti* are cuckolds. Mr. Plarr adds: "I question if many would pick up this piece of information at any time during their earthly pilgrimage." Yet readers of Shakespeare who are to be found in circles quite outside of professional scholars will surely recall the poet's references to "horns," when he speaks of a "horn-maker," meaning a maker of cuckolds, alluding to the imaginary antlers or projections on the temples of the cuckold. Mr. Plarr bewails the fact that a catalogue in the long run "tends to become a queer, rather pathetic amalgam of old ideas and modes of thought." Nosology is in a constant state of flux, and terms survive in

nomenclature after the conception that prompted them is exploded, or swallowed up in a more comprehensive grasp of the subject. What is most wanted in a classified catalogue is elasticity, a means of grouping correlated books in close proximity, with a mode of cataloguing them that shall be independent of changes in nomenclature. This is the aim of the decimal numerical system of classification so extensively used in America and on the Continent of Europe, and we should like to know Mr. Plarr's views on the point. With regard to the card system of indexing Mr. Plarr makes the very practical suggestion that when an "author card" involves many subject cards as cross references a complete list of these subject cards should appear on the back of the author card, so that in case the book is for any reason withdrawn all the references to it can be withdrawn also. Those who have done much card indexing will entirely endorse the statement of the author, that "sometimes one is in a more meticulous mood than at others," and prone unduly to multiply subject headings or to write out titles more at length than usual.

## THE WEATHER OF JANUARY.

AFTER adding about 12 more wet days to the long period of rain that began with November, January became very dry in almost all parts of England and Scotland, while the weather improved considerably in Ireland also. A large portion of England had no rain or, at the most, a very slight fall on one or two occasions, after the 10th or 11th, and as the amounts measured before those dates were not generally large, in spite of the frequent falls, the aggregate quantity for the month was much less than the January average. In several districts of England there was less than an inch, or not as much as 50 per cent. of the average, and a similar shortage was recorded in some Scottish districts and in the south-west of Ireland. In London (Westminster) and also at the Kew Observatory the total amount was less than 1·2 inches, or 65 per cent. of the normal, and except on the 22nd, every day after the 12th was rainless. Although so many days were rainless, however, the sky was so often charged with dense cloud that the records of sunshine were not particularly large over the kingdom as a whole. A few spots, mostly in the south, were fortunate enough to see the sun for an appreciable number of hours longer than usual during the chief month of winter, but generally the divergence from the average was not great, and it was not everywhere on the right side. In Central London, as represented by Westminster, there were 21 hours against an average of 19 hours, and in the City, at Bunhill-row, there were no more than 11 hours, a deficit of four hours. The suburbs, as is invariably the case in winter, and generally at all seasons of the year, were much more sunny. At Kew Observatory the sun shone for 49 hours, or five hours more than the average, while at Hampstead the record was as high as 59 hours. Greenwich caught 14 more hours than Westminster, but its total of 35 hours was six hours short of the normal. Along the south coast of England the figure was agreeably higher, 70 hours being rather the rule than the exception, and some resorts recording about 80 hours. The temperature of the month, considered as a whole, was not very different from the normal, and a normal January in this country cannot properly be regarded as cold. Frost was seldom recorded by the thermometer in the screen, and many nights passed without frost being registered even by the instruments exposed on the grass. There was only one brief touch of real winter, occurring about the middle of the month, when the screened thermometers in the eastern districts of England descended to below 25°, and the maximum readings of the day were not far removed from the freezing point. In London (St. James's Park) the screened thermometer fell to below 32° on no more than five nights, the lowest figure being 26° on the last night of the month, but at Kew Observatory there were eight nights with more or less frost, the lowest value being 22° on the 16th, and at Hampstead the number of frosts was as many as 11, and like Kew, the lowest reading in the screen was 22°. This reading was recorded, however, on the last night, not on the same date as that at Kew. At the Scilly Islands no frost was registered except by the grass thermometers, and hardly any occurred in the Channel Islands and on the extreme south-west coasts of England and Ireland. Over the kingdom generally the month owed its comparatively high temperature rather to the mildness of the nights than to the warmth of the days. Maximum readings of 50° and above were rare, and on several afternoons the thermometer failed to rise above the normal, and on some remained below it. In St. James's Park a maximum of 50° or a trifle higher was recorded on four days, but on five days there was no reading so high as 40°. The climatic conditions on the Riviera were generally very fine and sunny, although on a few occasions the wind was both cold and rough. As a rule the shade warmth of the afternoons was about 50°, or between 50° and 55°, but on a small percentage of the days the thermometer stopped its upward march before reaching 50°. Round about the 20th the weather was that of genial spring for a time, the shade temperature rising to between 60° and 64°. The nights were not cold for January, although frost was often recorded on the ground, and occasionally in the screen. Italy was colder as well as less sunny, and experienced more rain. The month as a whole, however, was by no means unfavourable for visitors from the colder countries, and in the extreme south of the kingdom, and also in the adjacent islands of Sicily and Malta, the temperature was fairly high. At Biarritz the conditions were more variable. A few days occasionally were bright and warm, and some were mild without the brightness, but the weather generally was cold and unsettled. Frost was frequently recorded, and many of the afternoons were colder than in the south and south-west of these islands. There was, however, little rain after the first fortnight. In Switzerland and throughout nearly the whole of Central Europe the weather was generally very suitable for the winter sports. A fresh layer of snow usually accompanied the few occasions when the thermometer left its frosty winter level, but during the greater part of the month the weather was very cold and dry and often extremely bright. In Bavaria the frost was very intense at times, the sheltered thermometer falling to close upon zero Fahrenheit, and remaining much below 32° throughout the day.

## THE TREATMENT OF SLEEPING SICKNESS.

DURING the three years from June, 1907, to June, 1910, 776 cases of sleeping sickness were treated in two camps in German East Africa at Kigarama and Kishanye. The results are stated by Staff-Surgeon Ullrich in a paper that appeared in January in the *Archiv für Schiffs- und Tropen-Hygiene*.[1] In 650 of these 776 (84 per cent.) diagnosis was confirmed by the finding of the trypanosomes. During the three years 25 per cent. of the cases advanced towards recovery, but as Staff-Surgeon Ullrich does not consider any case cured unless for two years free from trypanosomes, it will surprise and discourage no one that in three years only one person was discharged cured. Another was, however, just on the point of discharge. Cases are divided into three classes: the first make no complaint of illness but have enlarged glands and trypanosomes in the blood; the second

[1] Band xv., Heft 2, p. 41.

class are more advanced and know they are ill; the third are wasting and manifest nervous changes and alterations in gait. Prognosis, according to the report, is hopeful in the first stage; recovery may possibly occur in the second, and has even in the third stage been reported. In December, 1908, 406 cases in good general health and free from trypanosomes were taken off all treatment. Their blood was examined at intervals, and if trypanosomes reappeared treatment was resumed. One and a half years later, at the end of the period, 47 still remained free; 46 of them had shown trypanosomes when admitted. As to treatment, atoxyl has been most used and seems most trusted. Arsacetin is not considered safer or better, nor does arseno-phenylglycin receive more praise, as its toxic phenomena (skin eruptions, wasting, paralyses) are prominent. Arsenic was used but severely disturbed digestion. Antimony had no effect on the trypanosomes. Mercury did not assist the action of atoxyl whether given by injection or inunction. Atoxyl was given by injection every fortnight for five or six months, and was then intermitted for three months, to avoid the damage to the eye which may follow the use of all these organic arsenic compounds. The first evidence in the cases under notice of such damage was a peripheral contraction of the field of vision. As atoxyl was used for all these cases at first, it could not be decided whether damage to the eye during the administration of arsacetin and arsenophenylglycin was due to these drugs themselves or to the preceding atoxyl. Cases that have once lost their trypanosomes and relapse have a most unsatisfactory prognosis, and are not saved by increasing the previously effective doses.

## THE DANGERS OF PARTURITION IN ELDERLY PRIMIPARÆ.

THE question as to whether an elderly primipara incurs any extra danger in childbed on account of her age is one which has been much debated by obstetric writers from the very earliest times. It has recently been submitted for our consideration by a medical correspondent. It would seem only natural that the greater rigidity of the soft parts which is supposed to exist in the older woman, and the partial ankylosis of the coccyx which may also be present, undoubtedly would increase the difficulty and the duration of the labour. Among the older writers—for example, Puzos, Smellie, Deventer, and Mauriceau—this view of the matter was generally accepted, and it was regarded as a true explanation of the assumed increased difficulty of parturition in women beyond their first youth until it was challenged by Madame Lachapelle. Her clinical experience did not tally with the current teaching on this matter, and as she pointed out, while it was quite true that difficult and prolonged labours occurred not infrequently in elderly women, she did not think that they occurred relatively more frequently in them than in women of a younger age. Her view of the matter found support from Cazeaux and Depaul; but, on the other hand, it was opposed as incorrect by Dubois, Wigand, Michaelis, and Naegele. In an endeavour to settle the question an appeal was made to statistics, and papers were published by various writers in favour of one or other side of the question. The figures collected by Cohnstein and Ahlfeld, and quoted by Varnier, seemed to show that not only was labour in elderly primiparæ attended with increased danger to the mothers and the children, but the duration of the labour was increased considerably and the frequency of bad tears of the soft parts was much greater. The supporters of Madame Lachapelle's view pointed out, however, that these conclusions did not settle the matter, since the investigators had not taken sufficient care to compare precisely similar facts, and in a considerable number of their cases there was either a contracted pelvis present or the labour was a complicated one. But statistics collected with greater care, so as to eliminate such errors, tended to confirm the views of those who maintained that with an increase of age is associated an increase of danger, and there seems no doubt that such a conclusion represents the truth of the matter. On the suggestion of the late Professor Varnier, his pupil Dubé carried out an investigation on the subject, taking care to include in his tables only cases of perfectly normal labour. His figures show that while in the great majority of the labours there is no difference in the average duration at all at the various ages, yet in the small minority of the cases in which labour is unduly prolonged the number of elderly primiparæ exceeds that of young primiparæ by some 10 per cent.; and the prolongation of the labour affects both the first and the second stage. If the frequency with which the labours required artificial termination with the forceps is considered, there is a more striking difference. Thus, while among the young primiparæ the forceps rate was only 1·6 per cent., it rose to no less than 25 per cent. among the elderly primiparæ. These figures are the more instructive since in every other respect the labours were normal, the children were of average size, and there was no evidence of any undue rigidity of the bony outlet of the pelvis. The explanation, therefore, of the increased length of the labours in the minority would seem to lie partly in some extra rigidity of the soft parts and partly in some failure of the contractile power of the uterine muscle possibly associated, as Varnier suggested, with the presence of minute fibroid nodules in the uterine walls not recognisable by ordinary palpation. Not only is there then in a small percentage of elderly primiparæ a somewhat excessive prolongation of labour and an increased need for delivery by forceps, but this is associated with a definite increase in the fœtal mortality, since in Dubé's cases it amounted to 5 per cent. in the elderly primiparæ as contrasted with a fœtal mortality of only 1·32 per cent. among the young primiparæ.

## THE SALE OF POISONS.

THE annual report of the Registrar under the Pharmacy Acts, which was received and adopted at the February meeting of the council of the Pharmaceutical Society, contains some interesting details of the work done in 1910 in connexion with the administration of the penal provisions of the law relating to the sale of poisons. During the year 1836 cases of alleged infringement of the Acts were investigated and legal proceedings were instituted in 273 cases. Compared with previous years the work of the law department was exceptionally heavy; in 1909 the number of cases investigated was 1360 and the number of cases in which proceedings were instituted was 155, while in 1908 the number of alleged infringements which were made the subject of inquiry was less than one-fourth the number investigated in 1910. The heavy increase in the work accomplished by the department is to a large extent due to the fact that a new class of poison sellers was created by the operation of the Poisons and Pharmacy Act, 1908, by which local authorities were empowered to grant licences to unqualified shopkeepers to sell poisonous insecticides, weed killers, sheep dips, and other preparations of a like nature. This extension of the sources of distribution of poisonous compounds naturally increases the danger which is always attendant on the traffic in toxic substances, the more especially as these new poison sellers are drawn from a class of retail traders whose training has not impressed upon them the necessity of scrupulously complying with such formalities as it is proper to observe when selling poisons. For instance, some of

the cases which have been investigated reveal the fact that seedsmen and others in selling compounds containing nicotine have neglected to label the bottles with their names and addresses. The number of seedsmen and ironmongers against whom proceedings were instituted on account of various irregularities last year was 71, while in 39 other cases the offences were alleged against assistants to seedsmen. The newly created poison sellers, however, are by no means the only offenders, for the list of cases shows that in 78 cases proceedings were instituted against drug-store proprietors, and in 31 cases penalties were claimed from registered pharmacists or their unqualified assistants. In three instances the defendants were unqualified assistants to medical practitioners, and in all three cases the offence alleged to have been committed was the sale of poison. In one instance the summons was dismissed, but in the other two cases, which were heard in Glasgow, convictions were obtained. Some interesting figures are also contained in that part of the report which deals with the Register and the examination. Last year the number of candidates for the qualifying examination was 1037, of whom 407 were successful, the percentage of failures being rather lower than usual. The number of names on the Register is 16,292, an increase of 36 on the previous Register.

## HÆMOLYTIC JAUNDICE IN SECONDARY SYPHILIS.

FROM time to time cases have been recorded of jaundice in secondary syphilis. The jaundice has been regarded as a rare complication of the disease without considering the question whether it was mere coincidence and due to some intestinal disturbance. For a more minute investigation of the subject we are indebted to French observers, as, indeed, we are for a more accurate knowledge of the pathology of jaundice in general. At a meeting of the Société Médicale des Hôpitaux of Paris on Dec. 2nd M. de Beurmann, M. Bith, and M. Cain reported a case of hæmolytic jaundice in secondary syphilis. They pointed out that ordinary catarrhal jaundice must have often occurred in secondary syphilis as the result of digestive troubles caused by the disease or its treatment. This would present the usual characters of obstructive jaundice. In the case now reported, on the contrary, the jaundice had all the characters of hæmolytic acholuric icterus. It was due to an alteration in the red blood corpuscles. Two similar cases have been previously reported by Professor Gaucher and M. Giroux, and these hæmolytic characters seem to show the causal connexion between the jaundice and the syphilis. A girl, aged 19 years, was admitted into the Saint Louis Hospital with jaundice and a syphilitic roseola on Nov. 2nd, 1910. There was no trace of a primary lesion, but characteristic inguinal and submaxillary adenopathy was present. On the neck were papulo-squamous lesions. Jaundice appeared three weeks before admission, and the roseola a week later. No gastro-intestinal trouble preceded the jaundice, and there was no family history of jaundice. On admission there was marked jaundice of the skin and mucous membranes, but the urine was not darkened and did not give the reaction for biliary pigment, and the stools were not decolourised. The liver was not enlarged. The spleen was not palpable, but was so much enlarged that the splenic dulness measured 4½ inches in the axillary line and 3 inches transversely. An intramuscular injection of a third of a grain of biniodide of mercury was given daily from Nov. 6th. On the 10th the jaundice was much diminished, and the roseola was decidedly paler, but the size of the spleen had not diminished. On the 18th the jaundice and the roseola had almost disappeared, and the splenic dulness was reduced to 2¼ inches in the axillary line and 1½ inches transversely. On the 25th there remained only icterus of the conjunctivæ, and the spleen was no longer perceptible to percussion. There were some vulvar and anal mucous patches, which disappeared three days later after cauterisation with silver nitrate. On Nov. 4th blood was withdrawn from a vein for examination. It coagulated normally, but the serum was of a deep yellow colour, the presence of bile pigments was proved by Gmelin's reaction, and there were also traces of urobilin. The red corpuscles numbered 3,570,000 and the white 30,000, and the hæmoglobin was 90 per cent. A differential count showed 74 per cent. of polynuclear neutrophiles, 6 per cent. of polynuclear eosinophiles, 2 per cent. of large mononuclears, and 18 per cent. of medium mononuclears and lymphocytes. There were about 10 to 15 per cent. of granular red corpuscles, of which some were polychromatophile. The resistance of the red corpuscles to hæmolysis (*résistance globulaire*) when separated from the plasma and placed in normal saline solution was found to be subnormal. On Nov. 26th the number of red corpuscles had risen to 4,500,000, the "globular resistance" was normal, there were few granular red corpuscles, none of which were polychromatophile, and the serum was only faintly tinged with bile. The case corresponded in every particular to the hæmolytic jaundice studied by Chauffard, Widal, and their pupils. There was acholuric icterus without alteration in the urine or fæces, but with biliary pigment in the serum. The slight anæmia, diminished "globular resistance," granular red corpuscles, and splenomegaly completed the picture. Obstructive jaundice was thus excluded. This form of jaundice (with bile in the urine and decolouration of the fæces) has been described in secondary syphilis by Gubler, who attributed it to "roseola of the biliary passages." In the present case the jaundice appeared with the secondary eruption and also yielded with it to the mercurial treatment, as did also the splenomegaly. It is noteworthy that there were no hepatic symptoms and that the liver appeared to play no part in the production of the jaundice. This case is similar to those described by Gaucher and Giroux referred to above. In them there was also slight anæmia, the red corpuscles numbering respectively 3,800,000 and 3,400,000.

## A SIMPLE METHOD OF VIEWING SKIAGRAMS STEREOSCOPICALLY.

IN the *New York Medical Journal* of Jan. 14th Dr. M. Girsdansky has described a simple method of viewing skiagrams stereoscopically. Assuming that the object is of such size as to be capable of being skiagraphed twice on the same plate he places it over one half of the plate and protects the other half with a sheet of lead and takes a skiagram. He then reverses the procedure, placing the lead over the already exposed part and the object over the unexposed part, carefully maintaining a position as symmetrical as possible to the source of the rays and the object's former position. When the plate is developed it shows a picture which resembles one taken with a stereoscopic camera, but it differs from the latter in that opposite the right eye is the picture which would be seen with the left eye in the stereoscope and opposite the left eye is the picture which would be seen with the right. The skiagram is placed at a convenient distance from the eye and a fenestrated cardboard with an aperture in the centre about equal in size to one of the pictures is interposed at such a distance and in such a position that the right picture is entirely and solely visible to the left eye, and the left picture similarly visible to the right eye. If both eyes are focussed upon the cardboard the skiagram appears at the window as an image in three dimensions. Some difficulty may be experienced in focussing the eyes on the empty window. This may be overcome by fastening one or more microscopic slides to the

window by means of adhesive plaster, so as to completely or partially cover it. The glass acts as a "target" on which the eyes can be focussed with greater ease than upon the empty window, but after a little practice the glass can be discarded. This method has several advantages. It is much simpler than the ordinary method of X ray stereoscopy by means of two mirrors at right angles to one another. Skiagrams printed in books or journals can be viewed without removing the pages—i.e., without mutilating the book or journal. Skiagrams prepared by this method can be thrown upon a screen, and no matter how many times enlarged can still be viewed in three dimensions. It is noteworthy that the stereoscopic image appears smaller than each of the skiagrams which compose it. Obviously the reason is that while the image appears to be situated at the window where the axes of vision converge, the retinal images are formed by the more distant skiagrams. These images are therefore smaller than if the skiagrams were at the distance of the window and the object appears to be proportionally smaller.

## RESEARCHES ON THE CENTRAL NERVOUS SYSTEM OF INFANTS BORN OF DISEASED PARENTS.

HEREDITY and its problems are more than ever *à l'ordre du jour*. On all sides the attack is being pushed home with ardour by the statistician, the Mendelian, and the pathologist. There is a growing feeling that in the matter of heredity hypotheses have been vaunted just a little at the expense of facts, and while the serviceableness of the former need never be deprecated a wide observation and collation of mere facts is urgently called for. No word is more familiar, or more useful let us say, in the study of heredity than "predisposition," yet it is a current conception whose basis on accepted facts is partly conjectural. To express "predisposition" in organic terms is the laudable aim of Dr. Catola, of Professor Tanzi's Nervous and Mental Clinic in Florence, whose article will be found in the *Revue de Médecine* for September of last year. Dr. Catola's method is to examine the central nervous system of infants born of parents suffering from some disease, and to determine in what way, if any, it may show a departure from the normal. He is content to record facts, for deductions, in view of the paucity of the former, would be premature. A great deal of work has already been done on the retarding effect of different maternal toxi-infections on the development of the fœtus, and on the causal relation between given intoxications and diseases in the parent or parents and the appearance in their children of a whole series of morbid conditions, such as epilepsy, hysteria, deaf-mutism, idiocy, &c., or of more or less marked teratological changes. But it is desirable to examine minutely the nervous systems of infants dying at birth or soon after born of mothers affected with some disease of a chronic nature, to discover whether any pathological changes can even at that early stage be recognised. Even admitting that present histological technique is not perfected and that the complexity of the factors involved renders interpretation of any alterations supremely difficult, Dr. Catola is perhaps right in his contention that by attacking the problem of hereditary, familial, and congenital diseases along these lines we may begin slowly to establish a basis of ascertained facts to serve to illustrate the meaning of "predisposition." In this first communication he has occupied himself solely with cases of infants dying at birth whose mothers have been suffering from chronic disease; the spinal cord only, however, has been subjected to investigation. His results may be summarised as follows: 1. Mother suffering from severe Bright's disease: premature birth at 6½ months. Central canal of spinal cord of infant not closed below the lumbar enlargement. 2. Mother syphilitic: premature birth at 8 months. An immense number of granular fatty pseudo-cells (masses of cell-like fatty débris staining with osmic acid) especially in the posterior columns. 3. Mother tuberculous: premature birth at 7½ months. Complete absence of myelinisation in the direct pyramidal tracts (normally myelinated at the sixth month of intra-uterine life). 4. Mother syphilitic: full-time child. Masses of fatty granular cell-like bodies in the middle of the crossed pyramidal tracts (Bechterew's *faisceau intermédiaire*). 5. Mother syphilitic: premature birth at 7½ months; liver full of spirochætæ. Fatty degeneration of intraspinal anterior roots; myelinisation of tract of Burdach normal; of tract of Goll, greatly retarded; slight lymphocytic infiltration of pia mater anteriorly. 6. Mother suffering from pernicious anæmia: premature birth at 7 months. Immense number of pseudo-cells in the posterior columns; fatty débris in the posterior roots where they pass the pia mater; numerous small hæmorrhages both in grey and in white matter; defective myelinisation in cervical and lumbo-sacral cord. 7. Mother tuberculous: premature birth at 6 months. Myelinisation in dorsal cord almost entirely wanting. Masses of cells in the posterior root ganglia. 8. Mother suffering from nephritis: eclampsia; premature confinement at seventh month. Degeneration of anterior spinal roots in their intraspinal part; intense chromophilia of the anterior horn cells; small disseminated hæmorrhages; large colonies of cells in the posterior root ganglia. It would, of course, be inadvisable to speculate on the possible significance of all or any of these pathological changes; antenatal pathology of the central nervous system is almost a *terra incognita*. Dr. Catola confines himself to the following conclusion: "Different morbid conditions in the maternal parent may be associated with defects of development and slight lesions in the central nervous system of the children such as may, in the case of the latter surviving, play a certain rôle in the mechanism of morbid predisposition."

## AN EXTEMPORISED TUBERCULOSIS SANATORIUM.

IT is extraordinary what a lot of practical good at a very small cost can be done in various ways, and notably in public health matters, by merely utilising agencies already at hand, if only someone happens to think of it. An instance in point is a scheme advanced by Mr. W. Frost, mayor of Macclesfield, for treating at a time six or eight cases of pulmonary tuberculosis for a period of six weeks each, in the at present unused small-pox hospital of the borough. If the patients are selected from the crowded dwellings of the poor, where infection is being spread broadcast, they can be converted into sanitary missionaries, and thus help to diminish the disease. During their six weeks in hospital they would be educated in correct methods of living, the value of fresh air, and the methods of preventing the spread of infection to others—knowledge which they would take back home and instil into their neighbours. At the same time their own health in many cases would be materially improved. Two nurses and one maid would be a sufficient staff to do all that is required. The estimate of expenses for salaries, light, fuel, and food for the 11 persons, inclusive of the staff (the cost of food being fixed at approximately one-third additional on the ascertained cost per head at the fever hospitals), comes to £336 4*s*. To this must be added a charge during the first year of £30 for structural alterations, bedsteads, &c., making a total of £366 4*s*., which sum would be covered by a rate of 1*d*. in the £1. Rent, of course, would not have to be paid, and the nature of the work is such that in case of an outbreak of small-pox the tuberculous patients could at once be sent home and the hospital again devoted to its original purpose.

It is satisfactory to learn that this very sensible and simple plan has received the unanimous sanction of the health committee.

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IN a telegram to the Secretary of State for the Colonies, received on Feb. 3rd, the Governor of Mauritius reports that 8 cases of plague had occurred during the week ending Feb. 2nd, with 5 deaths.

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# ANNUAL REPORT FOR 1909 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

## II.[1]

IN our notice of this report in THE LANCET of Feb. 4th we alluded to Sir Shirley Murphy's use in recent reports of a special life-table for London, for the purpose of indicating the mean future life-time or expectation of life, as the best-known test of the vitality of the population. An amended table appears in the present report showing the probability of living for one month from the commencement of each month in the first year of life, and the number of survivors at the beginning of each of the first 12 months after birth out of 100,000 infants born in the year 1909. To this table further columns are added showing the figures for the previous five years recalculated from the more fully corrected figures that have become available since the life-table was first introduced into the London reports.

From this table we learn that while there appears to be generally a progressive increase in the probability of living for one month, the increase is not continued into the later months of the first year of life. The corrected figures for the last five years are given in this table, and a "composite probability curve" for these years has been prepared, which indicates that, with a generally rising probability curve, there is a slightly diminished probability of living through the ninth month of life; this circumstance will be further considered presently.

### *Infantile Mortality.*

The registration of births was not compulsory in England until 1875; but since that year the national register of births has become annually more accurate, and in the last completed decennium it may be regarded as for practical purposes complete. When, therefore, it is realised that even so recently as 1891–1900 London infantile mortality had averaged 159 per 1000 births, whilst it did not exceed 108 per 1000 in the year now under review, we are struck with the significance of the life-saving that has been accomplished within a relatively short period.

From a table for London prepared in conformity with instructions drawn up by Sir W. H. Power for the Local Government Board, it appears that among the 12,686 infant deaths in London in the year under review 4158 died within a month of birth, more than half of which succumbed before the end of their first week of life. In a supplementary table, in which the mortality at each age-period is calculated upon the number of infants surviving to the age specified, London mortality within the first weeks and months of the first year after birth is shown for each year of the last five; comparison may therefore be made of the death-rates at the several stages of each year, and thus the exact periods of infant life may be ascertained at which the decrease has been most marked. The table shows that the sixth and seventh months are those in which the decrease has been relatively greatest; whilst the first and twelfth months are those in which it has been relatively least. In order to show the effect of social condition, as indicated by the extent of overcrowding, on infant mortality at different stages of the first year of life, a table has been prepared by which may be contrasted the rates of infant mortality prevailing in groups of districts arranged on the basis of relative overcrowding—this term being understood as applying to that portion of the population which lives more than two in a room in tenements of less than five rooms. The table shows that the difference in mortality is very striking when the most favoured districts, overcrowded to the extent of 7·5 per cent. only, are compared with the least favoured districts in which the proportion of overcrowding exceeds 28 per cent. Still more striking is the contrast when the mortality is stated for separate trimesters of the first year. By this means it appears that whilst among infants under the age of three months the death-rate in the worst areas is less than one-third higher than in the best, among infants at ages from 9 to 12 months the loss of life in the former areas is more than double that in the latter. If the grouping of districts is based, not on relative overcrowding, but on the percentage of children aged 5–14 years scheduled for education purposes, we find that the results are similar.

In recent years improvement in the infantile death-rate has been shared very unequally in various parts of the metropolis. For we learn that within the quinquennial period 1905–09 the fall in infantile mortality has amounted to 25 per cent. in the districts most highly favoured in other respects, whilst it has not exceeded 13 per cent. in the least favoured districts. Reference has already been made to Sir Shirley Murphy's remarks concerning the diminished probability of living noticeable during the ninth month of infant life in association with a generally rising probability curve. But the persistency since 1905 of this feature of the probability curve has suggested the further examination of the monthly mortality figures so as to ascertain the mortality per 1000 living at the commencement of each month from certain groups of diseases in each of the last five years. For this purpose a table has been prepared in which the causes of infantile mortality are grouped into three classes—(1) those causes that increase in prevalence with progressive ages, such as the common infectious diseases of childhood; (2) those causes that show relatively little variations in age incidence, such as the diseases of the tuberculous class; and (3) those causes that exhibit diminished incidence as age advances, such as premature birth, want of breast-milk, &c. With respect to the first of these groups, we note that from the first to the twelfth month there is an almost uninterrupted increase in the rate of incidence of the common infectious diseases; while as regards premature birth, want of breast milk, and "other causes," the reverse is generally true. As far as can be learnt from their mortality, tuberculous diseases show remarkable constancy of incidence from the fourth month of life onwards, whilst the age incidence curve of diarrhœal diseases rises to a maximum in the fourth month, and thereafter progressively declines. Diseases of the respiratory system—pneumonia, laryngitis, and bronchitis—show a much less regular curve, and further analysis of the figures is requisite in order to ascertain the causes determining the shape of the curve—a shape which is suggestive of increasing susceptibility, with advancing age, to some forms of respiratory disease, and of increasing resistance to others The remarkable increase in the incidence of respiratory mortality in the ninth month of life is alone sufficient to account for the depression already alluded to in the probability curve of the London life-table.

In England and Wales, also, the figures relating to respiratory diseases show a maximum incidence at the ninth month, but the excess over the eighth month is relatively less than in London. From this circumstance Sir Shirley Murphy believes that an average over a greater number of years in London will tend somewhat to reduce the disparity between the deaths from respiratory diseases in the eighth and the ninth month of life. "It is, however, clear," he proceeds, "from an examination of the death-rates from all causes in England and Wales over a series of years, that the influences operating in the first year of life are such as to produce normally a flattening, hardly amounting to a depression, of the probability curve about the eighth month, this being the natural result of the rapid decrease down to this point of the deaths from pre-natal and natal influences, on the one hand, and the increase from the sixth month onwards in the deaths from infectious diseases, and to some extent respiratory diseases on the other hand."

For the better protection of infant life in London many of the borough medical officers of health periodically circulate valuable information and instruction, which it is hoped will be fully utilised in those districts. The experience of 1909 emphasises the great advantage enjoyed by infants fed

[1] Previous notices of this report will be found in THE LANCET of Jan. 14th (p. 110) and Feb. 4th (p. 322).

at the breast, as compared with those artificially fed either wholly or in part. Prominent among topics of this kind discussed by some health officers, may be mentioned the evil effects inflicted upon nursing mothers by employment elsewhere than at home. London experience is at yet too limited to warrant the drawing of decided inferences on this important matter, but inquiry into a large number of cases in Westminster and in St. Pancras already undertaken by Dr. F. J. Allan and Dr. J. F. J. Sykes respectively points very distinctly to the advantage in regard to health enjoyed by the offspring of mothers whose occupation does not involve lengthened absence from home.

*Prevalence of Epidemic Disease.*

Among the common infectious diseases measles alone showed exceptional fatality in the year under notice, the mortality from the other infectious diseases being below the average. Only 15 cases of small-pox are known to have occurred in London, and of these two terminated fatally. But in view of the fact that the proportion of infants either exempted on account of conscientious objection or not fully accounted for as regards vaccination is gradually increasing, especially in the worst districts, it would be folly for Londoners to count upon similar immunity from small-pox in the future.

As measles is mainly a disease of early life, its mortality is very properly stated as a proportion of children living at ages under 5 years. In the year 1909 measles has been more fatal at these ages than in any other year since 1904. The sacrifice of infant and child life varied enormously in the different sanitary areas. For whilst the death-rate did not exceed 0·35 per 1000 in Lewisham, 1·60 in Stoke Newington, and 1·62 in Hampstead, it ranged upwards to 7·29 per 1000 in Finsbury, 8·54 in Shoreditch, and 11·43 in Bermondsey. The mortality from measles is largely determined by the social condition of the people, for the disease secures by far the largest number of victims in the most overcrowded districts. Information concerning the occurrence of cases of measles is derived mainly from the teachers in elementary schools. Of these occurrences account is given in the reports of the district medical officers of health, where also particulars are given of steps taken by the local authorities for the limitation of measles prevalence, either by the closure of schools, by the exclusion from school of children from invaded houses, or by the more recent method of excluding children who are not known to be protected by a previous attack. In the case of measles unusual difficulty of securing isolation is encountered because of the circumstance that in some districts many of the patients do not receive medical supervision. In Bethnal Green, for example, out of about 600 known cases at least 20 per cent. escaped medical treatment entirely.

According to the notification returns the Administrative County of London was freer from scarlet fever in the year under notice than in any other year since 1904. The reported cases did not exceed the proportion of 1·81 per 1000 in Holborn and 2·09 in the City of London, whilst they were equal to 5·78 per 1000 in Lewisham and to 7·72 per 1000 in Woolwich. The mortality, however, was relatively lowest in Hampstead, Hackney, and Battersea, and was highest in Bethnal Green. In the month of June, 1909, a serious outbreak of scarlet fever occurred in several districts of London and also in the county of Surrey. From a joint report presented by Dr. W. H. Hamer and Dr. J. H. Jones it appears to have been clearly demonstrated that the milk from a dairy farm in Wiltshire was the cause of this outbreak, although there was complete absence of evidence that the milk was infected by human agency. On the one hand, we read that scarlet fever was certainly present in the family of a man employed in the dairy, but, on the other hand, it is stated that cases of definite scarlet fever and of sore-throat had occurred in distant areas among consumers of the milk at a date antecedent to its occurrence in that family. "It is impossible," writes Sir Shirley Murphy, "to reconcile with the facts of the occurrences the view that the milk owed its infection to this family. There appeared to be interruptions to the continued infectivity of the milk, as judged by the dates of attack of the different consumers, and again, the milk appeared on one day to have been especially operative in causing scarlet fever. These variations find explanations when the details of treatment and distribution of the milk come to be studied. Varying amounts of the infected milk were pasteurised on different days, and on the day when the most mischief was done the whole of the infected milk was sent out unpasteurised." It appears that in this, as in several other outbreaks, a vesicular disease was found in the teats and udders of some of the cows, and that when the milk of one of these cows which had recently calved was brought into use after the death of the calf the infective property of the milk was first manifested.

*(To be concluded.)*

## LONDON COUNTY COUNCIL AND MEDICAL TREATMENT AND INSPECTION OF SCHOOL CHILDREN.

*The Board of Education and Medical Treatment.*

THE Education Committee of the London County Council on Feb. 1st received a report from the Children's Care Subcommittee that the Board of Education had replied to the request for the extension for 12 months of the agreements with six hospitals for the medical treatment of school children,[1] that it would consent to the continuance of the existing arrangements with the hospitals for six months only, expiring June 30th, 1911. The Board added that it did not consider that during this period the number of children treated at the hospitals should be increased, as proposed by the Council. The letter was a long one, containing the observations of the Board upon the London scheme and dealing with important questions of organisation and administration. Copies have been sent to members of the Council only with strict injunctions not to communicate the report to the press. The subcommittee stated that it was holding special meetings to consider the letter point by point, and would report at the earliest possible date. Meanwhile, the issues involved were so important that six months would not permit of adequate consideration. The Board of Education should be urged once more to extend existing arrangements (both in regard to the agreements with the six hospitals and to other agreements expiring this year) until Dec. 31st, in order that the whole scheme might come up for consideration at one time. With regard to the London Hospital the subcommittee said that serious inconvenience would be caused if the number of children to be treated was limited to that arranged for in 1910. There was considerable congestion in the aural department of the hospital, and the Council should urge the Board to accede to the application for an increase in the numbers to be treated from 4750 to 9250 cases a year, as might be found necessary. It was mentioned that the governing body of the Hospital for Diseases of the Throat, Golden-square, W., had intimated that it was unwilling to renew the agreement with the Council, but was prepared to treat under the ordinary rules children sent by the Council.

When the report came before the Education Committee Mr. BRUCE expressed the opinion that it would be foolish after the Board's letter to repeat the request for an extension for 12 months.

The Rev. J. SCOTT LIDGETT and Mr. COTTON, however, pointed out that by the time the subcommittee, Education Committee, and Council had considered the subject the summer recess would be at hand. Mr. Cotton, though an opponent of the present scheme, declared that the Children's Care Subcommittee was thoroughly in earnest. It was evident from the letter of the Board that the system required a complete overhaul, and this could not be done in six months.

The recommendation of the subcommittee to ask the Board of Education to reconsider its decision was approved.

*Statistics of Medical Inspection.*

The Children's Care Subcommittee reported that the number of children to be medically inspected to comply with the requirements of the Code for the year ending July 31st, 1911, was 149,600. The number actually seen from August 1st to Dec. 31st, 1910, was 82,847. To comply with the Board's requirements, 3400 cases, comprising only "entrants" and "leavers," should have been dealt with each week from August 1st, 1910, or 61,200 from August 1st to Dec. 31st. During this period 46,214 "entrants" and "leavers" were inspected. On Dec. 31st there was therefore

[1] THE LANCET, Jan. 21st, 1911, p. 184.

a deficit of 14,986, but prior to Oct. 20th, 1910, only part of the staff of 72 school medical officers was engaged on the examination of children coming within the approved age groups. Between that date and Dec. 31st the full staff of school medical officers dealt with 3800 cases a week. At the same rate the staff, increased to 100 as from Jan. 1st, 1911, would deal with 5280 cases a week. Thus the deficit up to Dec. 31st would be cleared off before Easter, and, in addition, children between the ages of 8 and 9, and urgent cases, would be examined.

## THE CHOLERA EPIDEMIC.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

*Cholera in Russia.*

THE cholera epidemic in Russia is now almost, but not quite, extinct. The following figures are in continuation of those published in my last letter on this subject (which appeared in THE LANCET of Dec. 17th, 1910, p. 1789):—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Week ending | Oct. | 16th | ... | 522 | cases, | 306 | deaths. |
| ,, | ,, | 23rd | ... | 175 | ,, | 119 | ,, |
| ,, | ,, | 30th | ... | 107 | ,, | 51 | ,, |
| ,, | Nov. | 6th | ... | 172 | ,, | 78 | ,, |
| ,, | ,, | 13th | ... | 86 | ,, | 40 | ,, |

These are all "corrected" figures; the following are "uncorrected":—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Week ending | Nov. | 20th | ... | 26 | cases, | 12 | deaths. |
| ,, | ,, | 27th | ... | 33 | ,, | 17 | ,, |
| ,, | Dec. | 4th | ... | 13 | ,, | 9 | ,, |

(The above dates are all according to the Old Style.)

The totals for the whole of Russia since the beginning of the 1910 epidemic down to Nov. 20th (Dec. 3rd) are put at 215,903 cases and 100,859 deaths. In the last week in the above list (i.e., that ending Dec. 4th) the disease was confined to the towns of St. Petersburg and Baku and the governments of Kief, Perm, and Ekaterinoslav.

*Cholera in Austro-Hungary.*

Information as to the behaviour of the disease in Austria and Hungary has been far from complete. It was recently stated by the Austrian Minister of the Interior that the last case of cholera in Austria occurred on Nov. 7th, and that since the first case on August 23rd there had been in all 15 cases and 5 deaths. In Hungary the following cases and deaths have been recorded:—

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Between | Oct. | 30th | and | Nov. | 5th | ... | 23 | cases, 13 | deaths. |
| ,, | Nov. | 6th | ,, | ,, | 12th | ... | 19 | ,, 6 | ,, |
| ,, | ,, | 13th | ,, | ,, | 19th | ... | 14 | ,, 7 | ,, |
| ,, | ,, | 20th | ,, | ,, | 26th | ... | 8 | ,, 2 | ,, |
| ,, | ,, | 27th | ,, | Dec. | 3rd | ... | 2 | ,, 2 | ,, |

The cases and deaths have been confined to the counties of Bacs-Bödrog, Heves, Torontal, and Baranya; and the highest figures have been returned from the two first-named. In addition to the above, single cases occurred early in November in each of two communes in the district of Irig, in Croatia. On Dec. 19th the Turkish Consul in Budapest telegraphed that the last case of cholera had occurred there on Nov. 2nd, and that on the day of telegraphing he had learnt that 8 cases had occurred in the provinces—5 at Nemetecska and 3 at Nagybecskerek; precautionary measures, he added, were still maintained throughout Hungary.

*Cholera in Italy.*

Reports from Italy are also incomplete. The following figures have been communicated by the Turkish Embassy in Rome:—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Week ending | Nov. | 9th | ... | 88 | cases, | 21 | deaths. |
| ,, | ,, | 16th | ... | 72 | ,, | 25 | ,, |
| ,, | ,, | 23rd | ... | 44 | ,, | 10 | ,, |
| ,, | ,, | 30th | ... | 19 | ,, | 2 | ,, |
| ,, | Dec. | 7th | ... | 39 | ,, | 12 | ,, |

In the first of these weeks the disease was prevalent in the provinces of Caltanisetta, Campobasso, Caserta, Girgenti, Lecce, Naples, Palermo, Rome, Terracina, Salerno, and Trapani; in the last the list of infected provinces was reduced to four—those of Aquila, Caserta, Girgenti, and Palermo. The provinces of Caserta, Naples, Lecce, and Palermo have furnished the highest figures, but there have been a considerable number of cases in that of Rome. In the last week in the list the province of Palermo returned 33 out of the 39 cases, and of these 25 (with 10 deaths) had occurred in a lunatic asylum (which had also furnished several cases in the preceding weeks).

*Cholera in Bulgaria.*

Between Oct. 31st (Nov. 13th) and Nov. 7th (20th) 4 cases of cholera with 3 deaths occurred at Varna. These cases apparently all developed among the "contacts" who were put under "cordon," in connexion with the imported case from Constantinople mentioned in my last letter. Among 27 other persons isolated in one of the Varna hospitals 2 other cases occurred.

*Cholera in Constantinople and Turkey in Europe.*

The outbreak of cholera in Constantinople has now almost disappeared. The following are the weekly returns (in continuation of the figures formerly published):—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Week ending | Nov. | 28th | ... | 168 | cases, | 109 | deaths. |
| ,, | ,, | Dec. 5th | ... | 117 | ,, | 75 | ,, |
| ,, | ,, | ,, 12th | ... | 98 | ,, | 48 | ,, |
| ,, | ,, | ,, 19th | ... | 215 | ,, | 125 | ,, |
| ,, | ,, | ,, 26th | ... | 156 | ,, | 98 | ,, |
| ,, | ,, | Jan. 2nd | ... | 62 | ,, | 46 | ,, |

The daily returns have shown great fluctuations—partly due, no doubt, to the incompleteness of the machinery for obtaining exact information. The daily curve, however, shows some points of interest; it indicates, firstly, a period of sporadic cases only (lasting from Sept. 13th to Nov. 3rd), followed by a marked, though fluctuating, rise to a maximum of 38 cases in one day, on Nov. 22nd. The figures then fell more or less steadily, till on Dec. 11th only 9 cases were recorded. But the curve then rose rapidly again, and on Dec. 18th, and again on the 21st, as many as 43 cases were seen in a single day. The fact that this marked rise occurred just at the time of the Moslem fêtes of Kûrban Bairam must be regarded as something more than a mere coincidence. The number of cases has since steadily fallen, and on Jan. 4th only one case was registered. Among the troops of the capital the epidemic has apparently disappeared. The late prevalence of cholera in this city has coincided with a remarkable spell of warm, spring-like weather, more like May than December; but it must be added that this spell still continues and that the cholera curve has fallen in spite of it.

The figures for the troops outside Constantinople will perhaps never be accurately known. In the Touzla lazaret (on the Gulf of Ismidt) at least 250 cases, with 187 deaths, occurred, and the vast majority of these were among the troops interned there. From a large number of places (Rodosto, Dedeagatch, Hademkeui, Samsoun, and Salonica) in the European and Asiatic provinces news has been received of more or less severe outbreaks of the disease among the troops returning to their quarters after the autumn manœuvres. It is impossible to calculate even approximately how many men were attacked in these circumstances, but the totals must be considerable.

At Salonica there has been a mild outbreak of cholera in the civil population and among the troops. In the former 7 cases and 4 deaths occurred down to Dec. 17th; 2 cases and 2 deaths in the following week; and 2 cases and 2 deaths in the week ending Dec. 31st. In the troops (mostly conscripts in this instance) 29 cases and 9 deaths were recorded down to Dec. 17th, and 1 fatal case subsequently. Cholera also appeared at Cedes and Seres, in the Salonica vilayet, and the totals for that province down to Dec. 31st are put at 52 cases, with 27 deaths.

*Cholera in Asiatic Turkey.*

In the vilayets of Erzerum and Van the cholera outbreak seems to have become extinct in the early days of November. In that of Trebizond the following figures have been recorded (in continuation of those in my last letter):—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Week ending | Nov. | 27th | ..... | 47 | cases, | 15 | deaths. |
| ,, | ,, | Dec. 4th | ..... | 42 | ,, | 16 | ,, |
| ,, | ,, | ,, 11th | ..... | 13 | ,, | 8 | ,, |
| ,, | ,, | ,, 18th | ..... | 5 | ,, | 3 | ,, |

The total number of cases in this vilayet has been 746 and that of deaths 394.

At Samsoun, on the south shores of the Black Sea, 18 cases with 18 deaths were recorded between Nov. 13th and Dec. 5th. Cases of the disease have also been reported from Broussa, Konia, Moussoul, Jezireh, and other places in the vilayets of Asia Minor, including those of Diarbekir, Mamouret-ul-Aziz, and others.

In the vilayet of Bagdad the following are the latest weekly returns:—

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Between | Nov. 20th | and | Nov. 25th | ... | 55 | cases, | 69 | deaths. |
| ,, | ,, 26th | ,, | Dec. 4th | ... | 42 | ,, | 30 | ,, |
| ,, | Dec. 5th | ,, | ,, 11th | ... | 22 | ,, | 16 | ,, |
| ,, | ,, 12th | ,, | ,, 17th | ... | 18 | ,, | 24 | ,, |
| ,, | ,, 18th | ,, | ,, 25th | ... | 29 | ,, | 33 | ,, |
| ,, | ,, 25th | ,, | ,, 26th | ... | 3 | ,, | 2 | ,, |

These figures are undoubtedly imperfect. The totals for the Bagdad vilayet since the beginning of the outbreak down to Dec. 26th are put at 814 cases and 718 deaths.

At Basra, near the head of the Persian Gulf, 10 further cases with 9 deaths were seen between Nov. 18th and 26th; and 1 case with 1 death between Nov. 26th and Dec. 3rd. No other cases have been reported since.

In Smyrna the returns have been as follows:—

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| From | Nov. 13th | to | Nov. 24th | ... | 22 | cases, | 16 | deaths. |
| ,, | ,, 25th | ,, | Dec. 4th | ... | 17 | ,, | 14 | ,, |
| ,, | Dec. 5th | ,, | ,, 11th | ... | 27 | ,, | 17 | ,, |
| ,, | ,, 12th | ,, | ,, 18th | ... | 9 | ,, | 9 | ,, |
| ,, | ,, 19th | ,, | ,, 25th | ... | 5 | ,, | 5 | ,, |
| ,, | ,, 26th | ,, | Jan. 1st | ... | 12 | ,, | 8 | ,, |

The totals here are put at 92 cases, with 69 deaths.

*The Pilgrimage and the Cholera: an Infected Haj.*

The fêtes of Kûrban Bairam fell this year between Dec. 11th and 14th. It seemed impossible that the Haj should escape being an infected one, with cholera more or less severely epidemic in Russia, in the European and Asiatic provinces of Turkey, in Muscat, in Persia, and elsewhere. Yet for a time it appeared as though the impossible had happened. The fêtes at Mecca, Mina, and Arafat passed without any appearance of the disease; nearly a fortnight went by, and the telegrams still reported the health of the pilgrims favourable. On previous occasions when cholera has broken out in the Haj it has almost invariably been before or at the time of the greatest agglomeration of pilgrims in connexion with the Bairam fêtes; so, as time went on and no signs of cholera appeared, the hope was for a time justified that this year's Haj would, in spite of all fears to the contrary, remain a cholera-free one. But this hope has now been disappointed. On Dec. 26th a telegram from Mecca reported the occurrence of two "*cas cholériformes*" without further details save that the results of a bacteriological examination were uncertain. About the same time an undoubted cholera case was landed at the Tor lazaret from a pilgrim steamer returning from Jeddah. For several days telegraphic communication with Mecca was interrupted; since it has been re-established the existence of cholera there has been placed beyond a doubt. At least 12 cases have occurred. A considerable number of other cases of the disease have also been landed from pilgrim steamers at the Tor lazaret. The Haj has consequently been declared a cholera-infected one, and measures taken in consequence. These include a five days' quarantine in the lazaret of Tebuk for pilgrims returning by the Hedjaz Railway. The fact that the disease only broke out among the pilgrims after they had begun to disperse, when the Bairam fêtes were over, must be regarded as a most fortunate one. The next news of the outbreak may be expected from Medina, where a majority of the pilgrims flock to after leaving Mecca.

*Cholera in Muscat.*

In the week ending Nov. 26th 4 deaths from cholera were registered in Muscat; in that ending Dec. 3rd there were 3 more; and on Dec. 10th the port was officially declared cholera free.

*Cholera in Persia.*

Reports from Persia throw a very imperfect light on the course of the cholera epidemic in that country. The following is a brief summary of the information hitherto received. At Enzeli, on the Caspian Sea, cholera appeared on August 20th; down to Dec. 9th there had been 122 cases there, with 81 deaths. At Resht, from Oct. 13th to Dec. 11th, 118 deaths were recorded. The disease prevailed more or less extensively in the province of Azerbaijan, in the neighbourhood of Tabriz. In the Khorassan province it caused a serious epidemic at Meshed, where between Sept. 11th and Nov. 6th 262 cases and 109 deaths were registered. It appeared in Daré-Djaz, Mohammedabad, and Golkandar, to the north and north-west of Meshed. At Turbat-i-Haidari (near the Afghan frontier) 66 cases with 25 deaths occurred between Oct. 10th and Nov. 15th. In the south-west of Persia there were at Hamadan 96 cases and 48 deaths between Oct. 2nd and Dec. 12th, and at Kermanshah 531 deaths between Oct. 5th and Nov. 10th (and apparently none since). At Kirman 77 cases and 25 deaths were recorded down to Nov. 30th. At Mohammerah, on the Shatt-ul-Arab river, below Basra, there were 58 cases and 22 deaths between the beginning of November and the 26th of that month (and apparently none since). The disease has also prevailed at Mollah Ali, Birdjend, Assadabad, Fathabad, Nir, Ahar, Kalat-i-Nadiri, Lutfabad, and elsewhere.

*Cholera in Tripoli (Africa).*

In Tripoli (Barbary) only 3 cases with 2 deaths were recorded between Nov. 22nd and Dec. 1st, and only 1 death between Dec. 1st and 8th. On the 13th it was reported that no fresh case had been seen since the 4th. The totals here are put at 290 cases with 235 deaths. But consular reports place the totals at 328 cases with 226 deaths. Of these deaths, no less than 219 are said to have occurred among Jews, 4 among Moslems, and 3 among Christians.

*Cholera in Tunisia: A Correction.*

In recent letters to THE LANCET on this subject I have mentioned the occurrence of many cases of, and deaths from, cholera in the island of Jerba, off the coast of Tunisia. It appears, however, that this was erroneous, and that the telegrams received from that island and furnishing the figures that I had quoted related to the epidemic in Tripoli (Barbary) and not to any outbreak in the island itself. I must add that there was nothing in those telegrams to indicate that this was the case, so that it was but natural to assume that the figures related to the island. So far as is known here cholera has not appeared in any part of Tunisia in the past year.

Constantinople, Jan. 5th.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the January meeting of the committee 27 cases were considered and grants amounting to £209 made to 20 of the applicants. Appended is an abstract of the cases relieved.

Daughter, aged 59 years, of late M.R.C.S. No income; unable to earn a living on account of persistent ill-health. Recommended by Mr. C. E. A. MacLeod, F.R.C.S. Voted £12.

Widow, aged 47 years, of L.S.A. Husband's means exhausted by a long illness ending in death a few months ago, and the small sum obtained for the death vacancy was practically all swallowed up by debts. Has taken a house and hopes to support herself by receiving boarders. Four children, all dependent. Recommended by Dr. Walter Broadbent. Voted £10.

Daughters, aged 62 and 60 years, of late M.R.C.S., L.S.A. Formerly teachers and now endeavouring to maintain themselves by a small boarding-house, but have had a bad year. Recommended by Dr. J. Macfee. Voted £10.

M.B., C.M. Edin., aged 61 years. Incapacitated by hemiplegia; no income. Recommended by Dr. William Bruce. Voted £2 and to be further considered next month.

M.R.C.S., aged 63 years. Was obliged to retire three years ago owing to paralysis, and has supplemented a small annuity by the proceeds of the sale of practice, now exhausted. Recommended by Dr. J. Mitchell Bruce, Vice-President. Voted £10.

Widow, aged 50 years, of L.R.C.P. Edin. Since husband's death has supported herself by taking boarders, but has been compelled to contract some debts. Two sons unable to assist, and one daughter, delicate, who does the house-work. Recommended by Dr. J. Bligh. Voted £12.

Daughter, aged 73 years, of late M.R.C.S. Supplements an income of £20 a year by needlework, but is becoming incapacitated by rheumatoid arthritis. Relieved 12 times, £113. Recommended by Mr. F. W. Way. Voted £12.

Widow, aged 40 years, of M.D. R.U.I. Income £25 a year. One child 2 years old, which makes it extremely difficult for applicant to earn anything. Relieved once, £10. Recommended by Mr. J. R. Lownds Voted £10.

Widow, aged 61 years, of M.R.C.S. No income; children only able to give very slight help. Relieved seven times, £72. Recommended by Mr. E. C. Barnes. Voted £12.

Widow, aged 57 years, of L.R.C.P. Irel. No income; unable to earn anything on account of a deformity. Children cannot help. Relieved seven times, £56. Recommended by Dr. C. W. Buckley. Voted £12

M.R.C.S., aged 83 years. Only income a small Poor-law superannuation allowance. Children unable to help and one still dependent. Relieved once, £12. Recommended by Dr. Henry Davy. Voted £12.

M.D.Edin., aged 69 years. Obliged to retire some years ago on account of ill-health, and has since lost all his means through a series of family misfortunes. Relieved once, £10. Recommended by Sir George Beatson, K.C.B., honorary local secretary. Voted £10.

Daughter, aged 53 years, of late M.R.C.S. No income; eyesight defective and can only earn a few shillings a week. Relieved once, £18. Recommended by Mr. W. M. Beaumont. Voted £18, to be shared with two afflicted sisters.

Widow, aged 56 years, of L.S.A. Only income a small pension; children cannot help. Relieved once, £12. Recommended by Mr. R. H. Luce, honorary local secretary. Voted £5.

Daughter, aged 54 years, of late M.R.C.S. Keeps a boarding-house, but is in temporary difficulties owing to a couple of bad seasons. Relieved once, £10. Recommended by Mr. J. Jarvis. Voted £10.

Daughter, aged 59 years, of late M.R.C.S. For many years was a matron at a boys' school, but is now dependent on small earnings from music lessons and sewing. Relieved four times, £48. Recommended by Dr. C. J. Gibb. Voted £12.

Widow, aged 53 years, of M.R.C.S. No income, and is dependent on this Fund and help given by relatives. Children barely self-supporting. Relieved 15 times, £174. Recommended by Dr. Charles Steele. Voted £5.

Daughter, aged 34 years, of late M.R.C.S. Trained as a nurse, but found herself unable to act as such owing to continued bad health, which necessitated three or four surgical operations. Now endeavours to support herself by making marmalade. Relieved six times, £53. Recommended by Dr. E. Hyla Greves. Voted £10.

L.R.C.P.Edin., aged 52 years. Used to have a good practice in London, but owing to continued ill-health is now penniless and hopes shortly to get a ship's surgeoncy. Relieved once, £5. Recommended by Mr. J. Roche Lynch and Mr. H. W. Kiallmark. Voted £5.

Daughter of late M.D., who practised in Devonshire. Was comfortably provided for, but lost practically everything through the negligence of a trustee, and now endeavours to support herself by taking boarders. Relieved twice, £25. Voted £10.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole street, London, W.

# THE SERVICES.

## ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: R. S. Bernard to the *Indefatigable*, on recommissioning; and S. H. Birt to the *Carnarvon*, on recommissioning. Staff-Surgeon: M. L. M. Vaudin to the *Apollo*. Surgeons: D. H. C. Given to the *Tamar*, additional, for the *Rosario*, and to the *Rosario* on recommissioning; E. MacEwan to the *Warrior*; and W. R. Harrison to the *Indefatigable*, on recommissioning.

## ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenant-Colonels are placed on retired pay:—James M. Reid (dated Jan. 29th, 1911), Charles W. S. Magrath (dated Feb. 2nd, 1911), and Louis W. Swabey (dated Feb. 3rd, 1911).

Lieutenant-Colonel John B. W. Buchanan retires on retired pay (dated Feb. 4th, 1911).

Major James W. Jennings, D.S.O., is placed on retired pay (dated Jan. 31st, 1911).

Lieutenant-Colonel R. R. H. Moore, from Bulford Camp, Salisbury Plain, has taken over duties as Administrative Medical Officer of the Belfast District. Lieutenant-Colonel J. R. Forrest has been transferred from Cork to Tipperary. Lieutenant-Colonel M. O'Halloran, from Shorncliffe, has joined for duty at Canterbury. Lieutenant-Colonel F. W. Caton Jones, from Tidworth Park, has taken over command of the station hospital at Quetta. Major D. Harvey, honorary surgeon to H.E. the Viceroy of India, has been appointed to the medical charge of the transport s.s. *Rewa*, leaving Karachi for Southampton on March 31st, vice Captain C. G. Thomson, who will proceed on duty. Major W. C. Poole has been granted three months' general leave in India. Major H. W. Grattan, sanitary officer of the Eighth (Lucknow) Division, has been transferred from Naini Tal to Lucknow. Major J. V. Forrest has arrived at Cairo on termination of his leave. Major L. F. Smith, medical officer in charge of the brigade laboratory at Nowshera, has been appointed to officiate as Sanitary Officer of the First (Peshawar) Division, during the absence on special duty of Major R. J. Blackham. Major C. J. O'Gorman, D.S.O., has been appointed to the officiating command of the station hospital at Peshawar. Major F. J. C. Heffernan, from Fyzabad, has taken up duty in the London District. Major M. Swabey has been transferred from Jubbulpore to Secunderabad. Major A. F. Tyrrell, from Fermoy, has been appointed for duty at Tipperary. Major G. St. C. Thom, medical officer in charge of the station and cantonment hospital at Subathu, Simla Hills, has been granted five months' leave of absence home from India. Major H. A. Hinge, Staff Officer for Mobilisation Stores, Ninth (Secunderabad) Division, has arrived home from India in the transport s.s. *Plassy*. Major A. H. Morris, specialist sanitary officer, Scottish Command, has been detailed to embark for Malta in the transport s.s. *Soudan* on Feb. 25th. Captain G. J. Houghton, at present serving at Queenstown, has been placed under orders for a tour of service on the West Coast of Africa (Sierra Leone). Captain A. T. Frost has taken up duty as Specialist in Dermatology and Venereal Diseases in the Dublin District. Captain C. H. Furnival, on arrival in India, has been appointed to the Southern Army and posted to the station hospital at Secunderabad. Captain P. A. Lloyd Jones, from Malta, has joined for duty in the Cork District. Captain W. McConaghy has been transferred from Oxford to Tidworth Park. Captain R. C. Hallowes, on arrival home from Cairo, has been posted to the Belfast District. Captain A. C. Adderley, from Lichfield, has embarked for a tour of duty in South Africa. Captain A. C. Duffey, at present serving in the Dublin District, has been placed under orders to embark for India on March 3rd next for duty with the Northern Army. Captain E. W. Powell has taken over charge of the Brigade Research Laboratory at Aden. Captain L. V. Thurston, from Khanspur, has been appointed to the Irish Command for duty in the Cork District. Lieutenant C. H. Stringer and Lieutenant L. F. K. Way have joined for duty in the Southern Command. Lieutenant F. H. Somers-Gardner, from Hilsea, has been posted to Pontypridd. Lieutenant J. James, from Woolwich, has embarked for South Africa.

## INDIAN MEDICAL SERVICE.

His Excellency the Governor of Bombay has appointed Lieutenant-Colonel L. F. Childe Professor of Medicine, Clinical Medicine, and Therapeutics at the Grant Medical College, Bombay. Major A. G. Sargent has been appointed to officiate as Civil Surgeon at Belgaum. Major T. S. Novis has taken up duty as Presidency Surgeon, Bombay (First District), in succession to Captain L. P. Stephen. Major H. J. R. Twigg has taken over charge of the Yeravda Central Prison, in succession to Captain J. Lowson. Major B. Deare has been selected to succeed Major R. Maddox as Civil Surgeon at Darjeeling while on furlough. Captain L. B. Scott, Bombay, has received an extension of his leave. The services of Captain W. J. Collinson, on plague duty in the Punjab, have been replaced at the disposal of the Government of India in the Home Department on his return from leave. Captain R. Kelsall has been appointed to the Civil Medical Charge of the Thayetmyo District (Burma) in succession to Captain R. D. MacGregor, posted on special duty. Captain W. L. Harnett has taken over charge as Specialist in Prevention of Disease at the Brigade Research Laboratory, Jubbulpore. Captain J. C. S. Oxley, civil surgeon at Amraoti, has been granted privilege leave, combined with furlough and study leave, home from India for one year and eight months. Major J. F. James has been appointed Civil Surgeon at Jalpaiguri. The services of Captain A. S. M. Peeble have been replaced at the disposal of the Army Department. Captain W. H. Odlum, medical officer of the 30th Lancers, has been appointed to the Civil Medical Charge of Jhansi during the absence on leave of Captain H. W. Illius. Lieutenant W. D. Keyworth has been appointed Specialist in Midwifery and Diseases of Women and Children to the Sixth (Poona) Division.

## TERRITORIAL FORCE.

### *Royal Army Medical Corps.*

*For attachment to Units other than Medical Units.*—Hugh Paterson (late Second Lieutenant, 4th Battalion (Queen's Edinburgh Rifles, The Royal Scots (Lothian Regiment)), to be Lieutenant (dated Nov. 17th, 1910).

## HONORARY PHYSICIAN TO THE KING.

Lieutenant-Colonel Robert S. F. Henderson, Royal Army Medical Corps, has been appointed an Honorary Physician to the King, and has been granted the brevet rank of Colonel, vice Surgeon-Major-General J. Sinclair, deceased.

## DEATHS IN THE SERVICES.

Lieutenant-Colonel Alfred William Frederick Street, late of the Indian Medical Service, recently at Norsey Manor, Billericay, at the age of 58. He took part in the Afghan

war from 1878–1880 and was present at the action on the Helmund, the battle at Maiwand, and the defence of Kandahar (mentioned in despatches, medal and clasp). He served in the Burmese expedition, 1886–7 (mentioned in despatches, medal and clasp, and the Distinguished Service Order).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The *Journal of the Royal Army Medical Corps*, apart from the more strictly scientific subjects, frequently makes its pages interesting by giving short biographies of past service worthies. The February issue contains an account of the life of Robert Jackson, Inspector-General of Hospitals, who was born at Stone Byers near the Falls of Clyde in 1750. "Many army medical officers," says Major H. A. L. Howell, the author of the article, "have attained greater honours, but few men have done more to improve the condition of the British soldier and the army surgeon." Other articles are an important Report on the Determination of the Amount of Tin in Tinplate used for Canning Preserved Food, by Major W. O. Beveridge, D.S.O.; a Note upon Yellow Fever, Bilious Remittent and Remittent Fevers in West Africa, by Sir Rubert Boyce, F.R.S.; and Blood-Culture in Typhoid Fever, by Major S. L. Cummins.

MEASLES AT THE ROYAL NAVAL COLLEGE, DARTMOUTH.

The *Times* states that over 60 cases of German measles and other minor ailments among the naval cadets at the Royal Naval College, Dartmouth, are under treatment. The Prince of Wales and Prince Albert are in good health.

Surgeon-Lieutenant-Colonel C. R. Kilkelly, C.M.G., M.V.O., has tendered his resignation as house governor and medical superintendent of the Osborne House Convalescent Home for Army and Navy Officers.

# Correspondence.

"Audi alteram partem."

## GIRLS' SCHOOLS, GAMES, AND NEURASTHENIA.

*To the Editor of* THE LANCET.

SIR,—Having read with much interest and agreement Dr. Robert Jones's letter on Girls' Schools, Games, and Neurasthenia, in THE LANCET of Feb. 4th, I am impelled to write and endorse heartily most of what he says.

Having had 12 years' experience of nervous work amongst women and girls, I feel strongly also that the practically continuous time table at a large number of the best schools for girls is responsible for much of the restless incapacity to interest and occupy themselves satisfactorily which manifests itself later when these same girls return to their homes. To it, too, is due the fact that valuable and character-building knowledge is so ill assimilated that it fails to make life a comprehensible and interesting whole to the girl, who should feel it only too short in which to compass the many activities which make their appeal to the efficiently educated individual.

The failure to make life, practically anywhere in the world, interesting, is the worst accusation that can be brought against any system of education—and it can with justice be brought against much of the education of girls to-day. The reason appears to me to be that urged by Dr. Jones—i.e., that with a continuous round of lessons and games, the knowledge absorbed from both has no time in which to be digested. The girls have no time in which to see how knowledge applies to life. It is this assimilation which makes the competent, self-reliant woman, who will be able to enjoy applying what she has learnt to whatever circumstances she may find herself in—who will be able to regard games in their proper proportion, and not become hipped and morbid because there is no hockey team in her neighbourhood, wandering aimlessly through life, like one I know of, who said she had sold her bicycle because she found it took so much shorter a time to bicycle than to walk, and she did not know what to do with her days.

This demand for more free time for development of individuality and character is not met by the argument that the girls will only use the time given them badly. If this be so, what then is likely to occur when they have the management of far more of their time on leaving? Time is like money and can only be understood in the use of it. What Dr. Jones says as to the mental effect of the separation of exercise from work is exceedingly true. While having no quarrel with games, which are excellent in their place, there is a feeling of satisfaction in getting exercise from doing practical work which has no counterpart in games. I know of one school where the pupils laid out most of the grounds with excellent results. This was an attempt "to establish a proper coördination of the different branches of knowledge material."

In what Dr. Jones calls "the wild cult of athleticism" by girls, or rather by their teachers for them, as a means to health, it is sometimes forgotten that sound health is the power of ready adaptation to as widely different conditions as possible, and that it is as truly a test of health to be able to sit up for several nights in succession, and to stay for a week in the house if necessary, as it is to be able to walk 15 miles or play a hard game of hockey without showing signs of deterioration, mental, moral, or physical, under any of these stresses. One thing is sure, that the physique, well cultivated and adapted to games, does not alone protect from nervous breakdown, and if the girl be incidentally led to think of her own physical or mental development as the important matter apart from its use, it may even "carve the way for the worst type of nerves"—characterised by egoism, introspection, hypochondriasis, and consequent depression.

"This is the true joy of life, the being used for a purpose recognised by yourself as a mighty one; the being thoroughly worn out before you are thrown on the scrap heap; the being a force of nature, instead of a feverish, selfish clod of ailments and grievances, complaining that the world will not devote itself to making you happy." (George Bernard Shaw.)

I am, Sir, yours faithfully,

Hove, Feb. 6th, 1911. A. HELEN A. BOYLE.

## THE NEW BUILDING OF THE ROYAL SOCIETY OF MEDICINE.

*To the Editor of* THE LANCET.

SIR,—The praiseworthy effort to erect a building worthy of the Royal Society of Medicine, and especially for the housing of the magnificent library, deserves encouragement in every way. It must, however, be borne in mind that to Fellows resident in distant parts of the world very little benefit accrues beyond the receipt of the Proceedings. For us the departure in library practice (initiated by the Secretary, Mr. MacAlister), in being able to get abstracts made on any subject of interest to the worker, is invaluable. It does not demand a great tax on the imagination to appreciate the position of absolute deadlock for want of references.

I am convinced that if this procedure were more widely known it would induce a number of workers to join the society who up to the present have stood aloof, as the benefits corresponding to a three-guinea subscription were not apparent. It must necessarily involve some expenditure, but it appears to be an investment in the right direction and aims at carrying out the true object of the society.

I wish to extend my personal thanks to the council of the Royal Society of Medicine for the departure, and to express the hope that it will be continued and encouraged, and published more widely.

I am, Sir, yours faithfully,

Johannesburg, Jan. 16th, 1911. G. A. E. MURRAY.

## SEASONAL COLOUR CHANGES.

*To the Editor of* THE LANCET.

SIR,—I am endeavouring to collect all the facts I can bearing upon the change which takes place by the animal which is the brown stoat in summer and the white ermine in winter. Some important questions of physiology are involved in its explanation. Does the change occur as a matter of season independently of temperature, or is it connected with actual cold? At what precise period of the year does it usually begin? When an animal has been in winter plumage—more correctly peltage—at what date and under what conditions does it again become brown? We have recently obtained at the Haslemere Museum a beautiful ermine of this

winter's production. It might be thought that we have had no cold this winter, but weather chronologists assure us that the temperatures in November were exceptionally low, although December was the reverse. If any of the readers of THE LANCET can supply me with facts they will be very valuable. Many of your country residents may have good opportunities of obtaining specimens. We want illustrations of all stages, whether records of facts or, still better, the bodies of the animals. The latter should be sent to me at the Educational Museum, Haslemere, Surrey. It is not only developed specimens of either condition that are wanted, but especially those in the transition stage. I scarcely know a single specimen in our museums which illustrates the winter to summer changes, and is labelled as such.

I am, Sir, yours faithfully,
JONATHAN HUTCHINSON.

Gower-street, W.C., Feb. 6th, 1911.

## SCHLEIDEN AND SCHWANN.

*To the Editor of* THE LANCET.

SIR,—The most fundamentally important biological discovery of modern times undoubtedly is the cell theory, which is as supreme for biology as for pathology. It is therefore desirable that everyone interested in the progress of modern science should be accurately informed as to the events which led to this high attainment.

The note upon Schwann's work, which appeared in THE LANCET of Jan. 7th, does justice to him in this direction; but there is a serious omission—the antecedent work of Schleiden, which was crucial for the cell theory, is disregarded and even disavowed. It is desirable that the names of Schleiden and Schwann should be jointly remembered as the founders of the cell theory; but if we are compelled to discriminate between the two, it must be stated that it is Schleiden's work that is really indispensable, since he first established on a broad scientific basis the cellular nature of all forms of vegetable life. It is not merely the items of knowledge that he discovered, but the method he employed, that constitutes his special distinction. Hence when he founded vegetable morphology he also founded morphology in general, for Schwann's work was but an extension of his method to the animal world.

Schleiden fought bravely against the tyranny of the spirit of detail, which dominated his age as it does ours. His work was a protest against the narrow spirit of specious specialism, with its worship of sterile details, and its aversion to all else. He was far in advance of his age. Schleiden's researches (1837) established for the first time the cell as the elementary unit of all forms of vegetable life, the essential solidarity of which was thus made manifest. Before Schleiden's day many attempts had been made to institute analogies of this kind between the great divisions of the animal and vegetable world, but without success. Schleiden's work prepared the way for effecting this comparison, which was soon afterwards (1838) carried out by one of his acquaintances—Theodor Schwann.

The most fruitful years of Schwann's life were those he spent with the celebrated Johannes Müller, assisting in the formation of his anatomico-pathological museum in Berlin. It need hardly be mentioned that one who had thus come into personal contact with the wide-ranging genius of Müller—the inspirer and intellectual father of so many of Germany's greatest scientific leaders—was certain to have had his mind illuminated in no ordinary degree in all that appertained to the great biological problems of the age. In this connexion it is of interest to note that, even at this early stage, Müller had already demonstrated the cellular nature of the notochord and of cartilage. It is, therefore, not surprising to find that it was in Müller's "incredibly primitive" laboratory that the cell theory of animal structures was established by Schwann.

It will be no disparagement of Schwann's merit if I ask this question: How much was he indebted for his inspiration to Schleiden and to Müller? To the former he has acknowledged his indebtedness; and the services of the latter were probably of such a kind as not to require formal recognition. In the preface of his celebrated work, "Microscopical Researches into the Accordance in the Structure and Growth of Animals and Plants" (1839), Schwann says:—

> Schleiden communicated the results of his investigations to me prior to their publication in 1837. The resemblance of the cells of the chorda dorsalis to vegetable cells, which Johannes Müller had previously noticed, had often struck me, but nothing resulted from it. The discoveries of Schleiden, however, led me to more extended researches. I compared the cells of cartilage and of the chorda dorsalis with vegetable cells, and found the most complete accordance.

Further observations having yielded similar results, he was soon able to show that Schleiden's generalisations were in every respect applicable also to the animal world. In conclusion, it remains only to be added—and very necessary it is to make the addition in these days of forgetfulness—that the discoveries of Schleiden and Schwann were rendered possible by small but difficult mechanical improvements in the microscope, which converted it from a mere toy into the efficient scientific instrument with which everyone is now so familiar. Very noteworthy is it that these improvements took nearly two and a half centuries to effect; for the microscope, which was invented near the end of the sixteenth century, was not rendered really serviceable until after 1830.

I am, Sir, yours faithfully,
Walton-by-Clevedon, Jan. 21st, 1911. W. ROGER WILLIAMS.

## THE DEATH OF HEROD AGRIPPA.

*To the Editor of* THE LANCET.

SIR,—I think the following notes of a case in the Cawnpore General Hospital in 1857 afford a better explanation of the death of King Herod than any quoted in THE LANCET of Jan. 7th, p. 44.

In 1857 I arrived at Cawnpore in medical charge of a detachment of the 65th Foot, very soon after General Outram and General Havelock had left to relieve the Lucknow garrison; and I was then attached for duty to the General Hospital, Cawnpore. My friend Charles Julian Jackson was also attached for duty to the same hospital, and he showed me a case that had been admitted under his care of a soldier suffering from (fly-blow) maggots in his nostrils. With great care and trouble these were removed and the man protected with mosquito-curtains and when well was discharged to duty.

Not long after the same man was re-admitted suffering in the same way, but to a greater degree, as the maggots had penetrated to the throat, and eating into an artery, the man died. This man was a very heavy sleeper, and slept with his mouth wide open, which will account for the access of flies to his nose. I also had under my own care a soldier who, from want of cleanliness, had maggots under his long finger-nails, but these were easily removed.

Anyone who has seen, as I have, the rapid destruction of sheep from the maggot-fly, will not doubt the destructive power of the fly where it can get a lodgment. Where sheep are not dipped to prevent the attacks of the fly it is absolutely necessary to carefully inspect them twice daily. I believe that in some cases live maggots are deposited instead of eggs.—I am, Sir, yours faithfully,

BERNARD KENDALL,
Upper Norwood, Jan. 9th, 1911. Surgeon-Major (Retd.), I.M.S.

## TURIN INTERNATIONAL EXHIBITION, 1911: THE BRITISH SECTION.

*To the Editor of* THE LANCET.

SIR,—It has been decided that in the British Section of the approaching Turin Exhibition chemical and physical apparatus shall be shown, as far as possible, in a truly practical and novel manner; and I trust you will afford me, through the medium of your valuable columns, an opportunity of giving information to the public regarding the scheme. Generally speaking, no means are provided at exhibitions for demonstrating the utility of the instruments exhibited; and it has been felt that it would be a very great improvement to show apparatus as it would be used in a laboratory.

Accordingly for the British Chemical Section of the Turin Exhibition arrangements are now approaching completion by which, it is anticipated, there will be on view at least two well-equipped chemical laboratories, with such work going on as will effectively illustrate various interesting processes. In addition, there will be a large space available for the display in show-cases of chemical products and apparatus not in use in the laboratories. Smaller rooms will be provided for certain special appliances. The court devoted to

scientific instruments will be of similar design. Here also arrangements are being made for the display of apparatus ready for work, electric supply where needed being provided. The equipment of a large dark room is under consideration, and in this projection apparatus, such as oscillographs, spectroscopes, optical lanterns, and photometers, could be shown to advantage.

The organisation of the exhibits referred to has been placed by the Exhibitions Branch of the Board of Trade in the hands of Dr. F. Mollwo Perkin, under the direction of a joint subcommittee of the Chemical Industries Committee and the Mathematical and Scientific Instruments Subcommittee. This joint sub-committee considers that exhibitors could not have more favourable conditions for demonstrating the merit of their exhibits than those which this new arrangement will afford, and that, at the same time, in the way of instruction by such demonstrations the visiting public will be greatly benefited.

I am, Sir, yours faithfully,

BOVERTON REDWOOD,
Chairman, Chemical Industries Committee.

Board of Trade, Westminster, S.W., Feb. 2nd, 1911.

## TUBERCULOSIS AND STATE INTERVENTION.

*To the Editor of* THE LANCET.

SIR,—Referring to further correspondence under this head in your issue of Jan. 28th will you allow us to add that the purpose of our recent letter to THE LANCET, which was to correct a misleading impression which seemed current—namely, that the Edinburgh Conference on Tuberculosis favoured the principle of separate legislation directed especially against tuberculosis—has been achieved. A motion in favour of such legislation was, indeed, submitted to the meeting, but was lost. The resolution which was passed by the Conference was definitely limited to the question of including tuberculosis in the proposed scheme of invalid insurance. Your special Sanitary Commissioner clearly grasped the distinction as shown by the report in your columns.—We are, Sir, yours faithfully,

W. LESLIE LYALL, M.B. } Joint Honorary
JAMES MILLER, M.D. } Secretaries.

Edinburgh, Jan. 30th, 1911.

## THE NOMENCLATURE OF THE SUPRARENAL PRINCIPLE.

*To the Editor of* THE LANCET.

SIR,—In THE LANCET of Sept. 3rd, 1910. p. 778, you printed a short paragraph entitled "New Words." You commented upon the supplement of four pages to the Standard Dictionary of the English Language which you had received from Messrs. Funk and Wagnalls, and you mentioned that the word adrenalin had been included in that supplement to the well-known dictionary. It may be interesting to quote the full definition there given. It is as follows:—

Adrenalin. *Chem.* A hemostatic astringent principle of the suprarenal gland: the most powerful astringent known. (Coined by Dr. Norton L. Wilson, Nov., 1900.)

I am, Sir, yours faithfully,

London, Jan. 31st, 1911. INTERESTED.

TRAINED NURSES' ANNUITY FUND.—Her Majesty Queen Alexandra has approved of the suggestion that the surplus of £90 remaining after the purchase by the members of the Territorial Nursing Service of a cross for the tomb of King Edward VII. shall form the nucleus of an additional annuity for disabled trained nurses. The annuity will be called the King Edward VII. Memorial Annuity and the Council of the Trained Nurses' Annuity Fund has issued an appeal for subscriptions to make the amount up to £900, the sum required to endow an annuity of 10*s.* per week. Contributions may be sent to the Bankers, Messrs. Coutts and Co., 440, Strand, London, or to the honorary secretary, Dr. A. Ogier Ward, 73, Cheapside, London, E.C.

## THE HOUSING PROBLEM IN SOUTH WALES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Concluded from p. 334.*)

### *The Swansea Strand.*

THE problem at Swansea is similar in most details to that of Merthyr Tydfil. There is in both towns the sudden augmentation of population due to the rapid and recent developments of the mining and metallurgic industries. But at Swansea we find further complications arising from the growth of the port, with its ever-increasing fleet of ships that bring ore and take away coal, attract poor dockers in quest of work, and land sailors in search of dissipation. This necessitates such districts as the Swansea Strand, which Mr. George R. Sims, in his little book entitled "Human Wales," describes as a district of difficulties built by "the river of sin upon the strand of shame," where there are girls of 20 who are old already. As a matter of fact, however, it is very fortunate for the town as a whole that the more vicious and disreputable elements of the population should concentrate in a particular district. Of this Swansea has had recent experience. Some labour members of the borough council of Swansea complained that too much care was taken in the choice of tenants for the houses built by the corporation, and that it was precisely for the poorest and the most unfortunate that the houses were intended. The result was that several persons gained admittance into corporation dwellings who were poor only in manners and morals. A little experience of this sort soon brought about a reaction, and now every effort is made to secure only respectable tenants for the corporation houses. At the same time, preference is shown for a tenant who comes from one of the congested districts.

The Strand is a main street facing some of the docks. There are a few common lodging-houses in this thoroughfare and many courts behind on rising ground. The common lodging-houses are only overcrowded on Saturdays in the winter. The tramp is then driven in by stress of weather. The cottages in the courts are often overcrowded, and here and there the closets get out of order and require very frequent inspection so that the flushing cisterns should act properly. Naturally, I made a point of visiting these places, notably Neptune-court, Bargeman's-row, Jones'-court, and the neighbouring courts and alleys. Here I saw some houses built on terraces cut out of the hillside, so that the backs were close to the bare earth, which rose up perpendicularly to the height of the first floor back windows, leaving a space of only five feet between the house and the earth. Some cottages were so small that there was no room for a proper staircase, and the steps from the living-room on the ground floor to the sleeping-room above were so precipitous that they seemed more like ladders. Elsewhere there was a row of one-roomed cottages so small that the wall from the earth to the eaves of the roof was not six feet high. But they gave on to an open space and were swept on all sides by fresh air.

### *Increase in Trade, Overcrowding, and Distress.*

Swansea is fortunate in possessing a large quantity of land so that the corporation can build without having to purchase building sites. This is the more welcome, as there is a most pressing demand for houses at rents varying from 6*s.* to 7*s.* 6*d.* a week. Houses at 12*s.* 6*d.* could more easily be obtained, but this is too much for a workman, and means that he would have to divide the house with another family and then there would be overcrowding. It was some 15 years ago that a very bitter cry was raised for better housing, and after a good deal of hesitation the corporation had to undertake the work of housing. Its first experiments were not all successful. In one case the houses built were too good for the neighbourhood. Those who lived near could not pay the rent and those who lived elsewhere would not take up their quarters in such poor surroundings. So there is a slight loss on this property, but all the other schemes are self-supporting. Altogether, the town has built 207 houses and it is inviting tenders for the construction of 103 more. They are to be built in central parts of the town where they will be far more useful than those in suburbs which the workers have difficulty in reaching, especially if they are employed in the docks. Many tenants absolutely

refuse better houses for a lower price if they are at some distance from the centre. Thus we still hear of families with four and five children living in two rooms with hardly 100 cubic feet of space per head. A town councillor assured me there were 400 families thus crowded together, and mentioned the case of a man living with his wife and mother and 13 children in one room. Another family was lodged over an evil-smelling stable, and their food was always covered with flies. All this, of course, is absolutely illegal, but till many more better houses are built the law cannot be enforced. Then there comes the great difficulty of paying the rent. The fact that many industries are very prosperous does not lessen this trouble. To some extent as a consequence of the McKinley tariff the growth of trade in the closing decade of the nineteenth century was equal to only 5 per cent. But now other outlets in China, Japan, and various parts of the world have been found, so that the increase of trade during the first 10 years of this century is equal to 15 per cent. The anthracite trade also has grown. As a case in point the story is told of a laundry-woman who invested £200 30 years ago in tin-plate works; her share is now worth £40,000, the profits having been allowed to accumulate. Works started not so long ago with £10,000 are worth half a million, and all this bears very directly on the housing question, for it is these tales of gold that draw people to Swansea and account for the overcrowding. It is also a melancholy satire on our modern civilisation that where there is the most wealth there also will be found the direst poverty. Thus at Swansea, according to the *Labour Gazette*, there are more men in proportion inscribed on the distress register than in other large towns of the kingdom. To cope with this excessive unemployment the town council have at different times engaged as many workers as possible, paying them the full trade-union wage, but for only three or four days a week so as to be able to divide the work up among a greater number of applicants. By this means they kept some thousands off the poor rates. Last year the council spent £4290 in giving 12½ days' work at trade-union wages to the unemployed. Also they have introduced the fair contract clause for all contracts for public works, but the Harbour Trust is not considered a public body, so it could not be enforced there. However, it will be seen that in so far as the corporation is able to raise the scale of wages it has endeavoured to do so, and this is not merely an important but a fundamental consideration when dealing with the housing question. It is not necessary to be wealthy to have a healthy home, but there is a poverty-line below which healthy conditions become absolutely impossible. Consequently, a minimum living wage becomes an integral part of the housing question. This, it seems, is fairly well understood by the Swansea town council. It accounts for the tenderness shown towards the poor dwellers of insanitary houses. Thus, in the last annual report issued by the medical officer of health, 45 houses are reported as "permanently unfit." Of these, only three have been demolished, four closed, two are vacant, one is repaired. Seven are to be closed and the tenants are under notice to quit, but in the majority of cases nothing had been done when the report was written.

### *Gardens Converted into Slums.*

Among houses recognised as unfit and which were nevertheless to be tolerated for the time being were six houses in York-court and four houses in Dewsbury-court. These dwellings form part of a small slum area in the very heart of the town, where I at last found conditions similar to what prevails in large towns like London, Manchester, and other industrial centres not built on a mountainous site. We have here a good illustration of what did happen and what would still occur if there were no law and no authority to check private speculation. The accompanying plan shows six middle-class three-storeyed houses giving on to York-street. Behind each house there used to be a long strip of garden. When, however, the demand for workmen's cottages became very pressing it occurred to the owner of one of these houses to reduce the size of his ground-floor parlour so as to cut a passage under and through his dwelling from the street to the garden behind. Here he destroyed the healthy air-space by building six little cottages, and instead of a garden we have Rosser-court. The entrance passage is only 2 feet 9 inches wide, 7 feet high, and 28 feet long. As for the cottages, they have only 4 feet 9 inches of space in front to the garden wall of the next house. Here, fortunately, the owner did not care to follow the example of his neighbours. He did not cut a passage through his house and convert his garden into a slum. But there is next door York-court, where the covered entrance passage is 42 feet long, 7 feet high, and 2 feet 9 inches wide. The court beyond is only 8 feet wide for two rows of cottages facing each other, though they have no accessible space behind, and on one side the houses are back-to-back with those of Dewsbury-court. The smallest of these houses containing only two rooms is let for 4*s.* a week. Dewsbury-court is even worse. The entrance passage is 30 feet long, and the dimensions are the same as the other passages; but the court itself is narrower still. Though there is no air-space behind the houses, the court in front is only 4 feet wide; but in exchange for these abominable conditions one exceptionally small dwelling can be obtained for 3*s.* 6*d.* per week. The back wall of the houses of Bennett-court reaches the height of the upper windows of the front of the houses in Dewsbury-court, and thus effectively blocks out the direct rays of sunlight. Here, then, we have extreme poverty, overcrowding, insufficient ventilation indoors, and not enough air-space and light out of doors. Bennett-court is better, for, though it is also only 4 feet wide, there are no buildings on the other side of the wall that faces the houses. Obviously, all these courts should be condemned; indeed, many of the houses have been condemned, but they are still full of people simply because there is no place to which they can go. They can only afford the very lowest rent, and they are the more anxious to live near their work as there are no cheap means of communication with the outlying districts. The few tramways in Swansea make exorbitant charges; they are at least twice as dear as the London tramways, and four or five times dearer than those of Marseilles, where the most distant suburbs can be reached for the uniform charge of 10 centimes, or 1*d.* The Marseilles system is the true system to prevent congestion. Those who live close to the centre have to pay just as much as those whose homes are five or six miles away in the open country, and in either case it is only 1*d.*

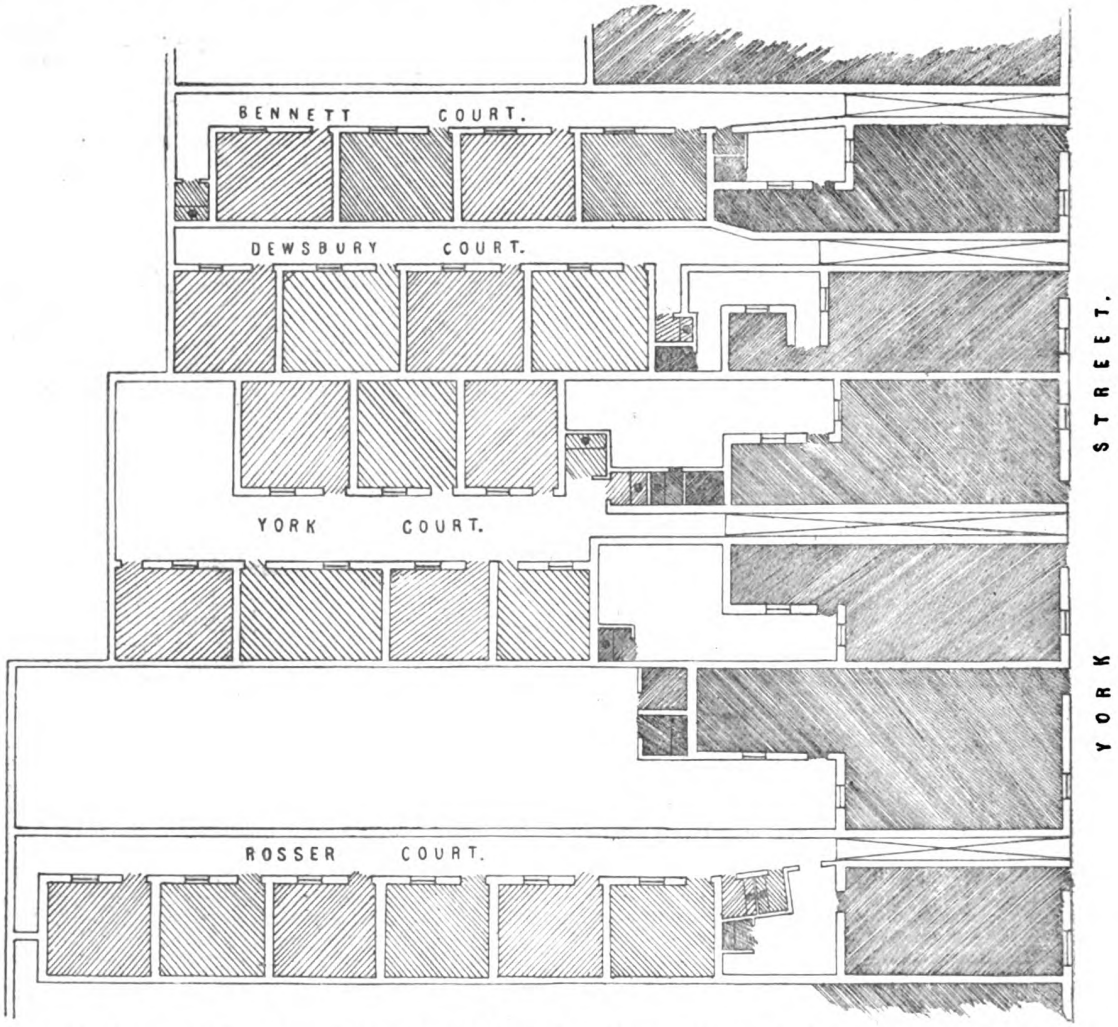
### *Slumming in Swansea.*

After this York-street area, perhaps Tontine-court and Swan-court, its immediate neighbours, have acquired the worst reputation. The trouble here is also due to the fact that the houses are back-to-back and that other cottages have been built in the backyards, thus materially reducing the space behind. But these houses are only one storey high and the air and sunlight can reach them, and they are much better exposed in this respect than the tenements in the backyards of old houses six and seven storeys high in Edinburgh or Glasgow. Some of these miserable dwellings were kept very clean. One back room in Tontine-court was occupied at a rent of 2*s.* a week by a single and aged woman. It was a small room, but quite big enough for one person. Everything was very clean, and there was a cosy, comfortable look about the place with its bright fire on one side, the neat bed on the other side, half concealed by the open door. The chairs, table, and knick-knacks were all well cleaned and shining brightly with the glow from the abundant supply of coal piled up in the grate. What would the Parisian poor give for such a fire and for a room of that size rented at only 2*s.* a week. They have to pay £2 a ton for coal, wood is much dearer, and the Paris winter is much colder than the winter at Swansea. Nevertheless, the sanitary authorities are quite justified in proclaiming as "permanently unfit" five houses in Tontine-court and four houses in Swan-court; though after visiting these dwellings I also think that the inhabitants may as well be left in quiet occupation till such time as there are better houses available.

From these two courts I went to many poor, wretched places, including the blood-red, sinister-looking little houses of Green-row, where the pavement is as dilapidated as the appearance of the poor out-of-work women who loiter about upon it. One or two houses have actually been closed in this street, while close at hand back-to-back houses were abolished in Green Hill-street. It used to be a thoroughly bad locality. The death-rate of this district for the five years ending 1902 was 31·4 per 1000. Since then several of the courts have been entirely pulled down and the district has been much improved. Still, close by, in Jockey-street, I was shown a four-roomed cottage and was told

that a man and wife and six children had been driven out of this dwelling by the sanitary authority because it was already occupied by the man's father and mother, a married daughter, her husband, and three children! Union-court, High-street, overlooks the back of the Strand houses, and here and in Crab Tree-court there are some very narrow, wretched places. The cottages, though they have but one bedroom, let at 4*s.* a week, and there are some people who have lived in them all their lives. The ceilings are low, the room dark inside, but the closets and drains are all outside, the courts are covered with concrete, kept fairly dry and clean, and, better than all, they are on the hillside, with the open sea just in front. Thus three is plenty of pure salt air conveying vigour and health to these poor slum dwellers. But the most picturesque, the smallest of all dwellings, are the little two-roomed cottages perched on the ledge of the rock in front of the old castle wall. They must be some centuries old, for no such thick walls are now built. The room upstairs is so small that it holds two beds only on condition of packing them so close together that it is difficult to pass between. The cottages are most miserable because they are so small and dilapidated. Like many other dwellings, they have been condemned, only nothing is done because there is no other place available for the inhabitants.

In conclusion to this brief contribution to the great subject of the housing problem in Wales, it should be very clearly said that the facts of the case are frankly acknowledged by the authorities. They fully recognise the overcrowding and the insanitary conditions. They have even officially condemned a considerable number of houses, but they hesitate to throw the inhabitants out into the street, knowing full well that there is no better accommodation available. Therefore more houses must be built, and this at the utmost speed. The authorities can borrow money for such purposes at 3½ per cent. interest, but private enterprise can borrow money at 4 per cent., so there is not the difference in the cost of a loan there used to be. Nevertheless, private enterprise is not dealing with the question. The owners of great ironworks have built rows of cottages for their own workmen, but these are not of general use; they will not, for instance, lodge the great number of workmen attracted by the building of the new St. Thomas dock. The corporation is almost alone in dealing with the housing problem, but how are houses to be provided at cheap enough rents, particularly as the rating, including the water-rate, amounts to about 10*s.* in the £? Most of the corporation's houses occupy beautiful healthy sites on the hill-side with magnificent views of the open sea. They have baths and better sanitation than has ever been provided before, but




*Courts, &c., in Swansea.*—Rosser-court: Entrance from York-street through covered passage 28 feet long, 7 feet high, and 2 feet 9 inches wide; court is 4 feet 9 inches wide from front of houses to garden wall of the next house in York-street. York-court: Entrance from York-street through covered passage 42 feet long, 7 feet high, and 2 feet 9 inches wide; court is 8 feet wide. Dewsbury-court: Entrance from York-street through covered passage 30 feet long, 7 feet high, and 2 feet 9 inches wide; court is 4 feet wide. Bennett-court: Entrance from York-street through covered passage 27 feet long, 7 feet high, and 2 feet 9 inches wide; court is 4 feet wide. The light shading shows how back gardens have been converted into crowded narrow courts with back-to-back houses.

workmen wearied by a day's toil object to climb up a steep hill to reach their home. A funicular railway is much needed to open out the higher ground, and thus the magnificent amphitheatre of hills that overlook Swansea and face the sea could be covered with numerous dwellings reared on an ideal site. The soil is clay loam, with more loam than clay, and is considered good building soil. 500 new houses would let at once, and therefore, it seems to me, they should be constructed without delay. Whether this is done by the corporation or by private enterprise the essential point is that it should be done at once, and that the plans and the execution of the plans should be fully controlled and approved by the sanitary authorities. Delay is the more intolerable, as this is a safe undertaking, and with ordinary prudence of management will yield at least a small profit.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*The University.*

THE Chancellor of the University, Mr. Joseph Chamberlain, has addressed a letter to the Lord Mayor, fully setting out the financial position of the University, and urging its claim for a further grant from the city council equal to a half-penny rate. The additional Treasury aid promised by the Chancellor of the Exchequer will be, to a great extent, contingent on an increased contribution from local bodies. At present the University receives the proceeds of a half-penny rate from the city which amounts to £6134; the county councils of Staffordshire and Worcestershire each contribute £500. The Chancellor's letter is still under the consideration of the city council.

*Epileptic Children in Birmingham.*

The special schools subcommittee of the Birmingham education committee has had under consideration the question of the education of epileptic children. Full inquiries have been made from the head teachers and school attendance officers with a view to ascertaining the total number of children suffering from epilepsy, either in a mild or severe form. The medical superintendent, Dr. G. A. Auden, has examined all the children whose names were received, with the result that 129 have been classified as actually suffering from epilepsy. In addition, 15 children are being maintained in residential schools fer epileptics in different parts of the country. In a report by Dr. Auden and Mrs. Pinsent the children have been divided into three main groups. Class 1 contains those needing institutional care and treatment. For these it is recommended that arrangements should be made for their education in a children's department at the Monyhull Colony, near King's Heath, under powers to be conferred by the Poor-law clauses of the Greater Birmingham Bill. There are 48 children in this class, of whom 15 are already in residential schools for epileptics. Class 2 consists—1. Of children in whom mental defect is combined with epilepsy, and for whom training in a day school is possible for the present. It is recommended that these should be admitted to the special schools for the mentally defective as soon as possible. It is proposed to provide at each of the three special schools a specially constructed couch on which the children can be removed from the class-rooms, and also a moveable screen to surround it, so that children may lie down when having a fit and recovering from its effects. The number of children in this class is 42, 23 of whom already attend special day schools. 2. Epileptic children who are only capable of being trained in residential schools for the mentally defective. These the subcommittee recommends shall, when the Greater Birmingham Bill has passed, be included in the number of cases of mentally defective children for whose provision at Monyhull the board of guardians and the education committee are already trying to arrange. 3. Those whose degree of defect renders imbecile asylum treatment and training advisable. It is proposed to add these cases to the list of idiots and imbeciles already kept and to confer with the guardians and the asylums committee as to the desirability of making further provision. The number of children in this class is 55. Class 3. Epileptic children suitable for attendance at ordinary elementary schools—i.e., those who have had but one or two fits, and who should be kept under observation, and those whose history and condition show that cure is highly probable. The subcommittee has recommended the elementary education committee to ask the medical superintendent to devise a scheme, whereby he will receive a report on these children and if necessary re-examine them at least every six months (or more frequently if desirable). The number of children so classified is 39.

*Health of Handsworth.*

The medical officer of health of Handsworth (Dr. W. Sisam) has presented a preliminary report to the health committee on the vital statistics for 1910. The birth-rate was 19·4 per 1000, the death-rate 8·8, and the zymotic death-rate 0·30 per 1000, all these being the lowest figures on record. The infantile mortality equalled 79 per 1000 births, this also constituting a record for the district. For the first time no death from diphtheria was recorded, and for the first time since 1875 no death from measles. Scarlet fever in a mild form was prevalent, but on the whole 1910 was decidedly the healthiest year ever experienced in Handsworth.

Feb. 6th.

## NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

*Report of the Medical Officer of the County of Durham on the Prevention of Pulmonary Consumption, with Special Reference to Sanatorium Treatment.*

Dr. T. Eustace Hill, the county medical officer, has prepared a report on the above subject for the county council of Durham. After dealing briefly with the causes of phthisis and the modes of infection, he passes on to a consideration of the mortality in the county, where the deaths from phthisis annually exceed 800, and those from other forms of tuberculosis number at least 600, and he estimates that there are certainly more than 4000 persons in the county suffering from tuberculosis of the lungs. He gives tables to show a decline in the mortality from phthisis since 1892 of over 40 per cent., though there has not been so marked a fall in the deaths from other forms of tubercle which especially affect young children. He considers that the replacement of breast-feeding of infants by artificial feeding is responsible for the continued height of the infantile mortality, in view of the opportunities for infection by the milk of tuberculous cows. He points out that the marked decline in the general mortality has not been occasioned by any special measures taken to combat the disease, but is rather the result of generally improved hygienic measures in the way of sanitation, drainage, lighting, ventilation, &c., and also increasing temperance and greater attention to personal hygiene. Passing on to direct measures in the way of sanatorium treatment, he considers that while such measures have done good it must be admitted that the percentage of patients so treated who have been permanently cured is not so large as was at first expected—for two reasons, firstly, many were suffering from too advanced disease, and secondly because of the inability or unwillingness of the patients to continue the sanatorium habits when they reached home. He, nevertheless, has a great belief in the educational value of such institutions, and is of the opinion that the establishment of a county sanatorium for the treatment of curable cases is desirable, but the selection of such cases will be difficult unless the notification of phthisis is made compulsory. Voluntary notification had been tried in some parts of the county for some years, and is practically useless, and he therefore advocates compulsory notification, and believes that the intelligent use of such information would be of great value and should entail no hardships on the individual, because it "enables friendly supervision to be exercised over the patients, early selection to be made of cases suitable for sanatorium treatment, precautionary measures to be taken in infected dwellings against the spread of the disease, and the dissemination of suitable literature in the proper quarters, and frequently it results in the detection of early cases in the families of notified cases, which otherwise would escape notification until the disease had become too advanced to be cured." His report becomes very interesting when he deals with the practical difficulties of the establishment of a county sanatorium. There are two ways of doing this: firstly, by the

district sanitary authorities combining under the Act of 1875; and secondly, by the county council constituting the county, or part of the county, as a hospital district under the Isolation Hospitals Act. To the former of the two methods there are practical difficulties, and it appears to Dr. Hill that the cost of erecting and furnishing such a sanatorium should be a charge on the county rate. But legal opinion has been taken that the constitution of the whole of the county as a hospital district for phthisis is not legally practicable, because certain districts have already been constituted hospital districts for certain infectious diseases, and there is no power to include such districts in a larger hospital district for other purposes. So that several urban districts (with a population of 145,000) could not be included, and, moreover, the non-county boroughs (with a population of 180,000) could not also be included save with the consent of their corporations. So that unless some mutual agreement could be made with the local authorities a population of about 330,000 out of a total or 900,000 would not be able to participate in the scheme. He thinks, however, that the majority of local authorities might be induced to join, and a conference of county, borough, and district representatives is advocated. The cost of establishing such a sanatorium of 100 beds (50 permanent and 50 temporary) he estimates might be a charge on the county rate of less than 1*d.* in the £, or if the money were borrowed over 30 years at 3½ per cent. the charge on the rate would be less than one-twentieth of a penny. The estimated cost of maintaining the institution is about £6500 yearly, and for this sum the district authorities would be responsible. The way to deal with advanced cases he emphasises as specially important. In the case of those having Poor-law relief provision should be made by the guardians, especially when it is remembered that in the majority of such cases the necessity for relief has been occasioned by the infection of the breadwinner of the family. The isolation of such patients is necessary for the public health, and the expense ought reasonably to be borne by the district. He points out that at present in two districts in Durham the small-pox hospitals are being utilised for tuberculosis, and thinks that more use might be made of such buildings. Other points to be specially noted in the report are the method of following up notified cases and their families by the medical officers and the sanitary inspectors, when in conjunction with the medical attendant the determination is come to with regard to those cases suitable for sanatorium treatment. A practitioner suggested to Dr. Hill that in each village or town one or two houses might be obtained and furnished reasonably, so that consumptives returning from sanatoriums might be able to continue such treatment, and this is a matter well worth consideration. Finally, Dr. Hill urges the need for more legislation to deal with the inspection of cows and dairies and greater supervision over the sale of milk. The conclusions of an interesting report are: (1) Sanatorium treatment for suitable cases; (2) provision of accommodation for advanced cases which are a danger to public health; (3) compulsory notification of cases of tuberculosis of the lungs; (4) an adequate staff to supervise and assist the patients and to deal with sanitary defects; (5) provision of houses for returned sanatorium cases; and (6) prevention of the sale of milk from tuberculous cows.

*Clinical Society, Newcastle-on-Tyne.*

On Jan. 25th Dr. J. S. Risien Russell delivered the annual address to the society, choosing as his subject "Important Problems in the Diagnosis of Diseases of the Nervous System." The meeting was well attended. In the evening the annual dinner took place, the President, Dr. E. Napier Burnett, being in the chair to preside over a company of 110. The President proposed the health of "The Guest," suitably replied to by Dr. Risien Russell; Dr. Byrom Bramwell, who as an old Newcastle medical man met with a great reception, proposed "The Clinical Society," which was replied to by the honorary treasurer, Dr. D. Wells Patterson; while the third toast, that of "The Visitors," was in the hands of Sir Thomas Oliver, and responded to by Mr. W. H. Hadow, Mus. Doc., the Principal of the Armstrong College, Newcastle-on-Tyne, who dealt in a racy fashion with the medical profession as viewed through the eyes of a layman.——On Feb. 2nd the usual ordinary meeting of the society was held. The early part of the evening was devoted to an exhibition of and discussion on pathological specimens shown, and later Dr. C. O. Hawthorne of London read a paper on the Interpretation of Some Blood Pressure and Pulse Tracings. There were some 40 members present. At the conclusion Dr. David Drummond joined in the discussion and moved a vote of thanks to Dr. Hawthorne, which was duly carried amid applause.

Feb. 6th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Presentation to Emeritus Professor John Chiene, C.B.*

THE presentation to Professor John Chiene, C.B., of his portrait by Mr. Fiddes Watt, A.R.S.A., took place on Jan. 31st in the hall of the Royal College of Surgeons, Principal Sir William Turner, K.C.B., presiding. Among the large gathering of Professor Chiene's friends were Lord Stormonth Darling, Sir J. H. A. Macdonald, Lord Ardwall, Lord Salvesen, Professor Sir Thomas Fraser, Sir Alexander Christison, Sir Alexander R. Simpson, Sir James Russell, Professor Sir Ludovic Grant, Bart., with other members of the Senatus of the University and of the medical and legal professions in Edinburgh. The secretaries of the presentation committee were Mr. L. A. Guthrie and Mr. David, Wallace, C.M.G. Mr. Guthrie said that there were 393 subscribers to the presentation, the total amount collected from many parts of the world, being £724 5*s.* 6*d.* Many letters had been received from Professor Chiene's friends, especially from old students, expressing the esteem and affection in which he was held. Sir William Turner announced that after the artist had received his fee a sum of money remained which it was proposed to hand to the University to provide a "Chiene medal," accompanied by a cheque, for excellence in surgery. Lord Ardwall, in making the presentation, spoke appreciatively of Professor Chiene's work as a teacher in the Edinburgh School of Medicine. His lectures were marked by originality, enthusiasm, and a good deal of pawky Scottish humour. Professor Chiene had been the first in this country to institute a bacteriological laboratory in connexion with a chair of surgery. As a surgeon his name was inseparably connected with the revolution in surgery introduced by Lord Lister, whose right-hand man he became. He distinguished himself by his services in South Africa, services which had been properly, if not adequately, rewarded with a Companionship of the Bath. They hoped he would accept the picture as a token of their esteem for him as a distinguished surgeon, a great teacher, and a true and trusted friend. Sir William Turner said he had known Professor Chiene 51 years, and he corroborated the sentiments Lord Ardwall had expressed. Professor Chiene, in his own name and that of his wife, thanked all his friends for the honour they had done him. He referred to his student days and to the good fortune he had had as a young man in the friends he had made, mentioning especially John Goodsir, Peter Guthrie Tait, and John Brown. Goodsir had sent him to Syme, who introduced him to Lister. A vote of thanks was given to the artist, Mr. Fiddes Watt, for the excellent portrait, which is three-quarter length and a characteristic likeness of Professor Chiene, who is represented holding in his hand the portfolio which he was accustomed to carry when going to and from the University.

*Plague in Manchuria and Scottish Missionaries.*

News by cable has been received in Edinburgh of the death from plague in Moukden, Manchuria, of Arthur Frame Jackson, B.C., M.B. Cantab., a missionary of the United Free Church of Scotland. Dr. Jackson, who held the diploma of the Liverpool School of Tropical Medicine, was appointed in 1910 as a medical missionary to Moukden to assist Mr. D. Christie in his scheme of establishing a medical college in that city. His personal character and professional abilities justified the highest expectations as to his future work.

*Death of a Military Surgeon in Edinburgh.*

The death occurred at his residence in Edinburgh, on Jan. 23rd, of Brigadier-Surgeon-Lieutenant-Colonel David Renton, A.M.S., in his seventy-fourth year. Colonel Renton was educated at Loretto School and at Edinburgh University. When 24 years of age he joined the 15th Hussars. After serving five years in India he took part in 1879 in the

Zulu war, for which he received a medal. He also served in the Transvaal war in the "eighties." On retiring from active service in 1888 he became barrister-at-law of the Inner Temple. He is survived by his widow, two sons, and three daughters.

*Inter-Universities Conference at Perth.*

On Jan. 31st representatives of the general councils of the four Scottish universities met at Perth to consider the reform of the preliminary examinations of the Scottish universities. They recommended that the preliminary examination in science should be made the same as that for arts, and that in the case of medicine the standard of entrance should be raised to that of arts and science as soon as practicable. It was further agreed to recommend that a new entrance board be constituted instead of the present joint board.

*Death of Dr. William Patrick.*

The death of Dr. William Patrick, who has been in practice in the East-end of Glasgow for the past 49 years, occurred last week at his residence in the Bridgeton district of the city. Dr. Patrick was born in Bridgeton, and in that district he practised throughout his life. He started as a Licentiate of the Faculty of Physicians and Surgeons, Glasgow, but a few years later he graduated as M.D. at the University of his native city. Throughout his life he was keenly interested in medical affairs and took an active part in various medical societies. He held the appointment of certifying factory surgeon for the south-eastern district of Glasgow, a Government appointment in which he took great interest, for it brought him into contact with many employees, by whom he was held in the highest esteem, while he was concerned largely with the health of young workers, for whose welfare he was solicitous. His fatal illness developed rapidly, for his last appearance in public was at the dinner to Sir David C. McVail so recently as Jan. 20th. Both in the profession and in the city at large Dr. Patrick's death has given rise to a sense of widespread loss and regret. He leaves a widow, five daughters, and two sons who are members of the medical profession.

*North of England Graduates of Glasgow University.*

The annual dinner of the North of England Glasgow University Club was held at Newcastle a few days ago. Dr. James Drummond (South Shields) presided, and the guests of the evening were the Rev. George Adam Smith, Principal of Aberdeen University, and Dr. C. O. Hawthorne, London. Dr. Samson Gemmell, Professor of Medicine at the University of Glasgow, was unable to be present in consequence of a chill.

*Treatment of Sick Poor.*

The quarterly meeting of the Association of Inspectors of Poor for the Counties of Aberdeen, Kincardine, and Banff was held on Jan. 28th, when the report, noted below, on the treatment of sick poor was considered. The parishes represented by the association had been asked for a statement regarding the following remarks in the report of the Royal Commission on the Poor Laws (p. 260):—

> When we realise that outside Glasgow, the Poor Law accommodation for the sick poor is nowhere anything but the general mixed poorhouse, which was never intended to serve as an hospital ..... it is difficult to believe that we are speaking of a civilised country in the twentieth century.

Sixty-six years ago it seems to have been recognised that the poorhouse should concern itself with the sick poor, for the statute reads—

> And be it enacted that in all cases in which poorhouses shall be erected or enlarged or altered, under the provisions of this Act, there shall be proper and sufficient arrangements made for dispensing and supplying medicines to the sick poor (Poor Law Act, 1846, Section 66).

But, disregarding any real or seeming discrepancy between the two extracts, it was thought that, leaving out of the question the facts of the case 66 years ago and taking rather into consideration what is now the best thing for the sick poor, it would be useful if the association were to inquire whether the statement made in the report of the Royal Commission is a fair and true statement, or whether, in other words, it is the case that no parish in Scotland, excepting Glasgow, has any accommodation for its sick poor outside the poorhouse. With this in view, therefore, the following questions were sent to the different parishes:—

1. Have you a local or district hospital to which sick poor chargeable to the parish can be sent, or are they sent to the Royal Infirmary when they cannot be treated in their own homes?
2. If a local or district hospital, name and situation?
3. Have your outside poor the services of a district nurse?
4. Is it usual when your registered poor are sick to send them to the poorhouse?

One hundred parishes were communicated with, and most of them have replied to the queries as follows: 1. 45 parishes sent their sick poor to the Royal Infirmaries in Aberdeen and Montrose when they could not be treated in their own homes, parish council patients being received in the former institution at 3*s.* per day; 14 parishes arranged for their sick in their own homes or by boarding them out and providing nursing; 15 parishes had suitably equipped local hospitals of their own, while a further number had specially provided sick accommodation within the parish. 2. Of the local hospitals good examples are: Chalmers' Hospital, Banff; Turner Memorial Hospital, Keith; Huntly Jubilee Hospital; Rose-Innes Cottage Hospital, Aberchirder; and the Thomas Walker Hospital, Fraserburgh. These freely admit all classes, and the board of management of some of them is largely composed of parish council members. 3. 34 parishes have district nurses for their sick poor. 4. 74 parishes never send their sick to a poorhouse; 10 state that on rare occasions they have sent cases to the sick wards of a poorhouse, mostly chronic cases which could neither be benefited by hospital treatment nor be nursed at home, and 8 parishes state that they provided for their sick in the poorhouse hospital at Oldmill, Aberdeen, which was an excellent hospital with dispensary, although connected with the poorhouse. The only question now left to dispose of is as to whether institutions such as are recommended by the Commission would be preferable in point of treatment, &c., to institutions such as the Aberdeen Royal Infirmary, the answer to which seems self-evident. With regard to the smaller local hospitals, those are generally regarded with exceptional favour by the poor, as all classes make use of them without distinction, and in general the arrangements made by the different parishes for their sick seem perfectly adequate.

*Elginshire Medical Officership.*

The Secondary Education Committee of Elginshire has decided that the medical officer of the county shall, in addition to his other work, undertake the duties of inspecting the school children throughout the county. The salary for the combined duties, as proposed, is £550.

*Death of Dr. William Mackintosh at Montrose.*

Dr. William Mackintosh, who last summer retired from Stirling, where he had been in practice for 20 years, and took up residence near Montrose, was discovered dead in his bath on Jan. 28th. Heart failure was the cause of death. Dr. Mackintosh was 55 years of age, and leaves a widow and three children.

Feb. 7th.

## IRELAND.

**(FROM OUR OWN CORRESPONDENTS.)**

*Alleged Bribery at a Medical Election.*

ON Feb. 3rd the Court of King's Bench granted a conditional order of *mandamus* on the motion of the Local Government Board directed against the Scariff guardians, compelling them to proceed to the election of a dispensary medical officer of the Annacarriga district. The facts as stated by counsel, supported by an affidavit of the Secretary of the Local Government Board, were that on August 9th last there was an election for a medical officer for the Annacarriga dispensary district in the Scariff Union. There were two candidates, Mr. John Holmes and Mr. Henry M'Keogh. Mr. Holmes was elected by a majority of 48 votes to 20. Mr. M'Keogh applied to the Local Government Board to hold a sworn inquiry as to charges of bribery and corruption on the part of Mr. Holmes, the successful candidate. Sir J. Acheson M'Cullagh, the Local Government Board inspector, held an inquiry in Killaloe, and on consideration of the evidence the Local Government Board was of opinion that bribery was practised in connexion with the election on behalf of Mr. John Holmes with his full knowledge and authority; and thereupon the Board decided that it would not approve of his appointment. After further meetings and inquiries, the Local Government Board wrote on Nov. 12th still declining to sanction Mr. Holmes's appointment. At a meeting on Nov. 29th, the guardians considered

the attitude of the Local Government Board, and Mr. Holmes's solicitor appeared at the meeting and stated that the guardians should continue Mr. Holmes in office. A resolution was passed asking the Local Government Board to state its grounds of objection, and when this was done the letter of the Local Government Board was marked "read." On a subsequent letter being received from the Local Government Board stating that it would have to apply for a mandamus, Mr. Holmes offered to indemnify the guardians against any costs, in the event of the Local Government Board taking steps to enforce the terms of its letter. Instructions were given to have the necessary guarantee executed. The guardians had not appointed, and refused to appoint, a medical officer pursuant to the statute.

*Payment of Substitute for Infirmary Surgeon.*

On Feb. 1st the Court of King's Bench gave judgment regarding the liability of a county infirmary committee for the payment of a locum-tenent for the surgeon of the institution. Mr. N. Mayne, surgeon to the County Longford Infirmary, was obliged to attend the winter sessions of 1908 on a subpœna from the Crown. He appointed a substitute for the week of his absence, paying him a fee of 5 guineas, which he subsequently claimed from the committee. The latter repudiated responsibility and was sued by Mr. Mayne, the case causing an appeal to the King's Bench. No evidence was adduced as to usage or terms of appointment as regarded payment of a substitute. The court unanimously dismissed the case. It would appear as if the question had never arisen before in the case of an infirmary surgeon. In the Poor-law service a medical officer is considered to be disabled for duty by attendance on a subpœna, and his substitute is paid by the guardians, who in some cases are permitted to deduct the fee from the medical officer's salary.

*Mortality and Disease in Dublin.*

The death-rate in the city of Dublin for the week ending Jan. 28th, omitting the deaths in public institutions of persons admitted from without the city, reached the alarming figure of 29·4 per 1000 of the population. Of the total of 177 deaths, 26 were of infants under one year of age; 9 deaths were due to whooping-cough and 13 to pneumonia. There is a great deal of zymotic disease in the city at present, chiefly scarlet fever, diphtheria, and enteric fever.

*Irish Medical Schools and Graduates' Association and the Recent Action against Mr. Charles Ryall.*

The council of the Irish Medical Schools and Graduates' Association have taken the earliest opportunity of congratulating Mr. Charles Ryall, F.R.C.S. Eng., on the result of the recent trial. Referring to its triumphant issue for him they add:—

> We further desire to assure him that the complete vindication of his action in the case, the evidence in which only served to show the surgical skill that he displayed in saving his patient's life, has given this council much gratification, confirming the high esteem in which he is held by his professional brethren generally.

*Diphtheria in Dundalk.*

There has been a serious outbreak of diphtheria in Dundalk in the past few months. No less than 98 persons have been attacked, with fatal results in 12 cases.

*Royal Sanitary Institute Congress.*

At a meeting, held in the City Hall, Belfast, on Jan. 31st, a local committee was appointed to make the necessary arrangements for the reception of the Congress in July, with the Lord Mayor as chairman, Mr. H. J. Johns, J.P., city treasurer, as honorary local treasurer, and Mr. H. W. Bailie (medical officer of health), Mr. James Munce (assistant city surveyor), and Mr. J. G. Harris (assistant town clerk) as honorary secretaries.

*Health of Belfast.*

At the monthly meeting of the corporation held on Feb. 1st it was reported that between Dec. 18th, 1910, and Jan. 14th, 1911, there had been notified 130 cases of infectious diseases—i.e., 1 of typhus fever, 2 of typhoid fever, 87 of scarlet fever, 2 of puerperal fever, 25 of diphtheria, 1 of membranous croup, and 14 of erysipelas. 53 cases of pulmonary tuberculosis have also been notified. The satisfactory point about these returns is the fact that the number of cases of infectious disease notified is somewhat smaller than in the preceding four weeks (130 as against 170), though it is larger than in the corresponding four weeks of 1910 (105), this diminution applying to all the infectious diseases, the decrease being greatest in the case of scarlet fever (87 cases as compared with 119 in the preceding month), and it is specially gratifying to see the decrease in typhoid fever. As to pulmonary tuberculosis, there is a decrease as compared with the preceding month as well as the similar period of 1910, the numbers being respectively 53, 64, and 69. On the other hand, it must be remembered that the notification in four weeks of 87 cases of scarlet fever shows that the epidemic which has prevailed for such an unusually long period is still with us, and that—like the recent epidemics of measles and whooping-cough—it is simply wearing itself out, as similar outbreaks do in Belfast, because it has exhausted itself on all the susceptible patients for the time being. The large number of cases of pulmonary tuberculosis notified (53) also indicates how much has still to be done to cope with this most terrible disease. The death-rate was from all causes 16·4, while it was 6·0 from chest affections, and 0·4 from zymotic diseases.

*Newry Water-Supply.*

Newry, a leading town in the north of Ireland, is in anything but a satisfactory condition in regard to the very foundation of hygiene—its water-supply. At a meeting of the urban council of that place, held on Feb. 6th, the water caretaker reported that there was no water in the reservoir when he inspected it that morning. In the discussion which followed it came out that in some parts of Newry last week there had been no water for four days. The people at the high levels of the town had hardly any water, and at the Rathfriland Hill Hospital there had been no water for several days, a very serious matter in an institution of that kind. The surveyor thought there was a waste of water somewhere, and he proposed to look for the leakage. It was finally decided to send notices to householders cautioning them not to waste the water, and to postpone the inspection of the pipes until it was seen what action the Camlough water trustees would take regarding the installation of a water-meter. Surely it is high time that in a town of over 12,000 inhabitants steps were taken to secure a constant supply of pure water.

Feb. 7th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Radiography and Radioscopy of the Stomach.*

AT a meeting of the Société Médicale des Hôpitaux held on Jan. 20th M. Aubourg showed a number of radiographic representations of the stomach in various pathological conditions, such as air-swallowing, cancer of the orifices and the margins, ulceration, gastroptosis, and biloculation; these pictures had been taken in the course of radioscopic examinations made for the purpose of settling some typical detail or supplementing the clinical history. M. Aubourg said that rapid radiography and radioscopy were not to be regarded as essentially different methods of observation; they were, in fact, complementary to each other, and at the present day sketches of the radioscopic appearances were advantageously replaced by radiographic pictures which in their exactness and in the minuteness of their detail surpassed the fugitive images seen on the fluorescent screen. The interpretation of these pictures, however, required very great attention, a point which was exemplified by a case of biloculation of the stomach of which M. Aubourg gave particulars and showed five radiographic pictures taken at different periods of digestion. He said that examination of only one picture might have led to an error in diagnosis, but the exaggerated length of the peristaltic movement, the indentation of the sacculi, the presence of intestine between the pylorus and the liver, and the important symptom that the evacuation of the stomach was so slow as to be perceptible in the ninth hour of digestion, led to the diagnosis of biloculation. The radiological examination of the stomach should include not only the observation of its behaviour when food was introduced, but more especially the manner in which, and the time when it emptied itself, for these points were of great importance when there was a possibility of stenosis or biloculation.

*Actinomycosis.*

At a meeting of the Academy of Medicine held on Jan. 17th M. Schwartz described a case of actinomycosis in which the exciting cause of the lesion was found in contact with the diseased part. The patient was a man, 71 years of age, who suffered from a swollen condition of the left cheek. Six months previously, when sleeping on grass, he had felt a pricking sensation at the place, but supposed that it was caused by an insect. After this there was a swelling which increased from day to day, and he consulted M. Schwartz, who excised the swelling on the supposition that it was a sebaceous cyst. It contained a thick yellowish liquid, in which yellow granules and a portion of an ear of corn were found, and the diagnosis of actinomycosis was confirmed by means of the microscope.

*Treatment of Retroflexions of the Uterus.*

At a meeting of the Society of Paris Surgeons held on Jan. 13th M. Cazin said that all retroflexions of the uterus ought to be treated when the menopause was not due to occur for a considerable time. He had employed in succession Alexander's operation, hysteropexy, and the intraparietal fixation of the ligaments of Doléris. He preferred the method last mentioned, for it possessed the advantages of both hysteropexy and Alexander's operation without their inconveniences.

*Treatment of Enteritis in Suckling Infants.*

Speaking at the Biological Society on Jan. 21st M. Pierre Bonnier described seven cases of intestinal disorder, including enteritis, green diarrhœa, and athrepsia occurring in infants aged from 1 to 10 months. In every instance all, or the majority, of these symptoms disappeared in 24 hours after very gentle galvano-cauterisation of the inferior turbinated bones. The recovery of the functional equilibrium of the bulbar digestive centres resembled by its mode of action and its rapidity the effect produced on the respiratory centres by affusion on the cutaneous area of the trigeminus nerve in cases of asphyxia.

*Antityphoid Vaccination.*

A valuable report by Dr. Vincent on the subject of antityphoid vaccination occupied a great part of the meeting of the Academy of Medicine held on Jan. 24th. He said that up to the present time the antityphoid vaccines which had been most employed were bacterial vaccines—i.e., cultures of Eberth's bacilli killed by heat. In the course of years more than 100,000 persons had been successfully inoculated in the British, German, and American armies, more especially in the colonies to which troops were sent and in which typhoid fever was very common. Although antityphoid vaccination did not prevent the evolution of the disease in individuals who had become infected it greatly lessened the number of attacks, and those who fell ill suffered much less severely than unvaccinated persons. A single inoculation was not so protective as two or three inoculations. The duration of the immunity that was conferred appeared to be from one to four years. Whatever kind of vaccine was employed, the inoculation had always been found free from danger to the multitude of persons on whom it had been performed. Antityphoid inoculation would be very useful in the French army and navy, especially in Algeria, in Tunis, and in the colonies. It ought not to be performed except on perfectly healthy persons, free from any internal disease, and especially from tuberculosis. Except in cases of absolute necessity it was not advisable to inoculate debilitated or constitutionally delicate persons, for in them the reaction was liable to be too severe. It must also be remembered that for a period varying from one to three weeks after inoculation a person's vital resistance to the infection of typhoid fever was sometimes diminished, so that there might be, in fact, a temporary predisposition to contract the disease. Although this predisposition might be of little importance, there was reason to believe that the vaccinations ought not to be performed either in presence of an epidemic or on persons known to have been exposed to the infection of the disease within the previous three weeks. All newly inoculated persons ought to take the most careful precautions against infection with Eberth's bacillus; inoculation ought therefore to be absolutely forbidden in the case of those who had a prospect of an attack or were actually in the early stage of the disease. When the military or naval forces were being sent to places free from typhoid fever the inoculations might be performed on their arrival, but if the disease was either endemic or epidemic at the places in question the inoculations ought to be performed at least three weeks before arrival. In conclusion, Dr. Vincent said that antityphoid inoculation was to be recommended as a rational means of notably diminishing the frequency and the severity of typhoid fever.

*Removal of Foreign Bodies from the Bronchi and Œsophagus.*

At a meeting of the Société de Médecine de Paris held on Jan. 28th M. Guisez reported 21 cases in which foreign bodies had been extracted from the bronchi and œsophagus by broncho-œsophagoscopy during the year 1910. Among the objects removed from the bronchi were a fully opened penknife swallowed by a child aged 4 years, and a portion of a bone of a rabbit swallowed by a child aged 11 months. They were removed through the natural passages.

Feb. 6th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*The Treatment of Progressive Paralysis of the Insane by Injections of Tuberculin.*

MUCH interest has been aroused lately by a preliminary report on the results obtained in one of our lunatic asylums by the injection of tuberculin in cases of progressive paralysis of the insane, and at a recent meeting of the Gesellschaft der Aerzte Dr. Pilcz, the director of the great asylum "Am Steinhof," read a paper on this subject. He said that the observations have been going on in the asylums here since Wagner in 1899 noticed that temporary remissions occurred in the condition of lunatics after an intercurrent febrile disease, such as erysipelas or septicæmia. Dr. Pilcz has had an opportunity of making investigations on two groups of paralytics, each numbering 100 cases and taken as they came, without any selection as regards the age of the patient or the duration of the mental symptoms. The treatment consisted in injecting Professor Koch's "old tuberculin" until a definite febrile reaction was obtained, and this was persisted in for several months. The result was that out of the group treated in that manner a smaller number died, and a larger number of cases were still alive and in a satisfactory condition after five years than out of the other group. Some of the patients were even able to resume their occupation. Dr. Pilcz subsequently selected 96 cases of recent progressive paralysis of the insane, and to each of these patients there was given a dose of at least 1-1000th of a milligramme of tuberculin in glycerine and sterilised water, the solution consisting of 1 part of Koch's old tuberculin, 4 parts of glycerine, and 5 parts of distilled water. The amounts of tuberculin were increased until, according to the reaction, doses rising from 2 centigrammes up to 50 centigrammes (from one-third of a grain up to 8 grains) were reached. This treatment was combined with antisyphilitic medication and small doses of thyroid substance. Out of 86 cases, whose history could be traced for years, the following results were known: 34 patients were not at all influenced, only short intermissions having occurred; in 20 cases the progress of the disease was arrested, but no objective improvement was observable; 9 patients were enabled to return to society, but not to earn their living; 23 patients of the total number resumed their occupation, and, with regard to their bodily and mental condition, they must be considered as having practically recovered. In no case did the inequality of the pupils disappear, but a large number of patients became well enough to make observations on the course of their disease. Dr. Pilcz said that there was very little, if any, danger of the injections producing acute tuberculosis; the post-mortem examinations never showed such a condition, and, as a rule, tuberculosis was hardly ever responsible for the death of this class of patients. If the physical examination showed a suspicious condition of the lungs the injections ought to be made with the utmost care. He did not wish to claim that the favourable results would be permanent, although some patients had remained in good health for over four years. At any rate, whether the recoveries were permanent or not, a mitigation of the disease for even a year or so must be regarded as sufficient to justify the treatment.

*Cysticercus of the Brain.*

At one of the last meetings of the Medical Society of

Vienna some cases and specimens were shown which illustrated the necessity of keeping in mind the possibility of the presence of a cysticercus in examining patients affected with cerebral disease. One of the cases was a man, aged 35 years, suffering from vertigo and nausea, with symptoms of old disease of the middle ear on both sides. The presence of vertical nystagmus confirmed the diagnosis of a centrally situated pathological condition. A diagnosis of cerebellar abscess was made, when suddenly all the symptoms disappeared, but returned after some time only to disappear again soon. A radical mastoid operation was, nevertheless, performed with exploratory investigation in the posterior cerebral fossa. No pus was found, but the man died suddenly. At the post-mortem examination a cysticercus of the fourth ventricle was found, which had caused an enormous fluid distension by occluding the foramen of Majendie. In another case the symptoms pointed to a tumour of the pons. The blood showed no abnormality and lumbar puncture gave a negative result. During the operation the patient died, and the post-mortem examination revealed a large cysticercus which had pressed upon the pontine region, causing various symptoms of tumour of the pons, such as deafness, tinnitus, papillœdema, and headache with dizziness. Of recent years such cases have been found occasionally in the otological clinics, for the aural symptoms predominated, or at least the symptoms were considered to originate in the ear, and in this way the patients were brought under the care of otologists before a physician saw them.

*Voluntary Production of Remarkable Bodily Abnormalities.*

A most unusual instance of the production of bodily abnormalities by means of auto-suggestion was shown by Dr. Hertz at a recent meeting of the Gesellschaft der Aerzte, the patient being a man who possessed such an extraordinary control over his physical organisation that he was even capable of voluntarily changing the position and size of his heart. He could reduce the frequency of its beats from 80 to 50 per minute, and he could bring it either into the right half of the thorax or into the middle line by suggesting to himself (1) that he was going too fast, or (2) that his left lung was collapsed. He could produce at will hyperæmia and swelling of any small area of the skin by auto-suggestion merely by impressing on his mind the belief that he had burnt himself at that spot. In addition to simultaneously dilating one of his pupils and contracting the other, he was able to produce contraction of several of his voluntary muscles one at a time, including the biceps, the triceps, the platysma myoides, the rectus abdominis, and the obliquus externus. He could also induce cutis anserina by voluntary excitation of the erectores pilorum muscles. His appearance was truly remarkable when he made a simultaneous display of his various accomplishments.

Feb. 6th.

## NEW YORK.

**(FROM OUR OWN CORRESPONDENT.)**

*Opium Smuggling.*

A SENSATION has been caused by a Federal police raid on six Chinese shops in cheap neighbourhoods of New York, conducted ostensibly for the sale of tea and Oriental curios only, and the seizure therein of an immense quantity of opium, prepared for smoking, which had been smuggled. Letters were found implicating the police officials of several large Western cities by demonstrating friendly relations with a notorious Chinaman long suspected of smuggling, not only opium, but Chinese themselves. Opium prepared for smoking looks very much like the common solid extract, but it is only about half the strength of the latter. It is sold in lychee nuts, replacing the kernel, which has been deftly removed. It is said that there are over 100,000 white smokers of opium in the United States, but these are all recruited from the criminal class, petty gamblers, and the like. Indulgence in the habit consumes from four to seven hours daily, and is, therefore, not likely to become the vice of persons employed in any legitimate occupation. The importance of the raid lies in the letters seized along with the opium, several of which, it is said, refer to the murderer of Elsie Sigel, a young white girl teacher in Chinese Sunday schools, whose body was found concealed in a trunk in the Chinese quarter some months ago. The singular attraction which the Chinese exert on religiously minded young women of a certain type is worthy the attention of psychiatrists.

*The Child's Welfare Exhibition.*

An exhibition of what is being done for the children of New York opened in one of the large National Guard armouries on Jan. 18th, and will remain open till Feb. 12th. Admission is free except on two days of the week, when a charge of 1*s.* is made, and visitors from all classes of society may be found there in thousands at all times. Charts, photographs, and models of various kinds line the walls, while an open space in the centre is given up to folk dancing, school drills, and gymnastic exhibitions by public school children. Moving pictures show similar performances in foreign lands. Perhaps the most popular section is that showing typical homes of the New York poor. A three-room flat is shown furnished at an expense of £20. On one side of this there is a model nursery and playroom for a large family of children. Another playroom for two children is furnished entirely with articles home-made from packing-cases, the expense being supposed to be *nil* save for paint, screws, &c. Clothing suitable for an entire family living on an income of £160 is one of the exhibits. Toys have been made a subject of scientific study, and a toyshop filled with toys approved by experts shows the ethical and educational value of properly selected playthings. Two boys are at work showing how serviceable toys may be made at home with a fret saw and pocket-knife. Hundreds of pictures show children playing in the streets and demonstrate the dangers of impure candy, cheap shows, dance halls, and heavy traffic. The work of the Board of Education is fully illustrated, from the duties of the visiting physician and nurse to the cooking-schools, shop work, and kindergartens. Actual children's libraries are shown and a librarian advises as to what books a child should read. The department of laws and administration has collected data as to the workings of all the children's courts in the country, most of them superior to the children's court of New York. The committee on work and wages emphasises painfully the heavy penalty the child pays in body and soul in return for the low money wage given for his work. What is being done for the care of needy children at home and abroad is illustrated. Modern scientific care of defective children is represented, especially the work among feeble-minded, epileptic, deaf, dumb, and blind. There is a model orphan asylum on the cottage plan as the best substitute for the home. As people in all these models are represented by artistically and suitably dressed dolls, the attention of children is easily involved and they become eager to make more than one visit to the exhibition, and to bring their little friends and their parents. Other departments illustrate the work of social settlements in their efforts to furnish social centres in the congested districts. and to supplant dangerous gangs and back-room clubs, while in one corner the work of the churches, temples, and Sunday schools of all denominations is demonstrated. In a small theatre under the armoury frequent popular lectures are given by well-known authorities. A completely equipped dental establishment shows the hope of dentists to establish compulsory dental examination of all school children with possible free treatment. A laboratory shows how to pasteurise milk.

*Two Recent City Ordinances.*

The Board of Aldermen has passed a law forbidding the wearing by women of hatpins the points of which project more than one inch beyond the brim of the hat, unless the points are protected by some rounded metal device. There have been many serious wounds of the cheek and eye in the crowded trains of the subway and elevated road.——The sale of raw milk is now forbidden within the city, and all dealers must equip their bottling plants with the requisite apparatus for pasteurisation. There are three grades of milk allowed: "infant's feeding," which may be sold at a considerable premium; "drinking milk," which must be of known origin, but not necessarily of the highest percentage of fats; and "cooking milk," which will be all that of dubious pedigree, or from dairies concerning which the health authorities have doubts.

*Non-Poisonous Matches.*

One of the largest match manufacturing corporations has

voluntarily abandoned the use of phosphorus and has declined to patent the process for the use of the "sesquisulphide process," which will allow its use by all other match companies. This action was due to the direct influence of the President. Great interest has been excited in Canada by this fact, and a Bill has been introduced into the Dominion Parliament forbidding the manufacture or importation of phosphorus matches. The Bill is being bitterly opposed by Canadian manufacturers.

*The Case of Margaret Shipley.*

At Mackeesport, Penn., a young girl, blind from birth, went into an apparent trance under the influence of religious excitement on Jan. 24th. She promised to awake on the 31st with her vision restored. The awaking occurred but not the hoped-for miracle. Visitors to the afflicted child have been numbered literally by the scores of thousands, many of them loud-voiced believers, and the spectacle around the patient's house has recalled the stories of similar sights in the Middle Ages. The child's parents were apparent believers and had made arrangements in order to found a brand-new religion on Jan. 31st. Despite the disappointment of the devout, there is strong belief among many of a mere postponement of the manifestation of some supernatural power.

*Conflict between Federal and State Law.*

The law in the State of New York against the sale of cocaine is very severe and pretty generally observed. A physician who was treating a patient for the cocaine habit found that the latter was getting his supplies from New Hampshire, and appealed to the Federal authorities to arrest the shippers. A reply from the Government official stated his regret that no law prevented the sending of cocaine through the mails, which are under exclusive Federal control. The State of New York thus finds itself powerless to enforce its own prohibition against the sale of cocaine, since the sale is made outside its boundaries. No State can pass any law affecting the post office.

Jan. 31st.

# Obituary.

## CALEB BARRETT, F.R.C.S. ENG., L.S.A. LOND.

Mr. Caleb Barrett died recently at his residence, Henry-street, Bath, at the age of 90 years.

He received his medical education at King's College Hospital, London, and qualified as L.S.A. Lond. in 1844. In 1858 he passed the examination for the F.R.C.S. Eng. Mr. Barrett, in the early part of his career, was in practice at Gloucester, where he was surgeon to the infirmary and also to the Children's Hospital. He afterwards went to Bath, where he practised for many years. He was medical officer to the Southern Dispensary in that city, and for a considerable time medical officer to the Abbey and Weston districts of the Bath Union, but he resigned these appointments in 1899, and shortly afterwards retired from active work. His wife predeceased him a few years ago. Mr. Barrett was highly respected in Bath, and by his death that city loses one of her oldest and most esteemed medical practitioners.

## JUSTIN THEODORE VULLIAMY, M.R.C.S. ENG., L.R.C.P. LOND.

IT is with much regret that we record the unexpected death of Mr. Justin Theodore Vulliamy, which took place at his residence in Rugby on Jan. 23rd, in his forty-second year.

Mr. Vulliamy was the eldest son of Mr. Theodore Vulliamy of Ware, and was born at Nonancourt, in the department of the Eure in Normandy, France, and passed his early boyhood in the pleasant scenery which characterises that district. He there acquired the thorough knowledge of French which proved so useful to him in after life. His education was continued at Uppingham School and afterwards at St. Thomas's Hospital Medical School, where he was a dresser in the surgical wards to Mr. Bernard Pitts. He did not take any special part in the sessional examinations, but devoted himself to acquiring a good general knowledge of his profession from the practical side, and gained the esteem of those with whom he was associated for his steady devotion to duty of every kind. In 1897 he obtained the qualifications of the Conjoint Board in London, and became M.R.C.S. Eng. and L.R.C.P. Lond.

For a time he acted as one of the resident medical officers to the Royal Free Hospital. He then became house physician to the Hospital for Consumption and Diseases of the Chest, Brompton; house surgeon to the French Hospital; and assistant house surgeon to the Lincoln County Hospital. Some ten years ago he joined Messrs. Simpson and Relton in their practice at Rugby, and soon made himself known as an enthusiast in his desire to advance the general knowledge of the public in all matters concerning hygiene and public health. He gave lectures on nursing, hygiene, and ambulance duty for the Midland Counties Educational Union, and became surgeon to the Rugby Provident Dispensary. A few months ago he was appointed an assistant surgeon to the Rugby Hospital, and was perhaps happier in this appointment than in any other, for his previous training had well fitted him for dealing with the more important surgical and operative work which came to him. He was essentially a man devoted to his profession, and never refused to obey the call of duty, however great the personal inconvenience of so doing. "Duty" always came first—indeed, it is very probable that this intense and somewhat over-anxious devotion to his work undermined his health and rendered him less able to withstand the attack of influenzal pneumonia which so quickly proved fatal. The large and representative attendance at the memorial service in Rugby proved the esteem in which he was held by all who knew him. Three years ago he married Dora, daughter of Mr. Dunbar Kilburn of Gloucester-square, London.

## FREDERICK WILLIAM PEARCE JAGO, M.B. LOND., M.R.C.S., L.S.A.

Mr. F. W. P. Jago died at his residence, Lynher House, St. Germans, Cornwall, on Feb. 1st, at the advanced age of 93 years. The deceased, who belonged to an old Cornish family, received his medical education at the London Hospital. He graduated as M.B. Lond. in 1848, and in the same year obtained the M.R.C.S. Eng. and L.S.A. qualifications. He shortly afterwards went to Plymouth, where he practised his profession for 50 years. He was highly esteemed in the "Three Towns," and at one time had an extensive practice. He contributed several articles to the medical journals. He took a great interest in all matters connected with Cornwall, and was the author of "The Ancient Language and the Dialect of Cornwall," and the compiler of an "English-Cornish Dictionary." About 12 years ago Mr. Jago left Plymouth and took up his residence at St. Germans. The deceased was a staunch member of the Church of England, and up to the end took a great interest in all Church matters. He leaves a daughter, who has been for a long time his devoted and faithful companion.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Juan R. Fernandez, a distinguished member of the Medical Faculty of the Buenos Aires University, at the age of 50. He was born in Corrientes and studied medicine in Buenos Aires and in Paris. In 1890 he was appointed professor of midwifery and afterwards dean of the Faculty of Buenos Aires. During the presidency of General Roca he was Minister of Public Education, and to him many important improvements are due, including the school for midwives, of which he himself acted as director for a time, the Morgue, the National Institute of Secondary Teachers, the Normal School of Living Languages, and the Palace of Justice.—Dr. von Gussmann of Stuttgart, director of the Medical and Sanitary Department of the Würtemberg Government, aged 70.—Dr. Degen, chief medical officer of the Fürth Municipal Hospital, whose name is well known in connexion with the Social Democrat Party. He was 70 years of age.

The Hon. W. F. D. Smith, chairman of the King's College Hospital Removal Fund, has most generously promised to pay the cost of building one of the central ward blocks of the new hospital, which, it is estimated, will cost £30,000.

# Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Düsseldorf (Academy of Practical Medicine):* Dr. Christian Bruhn has been recognised as *privat-docent* of Odontology.—*Kiel:* Dr. Adam Bauereisen, who followed his chief, Professor Stoeckel, from Marburg, has been recognised as *privat-docent* in Gynæcology.—*Naples:* Dr. Michelangelo Cipolla has been recognised as *privat-docent* of Dermatology.—*Palermo:* Dr. Gaetano Lodato has been promoted to the chair of Ophthalmology.—*Philadelphia (University of Pennsylvania):* Dr. Milton B. Hartzell has been appointed to the chair of Dermatology, in succession to Dr. Louis A. Duhring, resigned.—*Prague (German University):* As successor to Dr. Gad, the professor of physiology, who is about to retire, the name of Dr. F. B. Hoffmann, professor in Innsbruck, is mentioned.—*Rome:* Dr. Francesco Pulvizenti has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Sassari:* Dr. Andrea Pietri has been recognised as *privat-docent* of Surgery.—*Tübingen:* Dr. C. Brodmann has been recognised as *privat-docent* of Neurology and Psychiatry.

DONATIONS AND BEQUESTS.—Mr. Harold Nickols has given £10,000 to the Lord Mayor of Leeds' Fund for the General Infirmary in memory of King Edward VII.—Among the latest contributions received at the Bank of England for King Edward's Hospital Fund for London are the following annual subscriptions: Mr. Walter Morrison, £5000; Mr. William Waldorf Astor, £1000.—The late Rev. Montague Earle Welby left by will £2500 to the Middlesex Hospital and £2500 to the Lock Hospital and Rescue Home.

ESPERANTO AND MEDICINE.—At the Hampden Club Debating Society on Feb. 6th Mr. Kenneth W. Millican, B.A. Cantab., M.R.C.S. Eng., gave an address on Esperanto, in which he pointed out the great need for a common language at medical congresses and the loss to medical progress which resulted from the failure to establish a common means of intercommunication. Important discoveries were sometimes made by medical men abroad and recorded in a language not understood by the medical world as a whole. Much valuable information might thus be lost and only rediscovered after lapse of time.

THE SECOND INTERNATIONAL CONGRESS OF UROLOGY.—This congress will be held in London from July 24th to 28th, 1911. At the meeting of the First International Congress, held in Paris on Oct. 1st, 1908, Mr. E. Hurry Fenwick was chosen as the president of the Second International Congress, and Professor A. Koranyi of Budapest and Professor A. Pousson of Bordeaux were elected vice-presidents. The questions to be discussed at the forthcoming congress are: (1) Phosphaturia and Oxaluria, reported by M. Hogge (Liège), M. Péchère (Brussels), M. Richter (Berlin), and M. Teissier (Lyons); (2) Late Results of Prostatectomy, by Dr. Hugh Young (Baltimore, U.S.A.), Señor Regino Gonzales (Mexico), and Professor Zuckerkandl (Vienna); (3) Extensive Removals of the Bladder Wall, by Mr. Hurry Fenwick (London), Signore Giordano (Venice), and Herre Rovsing (Copenhagen). Mr. John Pardoe, 77, Wimpole-street, London, W., is the secretary of the congress.

VAGRANTS AND THE WAY-TICKET SYSTEM.—The county of Sussex has for some years played an important part in dealing with vagrants, and by means of its way- and food-ticket system has been rewarded with considerable success in reducing the number of vagrants relieved at the various unions. The system provides assistance for the genuine workman in search of employment and tends to decrease the number of professional beggars and habitual vagrants. Any scheme that succeeds in driving the professional tramp class off the roads is deserving of success, but it is only by coöperating between boards of guardians that this end can be secured. The professional tramp, for whom not a good word can be said, and the habitual vagrant, who more often than not tramps the country dragging with him his wife and many children, will then quickly find out the districts where the treatment meted out to them is very different to that which greets the genuine workman in search of work, and in those districts the professionals will become few and far between. The ne'er-do-wells will be driven to the taskwork imposed by the casual laws from which the genuine workman "on the road" will be exempted as he is under the way-ticket system.

Lord Charles Beresford will preside at the annual dinner of the London School of Clinical Medicine to be held at Princes Restaurant on Friday, March 24th.

THE Amiens School of Medicine and Pharmacy has been closed owing to the frequent disorders which have recently occurred there. It is stated that during a lecture a student fired ten revolver shots in the hall, the bullets going through the ceiling.

PRESENTATION TO A MEDICAL MAN.—On Feb. 2nd Dr. Andrew Elliot, who has just retired from the office of honorary medical registrar at the West London Hospital, was presented, on the occasion of his marriage, with a silver tray by some past and present members of the hospital staff.

LITERARY INTELLIGENCE.—Messrs. W. B. Saunders Company announce the publication of "The Collected Papers by Drs. W. J. and C. H. Mayo and their Associates at St. Mary's Hospital, Rochester, U.S.A." The papers are illustrated with original drawings showing the pathology and histology of the conditions considered and the technique employed in treatment.

## BOOKS, ETC., RECEIVED.

ALLMAN AND SON, LIMITED, 67, New Oxford-street, London, W.C.

Home Nursing. By E. Margery Homersham. Price 3*d*.

BAILLIÈRE, J. B., ET FILS, Paris.

Traité Pratique de Pathologie Exotique, Clinique et Thérapeutique. Publié en Fascicules sous la Direction de MM. Ch. Grall et A. Clarac. II. Parapaludisme et Fièvres des Pays Chauds. Par Paul Gouzien, Hébrard, Ch. Grall, Camail, Thiroux, Mathis, Leger, Galde, Lebœuf, Thibault. Price, paper, Fr.10; in boards, Fr.11.50.

Nouveau Traité de Chirurgie Clinique et Opératoire. Publié en Fascicules sous la Direction de A. Le Dentu et Pierre Delbet. X. Maladies des Nerfs. Par Bernard Cunéo (Paris). Price, paper, Fr.4; in boards, Fr.5.50.

CONSTABLE AND CO., LIMITED, London.

Man's Redemption of Man. A Lay Sermon, McEwan Hall, Edinburgh, Sunday, July 2nd, 1910. By William Osler. Price 1*s*. net.

CHURCHILL, J. AND A., London.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XXX., Session 1909-1910. With List of Officers, Members, &c. Price 12*s*. 6*d*. net.

Guy's Hospital Reports. Edited by F. J. Steward, M.S., and Herbert French, M.D. Vol. LXIV., being Vol. XLIX. of the Third Series. MDCCCCX. Price not stated.

FOOD AND COOKERY PUBLISHING AGENCY, 329, Vauxhall Bridge-road, London, S.W.

The Cookery Annual for 1911 and Year Book of the Universal Cookery and Food Association. 17th Year of Issue. Founded and edited by C. Herman Senn, G.C.A., A.I.J. Price 1*s*.

GOVERNMENT PRINTING OFFICE, Washington.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XV. S.—Skin-Grafting. 1910. Price not stated.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

Micro-organisms and Fermentation. By Alfred Jörgensen, Director of the Laboratory for the Physiology and Technology of Fermentation, Copenhagen. Translated by S. H. Davies, M.Sc. Fourth edition, completely revised. Price 15*s*. net.

HIRSCHWALD, AUGUST, Berlin.

Die Erkrankungen des Herzbeutels und ihre Behandlung. Von Dr. Franz Sinnhuber. (Königsberg i. Pr.) Price M.3.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, New York.

Three Contributions to the Sexual Theory. By Prof. Sigmund Freud, LL.D. Vienna. Authorised Translation. By A. A. Brill, Ph.B., M.D., Clinical Assistant, Department of Psychiatry and Neurology, Columbia University. With Introduction by James J. Putnam, M.D. Price $2.00.

KARGER, S., Berlin.

Jahrbuch für Kinderheilkunde und Physische Erziehung. Unter Redaktion von O. Heubner, Th. Escherich, A. Czerny. 73 der dritten Folge 23. Band. Heft I, Ausgegeben am 5 Januar, 1911.

KÜNDIG, LIBRAIRE, 11, Corraterie, Genève. STEINHEIL, G., Paris.

Précis d'Obstétrique Opératoire. En deux Parties. Première Partie, 1909. Deuxième Partie, 1910. Par Dr. R. de Seigneux, Professeur à la Faculté de Médecine de l'Université de Genève. Price not stated.

LAURIE, T. WERNER, London.

The Cathedrals of Northern France. By T. Francis Bumpus. Price 6s. net.

Pam the Fiddler. A Tale of the Rising Brooks. By Halliwell Sutcliffe. Price 6s.

Self and the Other. By Victoria Cross. Price 6s.

LAYTON, CHARLES AND EDWIN, 56, Farringdon-street, London, E.C.

Handy Newspaper List, 1911. Price 6d.

MALOINE, LIBRAIRE MÉDICALE, Paris.

Le Village-Sanatorium. Contribution à l'Étude des Sanatoria Populaires. Par Henri G. Richter, Architecte, Paris. 1910. Price Fr.3.

MARHOLD, CARL, Verlagsbuchhandlung, Halle a.S.

Deutsche Heil- und Pflegeanstalten für Psychischkranke in Wort und Bild. Redigiert von Dr. Johannes Bresler. Price, half-bound, M.28.

Klinik für psychische und nervöse Krankheiten. Herausgegeben von Robert Sommer, Dr. med. et phil., o. Professor an der Universität Giessen. V. Band. 4 Heft. Price, pro Heft, M.3.; pro Band, M.12.

MASSON ET CIE, Paris. GAUTHIER-VILLARS, Paris.

Le Processus Éberthien. (Qu'est-ce que la Fièvre Typhoïde?). Par Victor Audibert, Professeur suppléant de Clinique Médicale a l'École de Médecine de Marseille. Price, paper, Fr.2.50; in boards, Fr.3.

MITTLER, ERNST SIEGFRIED, UND SOHN, Kochstrasse, 68-71, Berlin.

Medizinal-Berichte über die Deutschen Schutzgebiete. Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, Neu-Guinea, Karolinen, Marshall-Inseln und Samoa, für das Jahr, 1908-09. Herausgegeben vom Reichs-Kolonialamt. Price M.9.; bound, M.10.

RICHARDS, GRANT, LIMITED, 7, Carlton-street, London.

The Birds of the British Islands. By Charles Stonham, C.M.G., F.R.C.S., F.Z.S. With Illustrations by Lilian M. Medland, F.Z.S. In Twenty Parts. Part XVII. Price 7s. 6d. net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BARGE, H. F., has been appointed Dental House Surgeon to Guy's Hospital.

BREWIS, R. ADAMS, M.D. Edin., has been appointed Medical Officer of Health for the Dursley Rural District Council.

DIGHTON, CHARLES ADAIR, M.B., F.R.C.S. Edin., has been appointed Honorary Assistant Surgeon to the Eye and Ear Hospital, Myrtle-street, Liverpool.

FINCH, G., M.R.C.S., D.P.H., has been appointed Assistant School Medical Officer to the East Sussex County Council.

GLOVER, F. S., has been appointed Dental House Surgeon to Guy's Hospital.

HAILES, CLEMENTS, M.D., F.R.C.S. Edin., has been appointed Consulting Surgeon to the Bristol Eye Hospital.

MCGRATH, MATHEW J., M.B., B.Ch., B.A.O. R.U.I., has been appointed Assistant Medical Officer at Brislington House Private Asylum, near Bristol.

MOISER, LIONEL HENRY, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Crediton (Devon) Urban District Council.

OGILVY, ALEXANDER, M.D. Dub., F.R.C.S. Irel., has been appointed Surgeon to the Bristol Eye Hospital.

STOCK, WILLIAM S. V., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Anæsthetist to the Bristol Eye Hospital.

WOTTON, W. H., has been appointed Dental House Surgeon to Guy's Hospital.

WRIGHT, ANDREW J. M., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Rhinologist to the Bristol Eye Hospital.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BIRMINGHAM CORPORATION CITY HOSPITAL, Lodge-road.—Assistant Resident Medical Officer. Salary £120 per annum, with board, residence, &c.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £90 per annum, with apartments, board, and attendance.

BURSLEM, HAYWOOD HOSPITAL.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and laundry.

CHELTENHAM EYE, EAR, AND THROAT FREE HOSPITAL.—House Surgeon. Salary £200 per annum.

CROYDON, COUNTY BOROUGH OF.—Assistant Medical Officer. Salary £250 per annum.

DARTFORD UNION WORKHOUSE AND CHILDREN'S HOME. — Medical Officer. Salary £150 per annum.

DISTRICTS OF NESTING AND LUNNASTING, PARISH OF NESTING, &C.—Medical Officer. Salary £50 per annum.

EDINBURGH ROYAL INFIRMARY.—Superintendent. Salary £600 per annum, with house, coal, and light.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £110 per annum, with apartments, rations, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITALS.—Surgeon to Out-patients.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Resident Medical Superintendent. Salary 100 guineas per annum, with board and residence. Also Anæsthetist. Salary £15 15s. per annum.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 40, Grove End-road, London, N.W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments. Also Honorary Physician.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

LEEDS UNION, Beckett-street.—Assistant Medical Officer (female), unmarried. Salary £100 per annum, with board, washing, apartments, and attendance.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Three House Surgeons for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LLANYBYTHER, CARMARTHENSHIRE, WEST WALES SANATORIUM.—Medical Superintendent. Salary £250 per annum, with board and residence.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160 per annum.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY AND THE UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Assistant to Professor of Pathology. Salary £150 per annum.

NEWCASTLE-UPON-TYNE UNION WORKHOUSE. — Assistant Resident Medical Officer, unmarried. Salary at rate of £150 per annum, with apartments, rations, and washing.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Lecturer on Physiology. Salary £200 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NOTTINGHAM WORKHOUSE INFIRMARY. — Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

RANSOM SANATORIUM FOR CONSUMPTIVES, Sherwood Forest, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Three Clinical Assistants.

ST. PETER'S HOSPITAL FOR STONE, &C., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £70 per annum, with board and apartments.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST-END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street, W.—Clinical Assistants. Also Clinical Pathologist for six months. Salary at rate of £50 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Honorary Medical Registrar. Also Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL. — House Physician.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for the County Courts of Croydon and Epsom.

# Births, Marriages, and Deaths.

## BIRTHS.

ARKLE.—On Dec. 21st, 1910, at Dugan-street, Kalgoorlie, Western Australia, the wife of J. Vere Arkle, F.R.C.S. Eng., of a son.

DINGLE.—On Feb. 4th, at Tyn-y-coed, Barmouth, N. Wales, the wife of Harry Dingle, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

LOW.—On Friday, Feb. 3rd, at 146, Harley-street, W., the wife of V. Warren Low, M.D., F.R.C.S., of a daughter.

STEDMAN.—On Jan. 26th, at Southwold-road, Upper Clapton, N.E., the wife of Savignac Bell Stedman, M.R.C.S., L.R.C.P., of Norwood, Ceylon, of a daughter.

## DEATHS.

HODGSON.—On Feb. 3rd, suddenly, Gerald George Hodgson, M.R.C.S. Eng., L.S.A., aged 50 years.

SILVER.—On Jan. 26th, at the Old Rectory, Sutton-at-Hone, Kent, Ebenezer David Silver, M.D. Aberd., I.M.S., aged 91 years.

***N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.***

# Notes, Short Comments, and Answers to Correspondents.

## AMERICAN FOOTBALL.

*To the Editor of* THE LANCET.

SIR,—The late visit of the United States battle fleet was probably the first occasion on which American football has been played by American teams in England. The verdict of the spectators was unhesitating. Even as a spectacle, once the novelty was gone, the game was vastly inferior to good Rugby Union play, whilst as a contest of skill, and particularly as a contest of true sportsmanship, it compared even worse. It has other and, I think, graver disadvantages. Despite the inauguration of what is known as "new football" in 1905, football continues to claim a great number of victims from amongst the finest athletes of the nation. In 1906 Dr. Coughlin, in the *Medical Record*, N.Y., summarised the football casualty list for the preceding year, and found that at least 26 deaths were directly due to football. Dr. Coughlin's list included the following cases of fatal injuries in 1905:—

| | |
|---|---|
| Abdominal injuries ... ... ... ... ... ... ... | 7 |
| Fracture of skull ... ... ... ... ... ... ... | 5 |
| Concussion of brain ... ... ... ... ... ... ... | 5 |
| Fracture of spine ... ... ... ... ... ... ... | 1 |
| Dislocation of spine with paralysis ... ... ... ... | 3 |
| Cerebral hæmorrhage ... ... ... ... ... ... | 2 |
| Acute peritonitis ... ... ... ... ... ... ... | 1 |
| Fracture of rib, broken end being driven into the heart ... | 2 |

In 1906 the *Chicago Tribune* found that football had caused 11 deaths and 103 cases of serious injury. In 1907 there were also 11 deaths and 97 cases of serious injury. The *New York American* has summarised the next three seasons, and the figures as quoted by Dr. Clurman in the *Medical Record* are as follows: in 1908 there were 13 deaths and 84 serious non-fatal injuries; in 1909 33 deaths and 216 injuries, 73 of which were classified as serious; in 1910 there were 19 deaths and 400 injuries not classified.

In addition, Professor James of Illinois has stated that "nearly all football players have weak hearts and are more liable to diseases of other forms than men who exercise moderately." English Rugby has the great disadvantage of leaving many of its devotees with weakened knees and shoulders, a serious fault scarcely sufficiently appreciated, but compared with these American records its history is as the white flower of a blameless life. The Minotaur of Knossos achieved his unenviable reputation by devouring each year seven Athenian youths and maids, but this demoralising and brutal game far exceeds him in its yearly sacrifice of life and health in America of the present day.

The spirit of commercialism threatens English Rugby, and English football is not free to-day from other blemishes. There is too much of the spirit which causes 30,000 spectators to watch paid and professional players do battle for their respective limited liability companies. Football tends to degenerate, even here, from a game into a gladiatorial spectacle. Rough play and semi-intentional fouls are far too common.

Let us read aright the lessons of these American figures and set our own house in order, although it may seem somewhat cleaner than our neighbour's.

I am, Sir, yours faithfully,

Feb. 4th, 1911. SPORTSMAN.

## BOY SCOUTS AND THE PREVENTION OF TUBERCULOSIS.

WE have before had occasion to notice *The Boy Scouts (Baden Powell's) Head Quarters Gazette*, the magazine of an organisation that is undoubtedly doing much to implant in the youth of the coming generation the spirit of discipline, of self-help, of loyalty, the love of nature, and the love of country—qualities that in the past made England great, and must be reanimated if England is to remain so. The December issue shows also that from a purely sociological point of view the organisation can be used to further many desirable movements, about the expediency of which there can be no division of opinion. It contains an article entitled "A Great National Work for Scoutmasters," which lays down some sensible lines on which the Scout movement can become active for good in the fight against consumption by spreading the knowledge of the germ doctrine, of nose breathing, ventilation, cleanliness, sterilisation, the avoidance of spitting, and of the practice of forethought by insurance at a low premium. Consideration for others is impressed by instructions to stop the bands on such occasions as the following: when passing hospitals or churches during service, in streets after dark when children are in bed, or in which there is illness, and on meeting nervous horses.

## DR. GRENFELL'S WORK IN LABRADOR.

THE unostentatious but valuable services of Dr. Wilfred T. Grenfell to civilisation in Labrador have several times received mention in these columns, but his presence in England on a brief but well-earned vacation again calls attention to his work. Since 1893, when Dr. Grenfell began his medical missionary work with a 90-ton sailing vessel in Labrador, with all the attendant difficulties of an enormous coast-line poorly charted, inclement weather, and a widely scattered population, great progress has been made. The severities of isolation have been mitigated by the establishment of a chain of centres, with four hospitals, five resident medical officers, and a staff of lady nurses; while poverty has been ameliorated by the introduction of coöperative stores and the replacement of barter by a cash system, and by the introduction of lumbering, weaving, clay-moulding, peat-cutting, and farming, as useful and remunerative occupations during what used formerly to be periods of enforced idleness. An effort is being made to replace the enormous number of dogs, which have hitherto been necessary for winter driving, by reindeer. This will render more practicable the introduction of cattle. On the whole, Labrador is healthy, much like Norway, but the insanitary habits of the people in their dwellings afford conditions suitable for the spread of tuberculosis, which is rife among the people, notwithstanding their outdoor life. A large institute is now being erected as a correcting influence to the saloons. Dr. Grenfell's work is of the eminently practical kind, and the medical profession has reason to congratulate itself that so much good administrative work is being done by one of its members.

## ENCEINTE.

*To the Editor of* THE LANCET.

SIR,—All the French etymologists I have read (Littré, Brachet, Scheler, Pourret, Landais, Laveaux, Gattel) say *incincta*, or *non cincta*. Scheler, however, discusses that origin and refers to the Spanish: *estar en cinta*, to be double; and to the Italian: *incignere*, *encenher*, to make big. French has *grosse*, *engrosser*, *enceinturer*, to make pregnant. But against "Blancus's" opinion for *cloister* we must note that *in*, in Latin, if it means without, means also inside, wherefrom comes the *substantive enceinte*, that which encloses (*enceinte* applied to a woman is an *adjective*). Ménage, in his "Dictionnaire Etymologique," derives the word from *inciens*.

Besides, I would remark that the child, not the woman, is "*cloistered*." Moreover, the old engravings, for instance, the engraving to be found in "Hebammen Buch" of J. Rueff, Frankfort, 1583, called "La Visite à la Sage-femme," represents the woman without a girdle.

I am, Sir, yours faithfully,

Geneva, Jan. 19th, 1911. A. CORDES.

## HEALTH MATTERS IN JAMAICA.

A REPORT by the Governor, Sir Sydney Olivier, K.C.M.G., on the Blue-book of the colony for the year ended March 31st, 1910, has been received at the Colonial Office and ordered to be presented to Parliament. In the section devoted to vital statistics the estimated population is set down at 862,422—421,056 males and 441,366 females. The number of marriages during the year was 3543, the rate (4·1) per 1000 of population the same as in the previous year, and corresponding with the average prevailing during the five years preceding the earthquake of Jan. 14th, 1907. The abnormal rates of 1907-08 (7·4) and 1906-07 (6·6) were due to the emotional effects of that calamity. The effect of the same incident on the proportion of illegitimate to legitimate births would appear to be also waning, as the percentage of illegitimate births amounts this year to 62·00, against 60·59 in 1908-09, and is approaching the average rate of 63·5 which has prevailed during the past ten years. The total births registered numbered 32,402, against 31,785 in the previous year, the rate per 1000 of estimated population being 37·8, against 37·6.

The number of deaths registered was 18,636, being 21·7 per 1000 of the estimated population, the lowest death-rate since 1902-03, when it was 19·8. In 1908-09 the rate was 22·4 and the average of the past ten years has been 23·3. There were 5657 deaths of children under one year of age. In 12,600 out of the 18,636 deaths registered the causes of death are stated, whilst 6036, or about 32·4 per cent., are returned as due to ill-defined or not specified causes. Thus in only about two out of three cases is any definite account received of the cause of death. There were medical certificates in 4134 cases, and coroners' certificates in 219; total 4353 out of 18,636, a little over 23·3 per cent. of the whole. In other cases the cause of death is stated on the authority of the registrar after such inquiries as he has thought it necessary to make. Whilst, however, more than three out of four cases of the deaths recorded are not medically certified, it is not necessary to infer that so large a proportion of these died without medical attendance. In a great number of cases a medical man is called in once or oftener during the illness, but is not applied to for a certificate of the cause of death.

The highest number of deaths attributed to any one specified cause is 1715, returned under "Convulsions," presumably almost entirely deaths of infants. The list is headed by "Fever, *undistinguished*," 3201 cases, which may be taken as meaning for the most part malaria. From malarial fever so defined only 536 deaths were reported, and of these 113 are attributed to Kingston, where returns are made with much greater accuracy than is to be found in those for other parishes. The manifest excess of this proportion confirms the view that a great many of the deaths from "undefined fever" reported elsewhere were probably cases of malarial fever. It may safely be assumed that the average of deaths from this cause was as high in the

island generally as in Kingston, which has less than one-fifteenth of the whole population. At this rate the deaths from malarial fever in the rest of the island might be estimated at 1700, or for the whole of the island, including Kingston, not less than 1800.

The next most important group is that of 1232 deaths from phthisis, of which 153 cases are returned from Kingston—a very high proportion—indicating the occupation of close and insanitary dwellings in the city.

Enteric fever is credited with 244 deaths throughout the island, of which 88 are recorded in Kingston. There can be no question that this fever is prevalent in Kingston in a higher proportion than in almost any other part of the Island, and that this is due, not to any defect of the water-supply, but to the transmission of infection by flies and possibly, to a certain extent, by milk. In addition to the returns of enteric fever, 10 deaths are reported from epidemic diarrhœa and 661 from choleraic diarrhœa and 159 from dysentery. It may be suspected that the distinction between many of these cases and those formally returned as enteric fever was not very reliable, so far as the country returns are concerned. 184 deaths (88 in Kingston) are reported as due to enteritis and to gastro-enteritis, not epidemic. Deaths from pneumonia are reported as 177, from bronchitis 110, and from Bright's disease 243. The other predominant causes of death are venereal disease 152, parasitism 134 (probably very much understated, as parasitic infection and anæmia are frequently associated with deaths reported as fever), chronic rheumatism 139, and asthma 119.

The disease known as "vomiting sickness," which breaks out in certain districts in the cold months of the year, continues to be a subject of regrettable perplexity to the medical profession. 620 deaths are attributed to what the superintending medical officer calls "the combination of diseases known popularly as vomiting sickness," and he expresses the opinion that many of these cases may be, indeed undoubtedly are, due to ackee poisoning, cassava poisoning, worms, meningitis, bronchitis, gastritis, and other more familiar diseases, but there is little doubt that, beyond these, there remains an unexplained residue which needs investigation.

The reports of the district medical officers vary in fulness, and are not all compiled from the same point of view, but the extent to which particular diseases are mentioned there may be taken as a pretty fair indication of their prevalence and of the importance attached to them by the medical officers. Thus 39 reports were received, in 32 of which reference is made to malarial fever as more or less prevalent, in 14 to yaws, in 13 to enteric fever, in 12 to venereal diseases, and in 10 to vomiting sickness. These diseases (all of which can be prevented or abated by hygienic precautions) may fairly be taken as those which are most troublesome in the community, although there is an immense amount of constitutional derangement owing to indigestion, and a considerable prevalence of phthisis and pneumonia.

## A QUEER SYMPTOM.

*To the Editor of* THE LANCET.

SIR,—With reference to my note in THE LANCET last week (p. 349), I have been giving my patient a course of valerian in the form called bornyval, so far with no benefit. The dose I gave was one "perle" containing 4 minims) three times a day until 25 had been taken; then I increased the amount to four per diem for the next six days. At the end of that time I went back to three daily. My patient has taken 3 × 25 *in toto*, and says I have "completely cured her nervousness." But I have signally failed to "cure" the one thing I hoped to—viz., the hot peppery taste in the mouth.—I am, Sir, yours faithfully,

Jan. 29th, 1911. CAPSICUM.

PS.—Bornyval is stated to be the iso-valerianic acid ester of borneol, preformed as such in the valerian root.

## INQUIRIES FOR HOMES.

As our columns testify, we are constantly receiving inquiries from our readers for homes or institutions to which crippled or mentally defective children or others may be sent. Unless these inquiries state how much per week the parent or guardian can afford to pay, and whether a temporary or permanent home is desired at that rate, very few, if any, useful answers will be received. If it is desired to make the more vague appeal to our readers, correspondents are requested to affix initials and an address to their inquiry. With every wish in the world to be helpful, the task of forwarding the very voluminous correspondence which a vague inquiry may bring to our office is one which we cannot undertake.

## A CONVENIENT EYE DIAGNOSIS CHART.

Mr. Charles A. Adair Dighton, honorary ophthalmic and aural surgeon to the Scarborough Hospital, has sent us a description of an eye diagnosis chart which has been drawn up for him by the Medical Supply Association of Gray's Inn-road, London. It combines the full history of the patient's case on the one side of the sheet, with the fees and treatment on the other, and is made so that it can be easily filed and kept for reference. The advantages of this in consultant work are obvious and the price of the sheets is moderate.

*Ignotus* (M.D.) writes that he will be glad of information as to the chances of employment in Sydney for a capable woman who has received a general and an obstetrical training and who has had large experience of private nursing. The Emigrants' Information Office, 31, Broadway, Westminster, S.W., affords a great deal of this kind of information, but some of our readers may know of a particular opening.

*Individual.*—The circumstances should be brought before the Central Midwives Board, secretary, Mr. G. W. Duncan, at Caxton House, Westminster, London, S.W. If the midwife is on the roll she can be punished by removal; if she has pretended falsely to be on the roll she can be proceeded against legally.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

**THE following Congresses, Conferences, and Exhibitions are announced for 1911:—**

**Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.**
**March 2nd–6th (Berlin).—Thirty-second Balneological Congress.**
**,, 23rd (Paris).—First Congress of French Medical Journalists.**
**,, 28th–April 25th (Tunis).—Exhibition of Hygiene.**
**April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.**
**,, 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.**
**,, 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.**
**,, 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)**
**,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.**
**,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.**
**May 30th (The Hague).—International Congress on Opium.**
**May (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)**
**May–October (Dresden).—International Hygiene Exhibition.**
**May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)**
**May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.**
**,, (Los Angeles, Cal.).—American Medical Association.**
**June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.**
**June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.**
**July (Bergen).—Seventh Norwegian Congress of Internal Medicine.**
**,, (Birmingham).—British Medical Association.**
**July 24th–28th (London).—Second International Congress of Urology.**
**,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.**
**August 15th–21st (Dublin).—Royal Institute of Public Health.**
**,, 30th–Sept. 6th (Portsmouth).—British Association.**
**August or September (Berlin).—Third International Laryngo-Rhinological Congress.**
**September (Paris).—First Congress of the International Medical Association for the Prevention of War.**
**,, (Brussels).—Exhibition of Fractures.**
**,, (Turin).—International Congress of Pathology.**
**,, (Genoa).—International Exhibition of Marine Hygiene.**
**September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.**
**Sept. 11th–13th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).**
**,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.**
**,, 18th–23rd (Sydney).—Australasian Medical Congress.**
**,, 18th–24th (Turin).—Fourth National Congress of Hygiene.**
**,, 24th–30th (Rome).—International Congress on Tuberculosis.**
**,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.**
**October (Cologne).—International Congress of Criminal Anthropology.**
**Oct. 1st–4th (Liége).—Second Congress of Alimentation.**
**Dec. 4th–9th (Havana, Cuba).—American Public Health Association.**
**(Date not fixed) (Montreal).—Canadian Medical Association.**
**(Date not fixed) (Rome).—International Exhibition of Social Hygiene.**
**(Date uncertain) (Turin).—International Exhibition of Industry and Labour.**

**In 1912:—**
**Spring (London).—Second Optical Convention.**
**July (?) (Cologne).—International Congress of Nurses.**
**September (Prague).—International Congress of Radiology and Medical Electrology.**
**September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.**
**,, Visit of German Medical Men to America.**
**Nov. 22nd–29th (Washington, D.C.).—Fifteenth Internationa Congress of Hygiene and Demography.**

**In 1913:—**
**(London).—Seventeenth International Congress of Medicine.**

(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

**The following journals, magazines, &c., have been received:**—Journal of Physiology, Journal of Pathology and Bacteriology, Phonographic Record, Allgemeine Medizinische Central Zeitung, Quinzaine Thérapeutique, Il Morgagni, Yale Medical Journal, Annales de Physicothérapie, Australasian Medical Journal, Australasian Medical Gazette, Electrical Review, Man, Derbyshire Times, The Local Government Review, The Shield, Medico-Legal Journal, Gazzetta degli Ospedali, Medical Record, New York State Medical Journal, Therapeutic Gazette, The Practitioner, Journal of the Royal Sanitary Institute, British Journal of Dental Science, St. Thomas's Hospital Gazette, Edinburgh Medical Journal, Electrical Engineer, Le Progrès Médical, Archives de Médecine et Pharmacie Navales, The Child's Guardian, Century Illustrated Monthly Magazine, Archives of Pediatrics, Gazette Médicale de Paris, Centralblatt für Allgemeine Pathologie, Clinique Infantile, Bulletins et Mémoires de la Société Médicale des Hôpitaux, Pioneer Mail, Bulletin de l'Académie de Médecine, La France Médico-Thermale, St. Bartholomew's Hospital Journal, Optician, International Hygiene, Duodecim, South African Medical Record, Albany Medical Annals, La Prensa Médical, Archives Internationales de Neurologie, La Policlinique, Bulletin, Office International d'Hygiène Publique, La Belgique Médicale, The Boston Medical and Surgical Journal, Guy's Hospital Gazette, The Nation in Arms, Mayfair, North of England Clinical Journal, Local Government Chronicle, The Medical Review, The Institution Quarterly, Inter-State Medical Journal, University College Hospital Magazine.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira), at 11, Chandos-street, W.: at 5 P.M.

Dr. H. G. Adamson: Some Cases of Unilateral Linear Pigmentary Nævus.
Dr. Graham Little: Four Cases of Pigmentary and Verrucose Nævus. And other Cases.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—H. J. Marriage, Sydney Scott), at 11, Chandos-street, W.: at 5 P.M.

*Cases and Specimens*
Will be shown by Dr. Edward Law, Dr. H. J. Davis, Mr. Sydney Scott, Dr. Jobson Horne, and others.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

Clinical Evening.
*Demonstrations:*
Dr. Schmidt: A Universal Safety and Protective Tube Stand for all Kinds of Fluoroscopy and Radioscopy.
Dr. Deane Butcher: Mr. Heinz Bauer's Qualimeter, an Instrument for Measuring the Hardness of an X Ray Tube.
Skiagrams, Specimens, &c., will be shown by Dr. Lewis Jones, Dr. Ironside Bruce, Mr. A. D. Reid, Mr. Gilbert Scott, Dr. Stanley Melville, Dr. Knox, and others.

**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—8.30 P.M., Dr. F. S. Palmer: Traumatic Neuroses and Psychoses and their Medico-legal Considerations.—Dr. W. Hill: The Treatment of Malignant Stricture of the Œsophagus with Especial Reference to Intubation and to Radium (illustrated by the epidiascope and the œsophagoscope).

**SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.**

FRIDAY.—8.30 P.M., The President (Prof. R. Ross): Some Enumerative Studies on Malaria and Sleeping Sickness.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.**

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. G. E. Smith: The History of Mummification—a Discussion of the Nature and Historical Significance of the Important Mummies and other Embalmed Bodies and the Egyptian and Nubian Anthropological and Pathological Specimens in the College Museum.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. H. G. Adamson: Clinique (Skin). 5.15 P.M., Lecture:—Mr. R. P. Rowlands: Some Complications of Gastric Ulcer and their Surgical Treatment.
TUESDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw (Liverpool): Bovine Tuberculosis in the Human Subject and its Treatment.
WEDNESDAY.—4 P.M., Mr. W. Trotter: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. E. Giles: When to Examine and What to Look for.
THURSDAY.—4 P.M., Mr. H. J. Paterson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. P. Parkinson: Acute Pneumonia in Children.
FRIDAY.—4 P.M., Mr. H. Barwell: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Wells: Angina Pectoris.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Bronchial Obstruction.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. R. Howard: Some Operations of Urgence.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture-Demonstration:—Dr. G. G. Macdonald: Recent Developments in the Diagnosis and Treatment of Syphilis.
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Dr. G. P. Chappel: Special Demonstration of Selected Medical Cases.
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Ataxy.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Diagnosis and Treatment of Epilepsy.

**CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.**

TUESDAY.—3.45 P.M., Lecture:—Mr. I. G. French: Tracheoscopy, &c.
FRIDAY.—3.45 P.M., Lecture:—Dr. W. Wingrave: Clinical Pathology.

**HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Appendicitis, Peritonitis, Abdominal Tuberculosis. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Demonstration—Dr. Poynton: Some Further Complications of Rheumatism.
FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Hernia, Intestinal Obstruction, Intussusception, &c. (Special Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Seborrhœa and Psoriasis dealt with as Stages of the same Dermatitis in Symptoms, Diagnosis, and Treatment.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. F. W. Mott: Heredity. (Lecture V.).
FRIDAY.—9 P.M., Prof. H. E. Armstrong: The Stimulation of Digestive Activity.

## OPERATIONS.

METROPOLITAN HOSPITALS.

**MONDAY (13th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY (14th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY (15th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY (16th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY (18th).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1910 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 7th, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Feb. 1 | 30·76 | E. | ... | 45 | 37 | 26 | ... | 27 | Foggy |
| ,, 2 | 30·74 | E. | ... | 40 | 40 | 27 | ... | 30 | Foggy |
| ,, 3 | 30·51 | NNE | ... | 46 | 43 | 30 | 39 | 40 | Overcast |
| ,, 4 | 30·53 | N.E. | 0·01 | 59 | 44 | 39 | 39 | 40 | Cloudy |
| ,, 5 | 30·51 | N.E. | 0·01 | 49 | 42 | 36 | 38 | 39 | Overcast |
| ,, 6 | 30·59 | N. | ... | 47 | 40 | 37 | 36 | 38 | Overcast |
| ,, 7 | 30·60 | N. | ... | 42 | 39 | 37 | 35 | 37 | Overcast |

## Communications, Letters, &c., have been received from—

**A.**—Dr. D. M. Alexander, Liverpool; Army and Navy Male Nurses' Co-operation, Lond., Hon. Secretary of; Messrs. Arnold and Sons, Lond.; Dr. J. Arreglado, Hong Kong; *The Antiseptic*, Madras, Manager of; Captain P. Atal, I.M.S., Nellore; Apollinaris Co., Lond.

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# The Hunterian Oration
ON
# JOHN HUNTER AND HIS MUSEUM.

*Delivered at the Royal College of Surgeons of England on Feb. 14th, 1911,*

BY EDMUND OWEN, D.Sc. SHEFF., F.R.C.S. ENG.,
CONSULTING SURGEON TO ST. MARY'S HOSPITAL, LONDON.

MR. PRESIDENT,—The century lacks but two years of completion when Dr. Matthew Baillie and Sir Everard Home, John Hunter's executors, in their desire to show a lasting respect to his memory, provided for the delivery of an oration on Feb. 14th, his birthday. And although one should not now expect on these occasions to hear anything fresh concerning Hunter, still we come to the familiar subject as one goes to a favourite drama or turns to some well-loved book.

Adequately to deal with the work of this many-sided man, the orator should be of philosophic mind, and well instructed in the history of surgery, and he should have a profound knowledge of plants and animals—not only in health but also in disease. It being thus beyond my reach to touch more than the fringe of Hunter's scientific work, I shall content myself with speaking of him as a man, and as the founder of a museum which is without a rival in the world. Of some men it may be said, as St. Paul disparagingly remarked of himself, that they are "born out of due time." Some, indeed, so far in advance of it, that the intellectual seed which they laboriously sow produces but a sorry crop, or lies decaying in the soil. Hunter, however, was happy in the date of his birth. Had it been delayed by, let us say, a century and a half, so that at the present time he would be approaching what the poet calls the "midway of the journey of life," he could not have attained the commanding position which, as it was, he occupied in so many branches of science. And had his birth been thus delayed, would he have chosen the philosopher's path which leads to the Temple of Wisdom? Would he have worked in the field which proved so attractive to Darwin, or in that to which Pasteur devoted his great mind? Would he have developed into a pathologist of world-wide reputation—like Billroth; would he have contented himself with being the foremost surgeon of his day, or would his thirst for collecting have triumphed over everything else? He could not filled each part. I am inclined to think that he would have given up everything in order to devote himself to biology.

John Hunter was the youngest of ten children, most of whom died early. It may have been on this account that his mother spoilt him—though *spoilt*, in this case, can hardly be the proper word. At any rate, he was allowed to have things very much his own way, his mother making him her Benjamin. It is good for no man to have things too much his own way at any time of life—least of all, at the beginning. And it might have been better for Hunter if his mother, instead of constantly giving way to him, had helped him in early life to obtain a command over his temper. For our hero was apt to be overbearing in his dealings with others, and intolerant when his wishes were thwarted. And this is made painfully evident as we come to deal with the closing years of his life. When he was about 17 he went to stay with his brother-in-law, a cabinet-maker at Glasgow, and, being very proud of the skill with which he could use his hands, he delighted to help in the workshop. And so the statement has become current that Hunter began life as a joiner, which is very far from fact.

It is apt to be set forth in the life-history of any person who has made for himself a high position in the world of science, literature, or art, that from early childhood he was seen to be in possession of unusual talent in that direction. Thus, for instance, Cimabue showed first proof of his great gift by making remarkable sketches upon his lesson-books, and it is related that certain popular preachers used to give displays of talent by fervid outbursts of oratory in the nursery or school-room—which, to the common type of man, might seem out of place or even unwholesome.

But so it was not with Hunter. He was quite an ordinary boy. To use the words of his biographer, "having little taste for books, he preferred in engaging in country sports to studying those elementary branches of knowledge which are best acquired in youth." In dwelling upon the story of his life it is a pleasure to meet with such an estimate of his character, for it supplies the needful human touch. At the time that John Hunter was getting out of his teens, his elder brother, William, was conducting with great success a private medical school in Windmill-street, Haymarket. He was a man of unrivalled talent, and though he was not connected with any hospital, had established a great reputation for himself as a teacher of anatomy and surgery. John was much interested in, and his imagination was set on fire by, the accounts which he heard of his brother, and, as has so often been the case with self-reliant and enterprising young Scotchmen, he also desired to travel along that broad and pleasant road which leads from the stern country of his birth to the Mother city of the Empire. So he wrote to William asking that he might be taken as an assistant in his dissecting-room. A favourable reply having been received, John left Scotland on horseback for London in September, 1747. Up to that time he had been looked upon as an idler. Not infrequently it happens that a boy who has not yet been put to the work for which Nature intended him, has been thus regarded, till, by a happy turn of the wheel of Fortune, he finds the occupation for which he was fitted. On arriving in London, John was at once put to work upon a dissection which was wanted for his brother's October lectures. This he did with such skill that he at once gained the entire confidence of his brother. William had been afraid that John might turn out but an idle apprentice. And though he stuck closely to his work in the dissecting-room and at the hospital, he lived outside of them a somewhat free and reckless life. Like an ordinary, human, young man, "Jack Hunter," as he was called, liked to shake off restraint at times—and he shook it off very thoroughly.

## CHESELDEN AND POTT.

It is a proof, if proof were needed, of the warm interest which William Hunter took in the shaping of his brother's career, that he obtained for him the practical teaching and the friendship of the illustrious Cheselden, of St. Thomas's Hospital, one of the greatest of English surgeons. He it was who invented the operation of lateral lithotomy; and when French surgeons came over to learn his art, they saw him operate on 27 patients for stone in the bladder in succession without a loss. And this, be it remembered, when stones, left uninterfered with, grew to enormous size, and when operations had not yet been made easy for the surgeon by the help of chloroform, nor safe for the patient by the adoption of methods of cleanliness. Richardson's portrait of Cheselden, which you see before you, shows him as a cheery-looking individual who might never have known an anxious moment. History tells, however, that he was of such delicate fibre, that whenever he had to perform a serious operation he felt sick at the thought of the pain which he was about to inflict. And, as he was constantly operating, it must needs be that his mind was much troubled. He was 60 years old when John Hunter was brought to him—a worthy pupil for so great a master. Four years later he died from apoplexy, a not uncommon cause of death of members of his profession—the result of high arterial tension brought on by ceaseless work. There is no eight-hours days for the medical man; he cannot reckon on Saturday as a half-holiday, nor Sunday as a day of rest. It is this continuity of work, this never-ending strain of tissues, which brings about the early loosing of the silver cord, the breaking of the golden bowl. Being thus compelled to look elsewhere for instruction, Hunter became a pupil of Percivall Pott at St. Bartholomew's Hospital. A better choice could not have been made.

On the left of Hunter you see the portrait of Pott, by Romney, whom Reynolds disparagingly alluded to as "the man in Cavendish-square"—Romney, whose delicate brush lingered so lovingly over the captivating features of Nelson's Lady Hamilton. These three pictures have, by leave of the President, been brought down from our Council Room, where for many years they have hung side by side and where, we trust, in spite of all changes which may take place in the social and educational life of this country, they may continue happily to remain till Time shall be no more. At the

present day portraits of women by Romney are chiefly sought after, but I think that I would as willingly possess his picture of Pott as any that he painted. Even the most successful portrait painter cannot always choose his subjects, but when Romney had Pott seated before him he must surely have been satisfied, for truly his is a beautiful face! Those who can read a man's character in his features will form the opinion that Pott was a true English gentleman. And their conclusion will be right. His devotion to his mother was romantic and intense; his kindness of heart was proverbial, and at one time he had three needy surgeons living under his hospitable roof. He was a man of high character and blameless life. Shortly after his death his friend, Sir James Earle, collected his writings and published them, together with a short account of Pott and of his work. He said that the labours of the greatest part of his life were without relaxation, but that in his later years he took things more easily, "gathering," as Pott had expressed it, "some of the fruit of the garden which he had planted as he went along."

Though, after Pott's death, Hunter was by far the greatest surgeon of the time, still he seemed to practise his art chiefly to earn money for making additions to his museum. He greatly disliked being called away from the museum. "Well," said he, on one occasion, when he was summoned to see a patient, "I must go and earn this damned guinea, or I shall be sure to want it to-morrow." Ottley, his biographer, apologises for the strength of Hunter's language, and tells us that he has generally omitted the swear-words, as "the objections to introducing them appeared to outweigh any advantage that such verbal exactness could afford." Perhaps he was right; but I confess that I would have preferred Hunter's unpolished expressions just as they came from the mint of his strong brain. Moreover, one almost expects to hear such words echoing from the days when men wore velvet coats and silk stockings, and were accustomed to say just what they thought—and to say it clearly and forcibly. True it is that at this time Bob Acres remarked that the best terms grow obsolete, and that damns had had their day. But Sheridan's poetic imagination seemingly led him to anticipate.

Hunter's unfriendly biographer Jesse Foot wrote: "John could never talk of his injuries, but would get rid of the passions they provoked in him by the bitterest utterings of swearing—Sterne's Dr. Slop could not have been a match for him." It was pure spite that made Foot compare Hunter with that old-fashioned Yorkshire apothecary, who, we know, was unusually free in his speech. When, as you may remember, Dr. Slop cut his thumb in trying to loosen the string which Obadiah had so tightly knotted around that green baize bag, Sterne says, "It would have done your heart good, and cured you, Sir, for ever, of the vile sin of swearing to have heard him." But I am indignant at Foot comparing John Hunter with Dr. Slop! My opinion is that he was jealous of the great reputation which Hunter had obtained in a class of practice in which he, Foot, was specially interested.

### HUNTER AND JENNER.

It would be impossible to give even a short account of the life of Hunter without speaking of the close friendship which existed between him and one of his former pupils, a doctor in general practice upon the Gloucestershire bank of the river Severn, Edward Jenner—one of England's greatest men. His discovery that the passing of the harmless germs of cow-pox through the blood renders a person secure against small-pox was not revealed until after Hunter's death. But we may permit ourselves to imagine the pleasure with which he would have regarded the philosophic bearings of Jenner's investigations, and the delight with which he would have hailed their conclusion. But what would he have thought, could he have foreseen that his friend's glorious discovery would at length be made a shuttlecock of political agitators, and that the cause of vaccination in the country of its birth should be so grievously neglected, that its compulsory adoption became a farce? The day of reckoning will surely arrive: England is sowing the wind, and she will not fail to reap the whirlwind. But, unfortunately, when the inevitable outbreak of small-pox takes place, among its victims will also be the ignorant and helpless.

Letter-writing was a far more important business 140 years ago than it is now; the art has been killed by the penny post. When Hunter was corresponding with his friend the postage of each letter cost at least 4*d*., which is equivalent to about 8*d*. at the present day. Hunter's letters to Jenner are delightful; and it is a great pity that we cannot have Jenner's in reply. In every letter Hunter is urging his friend to find material for his museum—fish, flesh, fowl—anything that has life, or that ever had it. And he was willing and anxious to pay for it. "You see," said he, "I am very greedy. Be sure you keep an account of all out-goings."

As a kind of set-off to what Jenner did for the museum, Hunter was more than ready with advice and help to his distant friend when surgical patients caused anxiety in his practice. Now, in the winter of 1776 a particular case was giving Jenner much anxiety. It was that of a boy with an open wound in his skull, from which a mushroom-like growth was bulging. Jenner did not know how to cure the boy; if he had lived at the present day he would have been no wiser. So he begged Hunter to advise him. "I don't know any one I would as soon write to as to you," replied Hunter, and he then thanked him for certain things which he had sent for his museum, and remarked that he had not yet received the cuckoo's nest. He would have had to wait a long while for a nest of that out-and-out socialist of the feathered tribe, who leaves to others the responsibility of the housing, the rearing, the feeding, and the education of his offspring!

> Now for your patient. I believe the best thing you can do is to do little. I would not touch the fungus with a caustic for fear the brain should be near. Keep your patient rather low and quiet.

And what excellent advice it was! Could the Council of the College of Surgeons of to-day suggest anything better? But Jenner was not satisfied, for in a little while he was again questioning about the boy. And Hunter, with his museum in his thoughts, wrote in reply:—

> Send everything you can get, either animals, vegetable, or mineral, and the compound of the two, either animal or vegetable mineralised. I would have you do nothing with the boy but dress him superficially; these funguses will die and be damned to them, and drop off. Have you large trees, of different kinds, that you can make free with? If you have, I will put you upon a set of experiments with regard to the heat of vegetables. Have you any eaves where bats go to at night?

And so on. Still Jenner was not satisfied, and in less than a fortnight he was again writing about this worrying case. Hunter replied:—

> I would advise you not to meddle with it. Be quiet; and think yourself well off that the boy is not dead. You do not mention a word about bats. Have you got the bones yet of a large porpoise? I wish you had. Is ever the salmon-spawn seen after she has parted with it? If it is, I wish you could get some. I want to examine the spawn of fish in the progress of the formation of the young one.

In the next letter Hunter is asking again about the salmon-spawn, and is suggesting that Jenner should undertake some work upon the sex question of eels. He appealingly ends the letter by asking, "Cannot you get me a large porpoise for love or money?"

I am tempted to keep you one moment more over these letters because, being written to his dearest friend, they show the inmost working of his mind, and they plainly tell us that the one thought of his life was his museum:—

> Dear Jenner, I received your salmon, and very fresh, and just examined enough to want another. I will take a cock-salmon when you please. If you catch any bats, let me have some of them. Did I write to you some time ago about cuckoos? I have forgot; if I did not, I must give you a long order.

He does not ask about that boy; nor, so far as one knows, does Jenner trouble him any further in the matter.

At about this time Jenner had fallen deeply in love, and just when things seemed to be leading up to a happy marriage black disappointment threw over them his pall. Hunter, ignorant of what was going on in Gloucestershire, continued to write for various objects for the museum. But he received no response. Then he heard a rumour of Jenner being married, so wrote to congratulate him, sandwiching his congratulations between remarks on hedgehogs and fossils. On the broken-hearted Jenner replying that not only was he not married, but that, unhappily, all was over between the lady and himself, his friend replied:—

> I own I was at a loss to account for your silence, and I was sorry at the cause. I can easily conceive how you must feel. But let her go, and never mind her. I shall employ you with hedgehogs.

And then he gave him a list of investigations which he was to make with these animals. His museum was always in the front of his mind. Whether he was writing about a patient or about his own serious breakdown, or about his friend's

marriage or his grievous disappointment, he was ever thinking what he could do to render his museum more complete, and so to increase its value as an educational institution. Another great reason for his anxiety to make it more perfect was, as his brother-in-law tells us, that it might sell the better after his death, for, having spent almost all his fortune over it, he had been able to make scarcely any other provision for his family; "his expenses had always exceeded his income."

### HUNTER'S DAILY LIFE.

Hunter was at work in his museum from dawn till breakfast; and he was in his consulting-room or in his carriage, and visiting his hospital or his private patients, from breakfast till dinner—which he took, according to the custom of the day, at 4 o'clock. After dinner he went to sleep for an hour, and then sat down to write letters and essays, to work up clinical records, or to describe preparations for his museum. At midnight the butler brought him in a fresh lamp, by the light of which he continued to work on till one or two in the morning, or even later in winter. So that, including the nap which he had after dinner, he was apt to get but four or five hours' sleep out of the 24. We are plainly told that he had no home amusements, and that he took his greatest pleasure amongst the wild animals which he kept in the garden of his house in Earl's Court where he slept, and where, with his family, he spent the greater part of his time in the autumn months. What a life to live! Which of us would accept it, even to be, as Hunter is, immortal? But Nature, ever jealous, could not pardon even him, her devout and loving disciple, for so long and complete a neglect of her unwritten laws. As far as one can make out, he took no bodily exercise, and sought little mental relaxation. The bow was never unstrung. As one looks back upon this unresting student of Nature one can scarcely help regretting that he had no experience of those two amusements over which men and women of to-day are apt to waste so large an amount of time—golf and bridge. As recreations for intellectual workers, what more suitable; as life's chief occupations, what more pitiable!

There is little to suggest that outside of the science and practice of his profession Hunter found much to interest him. The letters which he wrote and received, or, at any rate, those of them which have been preserved and published, make no allusion to sport or pastime; and there is no mention of foreign travel, that delightful relaxation for a busy man with no special interest in the pleasures of country life. Indeed, Hunter's one and only happiness was in intellectual work, and especially in that which concerned his museum. Every medical man should make for himself interests outside of his profession to which he can devote himself in the odd times in which he can escape from the anxieties of his occupation. Intemperance in work is well-nigh as harmful as intemperance in eating or in drinking. In the absence of outside interests a medical man is truly to be pitied. When, with advancing years, he unwillingly retires from the contest, if there is nothing better for him to do than to look wistfully backwards or sorrowfully forwards the evening of his life must, indeed, be dark and miserable. But happily there was no evening to Hunter's life; he died before the lengthening shadows fell across his path.

### HUNTER AND THE COLLEGE OF SURGEONS.

The records of our corporation show that at a Court of Examiners held in July, 1768, John Hunter was examined for and received his diploma. Amongst his examiners was his former master, Percivall Pott. Hunter was then 40 years old. Already we have heard of him in connexion with the Corporation in the minutes of the Court of Assistants of July, 1753, where it is stated that Pott and Hunter were elected Masters of Anatomy.

In accordance with the by-laws, the Court had to make six anatomical appointments each July—two Stewards of Anatomy, two Wardens of Anatomy, and two Masters. The business of the stewards was to prepare the subjects for the lectures; of the wardens, to act as demonstrators; and of the masters, to give the lectures. It was the duty of the Court of Assistants to choose these officers from amongst the members of the Corporation. The appointments were for one year, and if a member thus chosen said that he wished to be excused from holding the office he was fined "twenty-one pounds lawful money," for so it was nominated in the Bond. The plea of incompetence for the task, or of illness, was not taken as an excuse—the work had to be done or the fine had to be paid. Fines of all sorts were, indeed, the great source of income to our Corporation in those days. In the minutes of the Court of Assistants of Oct. 5th, 1786, it is recorded that Mr. John Hunter had presented to the Corporation two volumes of his "Natural History of the Human Teeth," and a copy of his "Treatise on the Venereal Disease," and in accepting them the Court passed him a vote of thanks. When, in 1745, an Act of Parliament enabled the Surgeons to free themselves from the Barbers, they became a corporation under the Government of a Master and a Court of Assistants—21 in all. Shortly afterwards they built for themselves a Hall in the Old Bailey. And early in 1789, in order to fill the vacancy caused by the death of Pott, Hunter was elected a Member of the Court—which corresponds with the present Council of the College. Appointment was for life, and as Hunter died in 1793 he was a Member of the Court for four and a half years. Foot says that during this time he attended only one meeting. That, however, is a mis-statement—"calculated and frigid."

The Court met quarterly, and it had now and then, in addition, a special meeting. Hunter was elected in February, 1789, and in the following April he came to be admitted, taking the oath and paying the fine of £21. There were three other meetings in the year of his election, at each of which he was present; and there were five in 1790, from only one of which he was absent. There were six meetings in 1791, but he attended only two of them; in 1792 there were six meetings, two of which he attended; and in 1793, in the October of which year he died, he was present only once. Altogether he attended 14 meetings out of 26, which is, indeed, a very poor record. In his last two years he was absent from eight meetings out of eleven, and my explanation for his increasing lack of interest in the affairs of the Court of Assistants is that he got on badly with his fellows, and especially with three highly placed Members who came from his own hospital—Gunning, Walker, and Hawkins. Though there may not have been open enmity between him and them at that time, they certainly were on unfriendly terms. Indeed, Ottley tells us that they were frequently in collision. At a meeting on Nov. 7th, 1793, as recorded in the minutes, "The Master reported that since the last Court of Assistants Mr. John Hunter, a Member of the Court, had departed this life, and declared a vacancy in pursuance of such his death." Nothing further is noted: no resolution of regret or of condolence appears to have been passed. And Dr. Peachey, who has kindly examined for me the minute-books of St. George's Hospital, says that he can find in them nothing more than the bare notification of his death.

There is no denying it, Hunter did not agree with his fellow practitioners. Foot affirms that he hated his equals in the profession, and it was probably true, for Ottley writes that his manner to them was "blunt and overbearing." As Surgeon-General to the Army he had great patronage, and he was in the habit of refusing recommendations which other surgeons made for vacant military appointments, and of giving pretty nearly everything to his own pupils and associates. This made him highly popular amongst his friends, but it was gall and wormwood to the other hospital surgeons, many of whom were upon the Court of Assistants. If he could have foreseen that this College was eventually to have the guardianship of his museum things might have been different. When, six years after his death, Parliament purchased his museum for the nation, it was offered first to the Royal College of Physicians, and it is only because of their declining to accept its custody that Government entrusted it to our keeping. But had the trust been accepted by the Sister College, she would have found a medical and a philosophic side to Hunter's work which would have justified her in giving him an honoured place by the side of her Harvey and her Sydenham. Fortune, however, was not blind when she settled that the world-famed collection, with its countless associations, should be handed over to this College. And justly may it be claimed that nowhere else could the conditions of the trust have been more faithfully or devotedly observed.

### HUNTER'S ILLNESS.

It has been truly said that a man is as old as his arteries, and looked at from this point of view, though Hunter's age at his death was under 65, he had for many years been far older than that, for he was the subject of advanced arterial

disease. It is impossible to say at what time the disease began; it comes on so slowly that for a long while there may be nothing to call attention to its presence. But in the spring of 1773 he had an alarming attack of spasm, in which for about three-quarters of an hour his heart stopped beating; it was apparently caused by mental worry. Four years later he had a still more distressing attack, which was also brought on by anxiety. And this time he suffered from a continuous giddiness which prevented him raising his head. The mental shock so affected his feeble heart that it was unable to pump blood to the brain through the narrowed vessels. But though this must have been felt by him to be a warning, he evidently did not allow it to cause him alarm. This is the way in which he refers to it in the middle of a letter which he wrote to Jenner a few weeks afterwards:—

> I had the pleasure of seeing your brother, but only for a time. I received the bird; I am not acquainted with it. Send me some more if you can get them readily. Not two hours after I saw your brother I was taken ill with a swimming in my head, and could not raise it off the pillow for ten days. It is not yet perfectly recovered. Have you begun the eels? No porpoises. No salmon-spawn before it is hatched. You see I am very greedy.

This letter is especially interesting in the light of those other letters. In them, as you remember, when Jenner was anxiously asking how he should deal with that boy with the damaged head, Hunter could, apparently, think of little but his museum. And here, when Hunter is telling Jenner how Death had been giving what was, as a fact, his second loud knock, he refers to it merely as an incident, between the welcoming of a rare bird to the museum and a reminder that Jenner has not yet told him of the result of his researches concerning the eels. What a mental picture it offers—Hunter discussing the sex problem in eels whilst Death is waiting at the door!

But though Hunter gave little heed to his illness his doctors insisted on his going for a complete rest to Bath. And as soon as he was settled there Jenner went over to see him—a journey of about 20 miles—and was alarmed by his altered appearance. He said nothing to Hunter, however, but he wrote to his London physician, giving it as his opinion that all the trouble was due to imperfect nourishment of the heart-muscle the result of arterial disease. And Jenner was right. After remaining three months at Bath, though by no means recovered, Hunter went back to London and set to work at his museum and his practice as if nothing had happened.

In 1785—that is, eight years after his last attack, and as many before his death—his disease caused him increasing distress, and especially so when he was angry; and as he grew older his temper did not improve. He would fly into a passion for very little cause, upon which an attack would come on, leaving him exhausted and miserable. It is a sad story—the man of giant mind such as the world rarely produces, worn out with incessant work and insufficient rest, torn to pieces by an ungovernable temper, and left, at shortening intervals, faint and helpless! It was all very well to call his complaint "flying gout"—whatever that may mean—it was something far more serious. Once more he visited Bath—but with little success. Indeed, he was in such a poor state of health that any other man in his position would have given up work altogether and retired into private life. Dante reminds us that there comes the time to each one of us when, like a mariner approaching the port, he should lower the sails and gather in the ropes.[1] But Hunter refused to see that this time had come to him. Though he knew that his days were uncertain, he felt that life without work would be intolerable. Above all things, his museum must be attended to. So he came back to London and (November, 1785) again put on harness.

Having thus brought you to look upon Hunter as a man bankrupt in bodily health, which, indeed, he was, I wish you to see, by contrast, that his mind was in full vigour, for it was at this time that he thought out and carried into execution a new operation for the cure of aneurysm—a piece of work which alone would have sufficed to place him for ever in a niche in the Temple of Fame. Time will not allow me to do more than merely refer to the great advance which this measure effected in the march of surgery. But I think it right to take this occasion of saying that its conception was the direct result of an experiment carried out on a living animal. And if no other piece of useful knowledge than this had ever been established by such method of experiment, it alone would abundantly justify the resort of the man of science to the use of what is commonly spoken of, and too often spitefully spoken of, as vivisection.

[1] . . . quella parte
Di mia età, dove ciascun dovrebbe
Calar le vele e raccoglier le sarte.

### HIS ILL-HEALTH ACCOUNTED FOR.

One cannot deal satisfactorily with the question of Hunter's ill health unless one keeps in view the fact that, as the result of what must be called a "vivisection" experiment upon himself, he became the subject of constitutional syphilis. Though he had abundant opportunity of studying the progress and the effects of syphilis in patients coming to him for treatment after accidental infection, he desired to watch its course in a less impersonal manner. So he calmly dipped a lancet in venereal matter and inoculated himself with it. The experiment was a highly risky one, and it proved disastrous. Medical men and medical students have in all times been willing to offer themselves upon the altar of Science in the hope of solving some pathological problem, or of helping onward some scheme of treatment which might prove useful to their fellow creatures. Hunter's trial upon himself by no means stands alone.

Hunter was then in his fortieth year. He well knew the seriousness of the constitutional disease with which he had infected himself, and whilst watching its progress he found that he could check it by a certain line of treatment; but he writes that as soon as he found himself thus getting better he stopped the treatment, "for the intention was not to cure the disease completely at present." In due course his throat became ulcerated, and, having again adopted enough of the treatment to cause the ulcer to "skin over," he once more ceased it, as he did not then wish to destroy the poison, "but to observe what parts it would next affect." In three months copper-coloured blotches broke out on the skin, and ulceration once more attacked the throat. At a later date, when he thought that he had learnt all that was possible from his experiments, he set to work to cure himself. From the date of his inoculation to the completion of the treatment of the disease was about three years. He was apparently satisfied that the knowledge which he had thus obtained was sufficient reward for the inconveniences which he had undergone, but no medical man, looking back, would share with him that feeling of satisfaction. The price paid was far too heavy!

There can be little doubt that the progressive arterial degeneration of which he was the subject was greatly, if not altogether, due to that self-inflicted disease from the effects of which he never actually recovered. Not only did it render him feeble in body, but it also disturbed the balance of his mind and made him increasingly restless and irritable. Thus to think upon Hunter and his illness is to enable one to look upon his vast achievements with increased respect, and to regard his failings with unstinted sympathy. The longer one lives the more fully does one realise the truth of the French proverb which tells us that to understand all is to forgive all!

### HUNTER, PASTEUR, AND LISTER.

Just now, when speaking of the friendship which existed between Hunter and Jenner, I referred to the delight with which Hunter would have looked upon the discovery of vaccination as an almost certain protection against small-pox, which his earlier death prevented him witnessing. And as the shade of Hunter wandered through the Elysian fields, he must have offered a warm welcome to another kindred spirit of the commonwealth of Science, and one of its brightest ornaments—Pasteur—who joined him after a hundred years. With what pleasure would these men discuss the many subjects which lay within the space in which the work of the physiologist overlapped that of the physicist! With what interest Hunter, one of the earliest friends of our Royal Veterinary College, would listen to Pasteur's account of the outbreak of the cattle-plague in France, of the pestilence amongst the silk-worms, and of the diseases of wine and of vinegar, all of which he had made to disappear by the touch of his magic wand; and with what approval would he follow Pasteur's account of the way in which he worked out his theories in connexion with that terrible disease, hydrophobia, and established their truth by experimentation on the animals themselves. What a group is it—Hunter, Jenner, and Pasteur—Jenner, Hunter's

friend in the flesh, and Pasteur in the spirit! And having thus spoken of the spiritual association of Hunter with Pasteur, it will be but a short step to connect Hunter's ideas with those of our Lister. For the range of his mental work in surgery (as was first pointed out to me by Mr. Dent) did actually touch that of Lister. Hunter is lecturing to his pupils upon hectic fever, which we now know to be the result of slow blood poisoning, and these are his words:—

> We have as yet, I am afraid, no cure for this. I believe the cure consists in the removal of the cause—namely, the local disease. Strengtheners and antiseptics are recommended. Strengtheners are proposed on account of the debility which has evidently taken place, and antiseptics, from the idea of absorbed pus giving the blood a tendency to putrefaction.

Here, then, is Hunter, a hundred years before Lister, talking about pus and putrefaction, and ascribing hectic fever to blood poisoning, just as Lister would do, and, moreover, saying that the disease should be treated by *antiseptics*—using Lister's favourite word. Hunter had thought it out for himself, turning the rough idea over in his philosophic mind until he had it ready for presentation to his students.

Look at him in Reynolds's magnificent picture. He is seated at a table with an open book beside him with drawings of skulls; there are also on the table an anatomical preparation and two closed volumes. But evidently his thought is not with *them*. His face shows that he is deep in meditation, and that his thought is far away—a hundred years forward, as likely as not. And if so, may it not be that at that very moment it is on the fringe of the work of Pasteur and Lister? At any rate, at one time or another he was within touch of Lister's immortal discovery. And he could have reached it without the help of a microscope. He might, like Pasteur and Lister, have put the fresh-boiled broth into a sterile vessel; and, having shielded it from dust, kept it sweet for weeks. Then, carrying out the same idea with a clean surgical wound and treating it with "antiseptics," he would there also have secured the wished-for result—its prompt healing. By the broth losing its clear appearance and its wholesome smell, as by the wound becoming swollen, offensive, and bathed in pus—the result of their having been infected—he would have been led to see and grasp the great truth, and then would have worked out the simple and beautiful antiseptic theory as we practise it to-day. But in a mind so crowded with ideas that it was, as he said, "like a beehive," it might not have taken much to turn aside that current of his thoughts. So that, if, by chance, a vision of the antiseptic method was occupying his thought when Reynolds caught that charming expression, a casual remark from the painter might easily have caused it to vanish into thin air.

The portrait was painted in May, 1785, three months after Hunter's fifty-seventh birthday, but it shows him looking a good deal older than that. Indeed, Everard Home says that, after his serious attack, "he gave the idea of having grown much older than could be accounted for from the number of years which had elapsed." The picture was hung in the exhibition of the Royal Academy of the following year, as the "Portrait of a Gentleman." But in the course of time, on account of the nature of the pigments used, it darkened and cracked and threatened to go to ruin. At last, when its condition seemed well-nigh hopeless, it was restored by an expert named Farrar, who in the course of his remarkably successful work, removed the paint from the old canvas and re-applied it upon a new one. The story of the painting of the picture is well known—Reynolds found Hunter a bad sitter. Probably Hunter did not like being under control, and became as difficult to pose as a restless boy at a photographer's. And so it came about that, though the picture was far advanced, the artist was not satisfied with it. One day however, Hunter fell into a waking dream as he sat, and "Reynolds, without a word, turned the canvas upside down, made a fresh sketch, with the head between the legs of the former figure," and obtained the result which you see. Much the same thing happened when Mrs. Siddons was sitting to Reynolds as the Tragic Muse. He had already sketched the head and face, and when he had turned away from the easel to mix some colour Mrs. Siddons changed her position in order to examine some picture hanging on the wall. Reynolds was so pleased with this natural pose that he begged her not to move, and he then painted her as she is seen in the glorious picture at Grosvenor House.

In a lecture on Sleep, Hunter says: "It is even possible to dream when awake; it is only necessary for the thinking power to take possession of the mind, and proceed with an action with which the present sensation has nothing to do. Now, whenever the body loses the consciousness of its own existence, it may be called a waking dream, and this is often the case when people are in deep thought." In this great picture Hunter is truly in a waking dream; and no one will venture to contest the point if I suggest that he is dreaming of putrefaction, of suppuration, and of the antiseptic system which was to come! The picture was presented to the College by Hunter's son in February, 1821, with the accompanying letter, addressed to the secretary:—

> SIR,—I have no doubt that the placing the portrait of my dear Father, the late John Hunter, Surgeon, in his Collection will meet with the wishes of the College of Surgeons, and that the gift of the above portrait will be acceptable to them. I do not think it can be more appropriately situated or more worthily disposed of. I therefore beg leave to make them the offer, and to add that I shall think myself honoured by their acceptance of it. I am, Sir, your obedient servant,
>
> JOHN BANKS HUNTER.

## HUNTER AND ST. GEORGE'S HOSPITAL.

Hunter's colleagues at St. George's Hospital regarded him as a dreamer, and refused to see that his physiological studies could have any useful influence on the work of the practical surgeon; whilst Hunter, from his high standpoint, looked down upon them, and treated them with scant respect. Thus there was between him and them an entire absence of that good feeling which it should be the duty of every member of a hospital staff to cultivate, not only for his own happiness, but in the interests also of the hospital, the students, and even of the patients.

At the beginning of 1792, when Hawkins retired from the hospital, Hunter did his utmost to secure the election of Mrs. Hunter's brother, Everard Home, to the vacant post. Gunning and Walker, however, fought against him to get in Thomas Keate, who proved successful by 134 votes against 102 cast for Home. "This," says Ottley, "could scarcely fail to heighten existing animosities." Those two words, "existing animosities" give clear proof that Hunter greatly disliked Gunning and Walker, and I am going to assume that Hawkins (into whose vacancy at St. George's Hospital Keate had been elected) sided with them against Hunter.

Those of us who have had experience of the wretched system of election to a hospital staff by canvass and open vote can understand the bitterness caused by the Keate-Home contest—a bitterness made all the greater by the fact that it was somewhat of a family affair. As a result of his defeat, the iron entered deeply into Hunter's soul, and he turned round on his colleagues and declared that he would no longer agree to the division with them of the surgical pupils' fees, and that for the future he meant to keep for himself all moneys paid by students who entered under his name. He claimed that he did this in order to stimulate the other surgeons to do better for the students than they had done in the past, as, in his opinion, their neglect had brought disgrace upon the hospital. Gunning, Walker, and Keate replied; and, whilst admitting that more pupils entered under him than under them, claimed that they did so from a knowledge of the fact that he would be likely to find army appointments for them later on. And they set forth this unanswerable objection to his scheme, that if a pupil entered the hospital for the practice of one surgeon, he would be unable to watch the work of the other. To have agreed would have been to admit that they had actually been blameworthy, but they said that they would like to have the matter referred to the governors of the hospital. Hunter replied that he accepted their proposal and that he would meet it "fairly and very willingly." And before the meeting he sent a long printed document to each governor setting forth his case.

Hunter's scheme, which was conceived in a moment of wrath, was an impossible one, and the governors rightly gave their decision against it. And after this, in order to promote the smoother working of affairs at the hospital, a committee was appointed to draw up a code of regulations, amongst which was one forbidding the admission of pupils who had not already received some medical instruction. The effect of this would be to shut out young fellow-countrymen of Hunter who were attracted to the hospital by his reputation and success. Indeed, soon after the adoption of the code, two Scottish youths, without any knowledge of medical work, applied to Hunter to be received as his pupils at the hospital. He told them of the new law, but promised to try to obtain permission

for them at the meeting of the board which was to be held on Oct. 16th.

Hunter's position at that time was not a happy one. He had quarrelled with his colleagues and had twice been beaten by them in contests before the governors of the hospital, and he was now going to engage in another fight with them. Worse than all, he was the subject of a disease which gave him distress whenever he was excited or angry. Something told him that disaster was close at hand. As he was addressing the board at St. George's Hospital, a member of it, possibly Gunning, gave him a flat contradiction, on which he stopped speaking, hurried into an adjoining room, and fell lifeless in the arms of one of the physicians. A more dramatic ending to a strenuous life could not be imagined; and doubtless it called to the mind of many people the sudden heart failure of Chatham when he was addressing the House of Lords a few years before. But between Chatham's seizure and his death there was a delay of some weeks, whilst Hunter's death followed his attack with awful suddenness, as when the deafening thunder rolls upon the vivid lightning-flash.

If, as I claimed just now, Hunter was happy in the time of his birth, equally so was he in that of his death. He was then in his 65th year—an age at which he could not expect surgical practice to be increasing. His heart disease was steadily getting worse, and he himself more irritable; and though he was still full of energy, he was wanting in strength. His museum, daily growing larger, was making heavier demands upon his purse, and he had already spent so much upon it that he had but little private means. Surely Death came to him as a friend, as, indeed, he comes to most of us, if only he does not too long delay his coming.

On examination after death, it was found that his heart was wasted and small, its muscular tissue being "pale, and loose in its texture." The arteries of the brain and of other parts were thick and rigid. Commonly it happens that when a man's arteries are diseased, the muscular wall of the heart grows stronger and more massive in its effort to pump blood through the resisting tubes. But as Hunter had not been in the habit of making vigorous calls upon his heart by physical labour, his heart possessed no reserve of force, and readily gave up the unequal struggle. In an ordinarily healthy man, taking a fair amount of exercise, if the heart is called upon to do extra work—as in the case of valvular or arterial disease—its muscle becomes thick and strong, like that of the blacksmith's arm, but the heart of Hunter actually shrank from the task. And, just as Jenner had foretold 16 years before (after that visit of Hunter to Bath), the arteries supplying its muscular tissues were converted into bony canals. The aorta was dilated, and all the valves of the heart were out of working order.

There are few great men the details of whose life are so well known as are those of John Hunter's. His history is an open book which anyone may read. And though we fully recognise the grandeur of his intellect, we also see his weaknesses and admit his faults. No part of his industrious life is hidden behind a curtain which the historian feels it better to leave undrawn. We are told almost every detail; we know the full story of his death, and we have a sufficient account of the result of the examination of his body after death to enable us clearly to understand its cause. And as we learn of the gross changes which were revealed in his arteries, the opinion grows stronger that they were to a large extent the result of those disastrous experiments which he made upon himself a quarter of a century before.

When reading the biography of a man one expects to find that as he advances in years the little faults of his earlier days disappear, and that his views, his interests, and his hopes become wider—that, in short, his character gradually takes on the richer tints of autumn. But so it was not with Hunter. The sunshine and the rain which had come into his life had had no mellowing effect upon him; the jealousies and the bitterness of his nature steadily became more marked. And from what one knows of the results of syphilitic degeneration of the blood-vessels, one would probably be right in ascribing the early coming on in him of old age, and the growing irritability of his temper, to the effects of that disease with which he so unwisely inoculated himself. This great high-priest of Nature ought, of course, to have been buried in Westminster Abbey; but no invitation was forthcoming. In those days Theology looked askance upon Science. So the body was enclosed in a coffin and quietly placed in the vaults of that church which stands between the Strand and Trafalgar-square, for, as Hunter lived in Leicester-square, St. Martin's-in-the-Fields was his parish church. And there it would probably have been to-day, but that in the beginning of 1859 a member of our profession, Mr. Frank Buckland, saw a notice in the *Times* to the effect that by an Order in Council the vaults of St. Martin's Church were to be bricked up. Believing that the body of Hunter was lying there, he visited the church, and found the following entry in the sexton's register concerning Hunter's funeral arrangements under the date of October 22, 1793—

> John Hunter, Esq., Leicester Square, No. 3 Vault.
> £6. 10. No candles; ½ past 4.

Buckland made it his care to find the coffin. On the door of Vault No. 3 being opened he saw, by the help of a bull's-eye lantern, that the vast space was stacked with coffins from floor to ceiling, in "most admired disorder." Some were lying east and west: some north and south: others were placed crosswise, and some were standing up on end. Every one of these had to be taken out so that the name-plates might be read. This was a long and gruesome business, as the coffins were heavy of oak and lead, and he and the men helping him spent 15 days over it. At last, when upwards of 200 coffins had been fruitlessly examined, there were only five left at the end of the vault; and as he could read the names on the three uppermost of these, he feared that his chance of reaching the object of his search was small. However, on one of the last two he had the satisfaction of finding the inscription:—

> John Hunter, Esq.,
> Died 16 October
> 1793
> Aged 64 years.

And above these words were engraved the arms of the Hunter family.

Thereupon the Council of this College approached the authorities at Westminster, and asked that the body might be granted tardy burial in the Abbey. The Dean, Dr. Trench, worthily replied: "We shall be proud to be the guardians there of the ashes of so great a man." The coffin, therefore, was brought to the Abbey, and on March 28th, 1859, in the midst of a crowd of illustrious persons, all that was mortal of John Hunter was laid in the earth of the north aisle, not far from the last resting place of Isaac Newton. And as the coffin was being lowered into the vault the organ pealed forth that magnificent chorus from Handel's Funeral Anthem—

> "His body is buried in peace; but his name liveth evermore:"

To you, Mr. President, and to me, as to others who are devout worshippers at the shrine of Hunter, there may appear little or nothing in this address which is worthy of attention. Still, it may be hoped that in its course some stray thought may have been set free—as when a flint strikes steel—which, falling upon the mental tinder of some younger man, may cause the springing up in him of a flame to illuminate his studious path and help him onward. Indeed, without the hope of some such effect resulting from a Hunterian oration, the pious intention of John Hunter's executors might well be allowed to sink into oblivion. And even for those of us whose thoughts should be directed to the lowering of the sails of their bark, and the gathering in of the ropes, there will still remain a place in the mental vision for the picture of a raw Scottish lad coming up to a great city in which he had but one friend, and, possessing nothing beyond the rudiments of an education, seeking his way to a position in the world of science and of art such as it is the lot of few to attain, and without any indebtedness to the goddess Fortune, reaching it by dint of industry, vigour, and determination.

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KING'S COLLEGE HOSPITAL.—The annual court of the corporation will be held at Portugal-street, Lincoln's Inn, London, W.C., on Thursday, Feb. 23rd, at 5 o'clock, when a report of the receipts and disbursements of the past year and of the general state of the hospital will be presented and other special business will be transacted.

ABSTRACT OF

# The Lettsomian Lectures

ON

# OPERATIONS FOR STONE IN THE MALE BLADDER.

*Delivered before the Medical Society of London on Feb. 6th and 20th and March 6th, 1911,*

BY WILLIAM F. HASLAM, M.B. BIRM., F.R.C.S. ENG.,

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## LECTURE I.

*Delivered on Feb. 6th.*

IT was known, said Mr. Haslam, that operations for the removal of vesical calculi had been performed for over 2000 years, and they were indebted to Celsus for a clear description of the method then adopted, which, with but little variation, kept the field for over 1500 years, and was at times practised as lately as 200 years ago. This operation seemed originally to have been regarded as beyond the scope of the practitioner of that lime, for they found that those who took the Hippocratic oath bound themselves not to perform this operation; the disciple, taking the oath, said, "I will not cut persons labouring under the stone, but will leave this to be done by men who are practitioners of this work." The operation was performed as follows. The fore- and middle fingers of the left hand were inserted, one after the other, into the anus, while the right hand was placed on the lower abdomen. The stone was then sought for by the fingers of the left hand in the rectum, assisted by those of the right hand, which pressed from above into the pelvis and kept the stone in front of the left fingers, so that these might press it from behind forwards against the neck of the bladder and perineum. Celsus was fully alive to the danger of dragging a large stone through a small incision, and he therefore recommended that "when the stone is too large to be extracted without laceration of the neck of the bladder it is to be broken." This was accomplished by fixing it with a hook and then striking it with a suitable iron instrument. With slight modifications the Celsian operation was in favour with some surgeons for over 200 years after 1524.

In spite of its many defects the Marian operation which followed found many ardent supporters; it was taken up and run as a special procedure by the Collots, the first of whom, Laurent Collot, was appointed to the position of court lithotomist in 1556 by Henry II. of France. The Collots were famous lithotomists for eight generations, but they kept their exact method of operating a secret. There were two statements as to how this became known—one that a book was found in the closet of the elder Collot, written in his old age, containing an authentic account of his operation; the other and more exciting version being that some surgeons bored through the ceiling of the operating theatre at La Charité in order to watch the great operator at work. They were rewarded for their trouble by seeing him do an operation which was only a slight modification of the Marian, which was well known to all those practising lithotomy. The operator was Jerome Collot who died in 1684. The Collots were strong supporters of dilatation; indeed, they considered that the whole secret in operating lay in the dexterous use of the dilators, and when the gorget was invented one of this family took upon himself to defend the dilator, which it was intended to replace. The gorget was not at first a cutting instrument, but merely a blunt wedge, a scoop of conical form, which, from the form of its beak, slipped easily along the groove of the staff, and by its wedge-like shape dilated the wound, and by the groove or hollow served as a conductor for the forceps. In studying the Marian operation it was noted that it was faultily conceived and so rough in its detail that the patient stood but a poor chance. The operators desired not to cut into the bladder, but to effect an entrance by dilatation. The incision was placed too far forwards and was in the perineum and did not extend into the ischio-rectal fossa, where there was more room for the passage of the stone. The urethra was opened through the bulbous portion, and as the surgeon was impressed by the idea that membranous parts should not be cut the membranous urethra, together with the prostate and neck of the bladder, were dilated, or rather torn open, by his instruments. The destruction of so great a length of the urethra—for by the time the operation was completed it amounted to this—led to the formation of a permanent fistula, if the patient escaped the ordeal with his life.

When Frère Jaques appeared in Paris in 1697 and exhibited to the profession his method of extracting the stone, there was a general feeling, not only among the profession, but among the public, that here, at any rate, was a method that, so far as extracting the stone was concerned, was less brutal and far quicker than the Marian operation, and that, whether the results were good or bad, the patient was spared the prolonged agonies of this procedure. The principle of the operation as performed by Jaques was to cut, and not to dilate, the deeper parts of the wound. He it was who showed that wounds of membranous parts were not mortal, and that Celsus was right when he said, "It is safer to cut than to dilate." By some he was regarded as one sent from Heaven to alleviate the sufferings of his fellow creatures. By his enemies—and he naturally had them—he was spoken of in different terms. He travelled over the provinces of France, assuming the name and character of a hermit or religious man, and he cut those who came to him with stone. He appeared to have extracted certificates from the friends of those on whom he operated, who were astonished at the dexterity with which he extracted the stone. He, however, had the sense not to wait until the time of cure arrived, but at once passed on to another district, leaving his patients to their fate, and many of them died. Frère Jaques's operation was done as follows:—

Having introduced a staff into the bladder, without a groove, he took a long knife with which he made an incision by the side of the left ischium, and cutting obliquely upwards he divided all the parts between the tuber ischii and the staff, which he allowed to remain in the bladder; he cut so freely upon the staff as to admit the finger into the bladder; along the finger he introduced an instrument which he called his conductor, as if to dilate the wound, and along the conductor he passed the forceps. Having introduced the forceps he withdrew the conductor; upon finding the stone he withdrew the staff also, and having seized the stone he drew it out.

Jaques operated in public at the hospitals, and so great was the desire of all to see him that sentries had to be placed at the gates to keep the mob back. Men from all parts came to see him operate, and they were greatly impressed with his boldness and rapidity, for it is stated that on one occasion he cut nine patients in three-quarters of an hour—a very remarkable performance when compared with the time taken in operating by the Marian. For a time all went well, and his enemies seemed unable to attack him with any success; but before long his patients began to die, both in the Hôtel-Dieu and in La Charité, in such numbers that, disappointed and broken by persecutions, he left Paris and travelled first in the provinces and then in Holland and Germany, where he was well received by those who saw him operate.

Observers of Jaques soon discovered that his operation was a great advance on the Marian, and Marechal in Paris, Raw in Holland, and Cheselden in England adopted it and put it to the test. There was one also who was deeply impressed by this procedure, and that was M. Fagon, who had shown much kindness to Jaques on his visit to Versailles, and had remained true to him even after his misfortunes in Paris. Fagon was himself afflicted with stone, and, in spite of the fact that all the best surgeons in France and Holland performed this new operation, resolved to place himself in Jaques's hands. He therefore, in the year 1700, called him to Versailles, lodged him in his own house, and persuaded him to go through a complete course of studies and dissections. This he did under the guidance of Fagon; then a series of operations were performed on dead bodies, and the parts afterwards dissected by Du Verney, the anatomist, who with Felix, the king's body surgeon, and Fagon, his future patient, discussed the various points of the operation with Jaques. As the result of these experiments he formulated his second operation, giving up the use of the round staff and using a grooved one instead. The incision

was now no longer made with the long dagger-shaped knife, but with an ordinary scalpel, the position of the incision being similar to that of his first operation. The deeper incision was, however, quite different, for, instead of passing the knife through the cellular tissue that surrounds the rectum or seeking the body of the bladder, the neck of the bladder and the prostate were cut by passing the knife along the groove in the staff, and thus incising the prostate. The rectum and pudic artery were out of danger, as the knife was not plunged blindly among the parts. Jaques now put his improved operation to the test, and cut 38 patients in Versailles without losing one. He fully recognised the help that had been given him by this staunch supporter, and he saw the value of a knowledge of the anatomy of the parts, of the advantage of the grooved staff, and of the method of making the deep incision by passing the knife along the groove. A critical time now came in Jaques's career, for not only was M. Fagon afflicted with stone but the Mareschal de Lorges was also the subject of stone. M. Fagon, who had been so largely instrumental in perfecting the operation, had actually been sounded by Jaques, when he was prevailed upon by his friends to place himself in the hands of Marechal, who had learnt to perform Jaques's operation. This he did, and was cut by him with complete success. The Mareschal de Lorges took every precaution to ensure success in his own case at the hands of Jaques. He collected 22 patients with stone who were cut by Jaques with perfect success. He then submitted to the operation himself, and died in tortures the next day. This was a fatal blow to the reputation of Jaques, and he left Paris, never to return. He travelled over the continent of Europe, and operated with great success. At The Hague the magistrates had his portrait engraved and presented him with a set of golden sounds. In Amsterdam, by the permission of the magistrates, he cut patients in the hospitals. In 1707 he was again at Versailles and visited his old friend M. Fagon. He went to Vienna, Venice, Padua, and Rome, and finally died at his native village in 1715.

# THE SPHYGMOMANOMETER AND THE SPHYGMOGRAPH

## IN RELATION TO THE MEASUREMENT OF ARTERIAL BLOOD PRESSURES.[1]

BY C. O. HAWTHORNE, M.D. GLASG.,
HONORARY PRESIDENT OF THE GLASGOW SOUTHERN MEDICAL SOCIETY (1909–10).

IT is due, I cordially recognise, to your goodwill that I enjoy the present opportunity of speaking to you on the relative values and meanings of two comparatively modern methods of observing and recording certain features of the arterial pulse; and although in doing so I shall have, I fear, to recite to you a number of propositions with which you are already abundantly familiar, I hope to be able to convince you that at least some of these propositions demand interpretations of a somewhat different order from those which are commonly placed to their credit.

The arterial pulse has, of course, always been an object of nterest and of importance to practitioners of the art of medicine, and the several varieties of its rate, of its rhythm, and of the characters of the individual beats were recognised and expounded at a very early date in medical history. I am not sure whether anyone at the present day is prepared confidently to identify each one of the 27 forms of pulse described by Galen, but I am quite sure that no modern physician proposes to enlarge that classification; and a good deal might be said for the contention that in practical clinical work the several characters of the pulse mean to-day very much what they meant to the physicians who first described them many centuries ago. But the modern spirit, inspired by science, with its universal passion for measurement, has touched the pulse as it has touched many other commonplace objects and movements. Hence has arisen the desire, in the study and examination of the pulse, to substitute for the immediate sense-perceptions and personal judgments of the physician methods carrying a capacity for numerical values and graphic record—methods, that is to say, which may be relied on to yield results unaffected by the personal bias or other defects of the individual observer. The ambition, in short, of instrumental methods in the study of the pulse is to describe the pulse in terms of exact measurement and to display its characters in graphic or pictorial record.

It may, perhaps, be said that this is a subject of but limited interest, seeing that the conditions under which medical practice is for the most part conducted are not favourable to the use of instruments of precision in ordinary pulse examinations. Such a proposition might easily be contested, but, allowing it to pass for the moment, it still remains true that instrumental methods *are* used in the examination of the pulse, and that records so obtained, and important clinical inferences based on them, occupy a somewhat prominent position in modern medical literature. Consequently, whether we like it or not, we are, individually, face to face with the necessity of endeavouring to form an opinion of the value these records possess and of the meanings they severally convey.

Now it will be allowed that one quality of the arterial pulse, which in modern medicine is being specially subjected to instrumental investigation and record, is the quality known as blood pressure. And manifestly, before we can examine or criticise these investigations and records, we must be familiar with the facts which they portray, and we must accept and understand the term "blood pressure" in one and the same sense. We must, in short, obey the elementary mandate which directs us to precede discussion by a definition of the terms to be employed.

Fortunately there is one part of the circulation—namely, that conducted in the capillaries—where there is no room for difference of opinion or of statement in the definition of the term "blood pressure." Through the capillaries, as we know, the blood flows in a steady and even current and at a constant and uniform pressure—at a pressure sufficient to move the blood along the vessels, sufficient to keep the capillaries distended, sufficient to cause certain elements of the blood to pass through the capillary walls, but, happily, at a pressure less than sufficient to produce capillary rupture. And this intracapillary blood pressure is the essential blood pressure of the body, as upon it the maintenance of the nutritive and metabolic activities of the tissues directly depends; and all other blood pressures, whatever they be, exist with this one aim and object—namely, to provide and continue a constant, uniform, and gentle blood pressure in the capillaries.

But to institute and maintain a flow of fluid or circulation in a system of closed tubes it is necessary to secure at some point in the system a rhythmical disturbance of pressures. And this, we recognise, is effected in the human body by the action of the heart, each systole of which causes a rise of pressure within its cavities, the resulting outflow of blood being guided in the desired direction by means of the cardiac valves; whilst at the following diastole there is a fall of the intracardiac pressure, and a consequent flow of blood into the cardiac chambers. Thus intracardiac blood pressure is not, as is intracapillary blood pressure, a constant and uniform level, but is, on the contrary, a repeated and rapid movement between wide extremes. Hence arises a necessity for the provision in the circulatory apparatus of some mechanism by which the wide variations of blood pressure due to the alternate systole and diastole of the heart shall be converted into the uniform and gentle pressure necessary to, and characteristic of, the capillary circulation.

It is to meet this demand that the arteries or tubes which intervene between the heart and the capillaries are provided with highly elastic walls. Into these elastic vessels at each systole of the left ventricle there is driven forcibly a parcel of blood, and while part of the force is occupied in moving the blood along the vessels, part is spent in distending or stretching the arterial walls. At the cessation of the ventricular systole these elastic walls recoil and thus cause a further displacement of blood towards and through the capillaries. There is, therefore, in the capillaries pressure and blood flow during cardiac systole, and pressure and blood flow in the intervals between successive cardiac systoles, this latter result being due to the elastic recoil of the arteries. In this way there is secured that uniform and constant intracapillary blood pressure which the physical and biological conditions of the capillary circulation

[1] An address delivered to the Glasgow Southern Medical Society.

demand; while, at the same time, the anatomical and physiological distance of the capillaries from the heart, the resistance offered to the circulation by the arterial walls, and the elastic and therefore force-absorbing quality of these walls combine to reduce the violent pressures caused by the cardiac contractions to a level compatible with capillary integrity.

But observe the unfortunate position of the arteries in this scheme of things, for their lot is, indeed, a hard one. With each cardiac systole a blow and a strain is inflicted on the arterial wall. Recovering from this, the artery recoils or moves towards a position of rest, but such a position it never reaches, for before it does so it is made to stagger under the impact of a second blow. Thus always the arterial wall is in a state of strain or tension—the tension rises with the cardiac systole and falls with the cardiac diastole, but it never wholly disappears; which is only another way of saying that always within the arteries there is a positive blood pressure—the pressure rises with the cardiac systole and falls with the cardiac diastole, but it never wholly disappears. And the arteries suffer this strain, and these repeated bangings and buffetings, not for their own pleasure and enjoyment, but in order that the capillary circulation may be conducted in calm and quietude and peace—in order that the tissues, so far at least as the capillary circulation is concerned, may dwell at ease in a land "in which it seemeth always afternoon." Or, to change the figure, it is the fate of the arteries to "wither" in order that the capillaries may be "more and more."

In any discussion on the subject of blood pressure it is only seemly and just that at least a passing word of recognition should be offered to the position, the function, and the fate of the arteries. Inelegant, unæsthetic structures, mere pipes or conduits for the transmission of fluid, the arteries may readily, at least by a superficial observer, be numbered among what the Apostle Paul calls "our uncomely parts," but when one recognises how persistently they suffer "the slings and arrows of outrageous fortune," and how uncomplainingly they discharge their altruistic functions, we may surely go further and join with the Apostle in his conclusion:

> And those members of the body which we think to be less honourable, upon these we bestow more abundant honour; and our uncomely parts have more abundant comeliness.

This, however, is but a passing allusion to what may be called the poetical or philosophical relations of blood pressure, and with these aspects of the subject, I recognise, we have at the moment no direct concern.

To revert, therefore, to a more practical note, it appears that while in the capillaries blood pressure is a uniform and constant measure, and in the heart a series of rapidly repeated excursions between a very high level and a very low, indeed a minus, quantity, blood pressure in the arteries is a continuous force, though the amount or degree of this force rises and falls with the cardiac systole and diastole respectively, and the height of the maximum and the extent of the oscillation are greater as the artery is nearer the heart, upon the action of which both maximum of pressure and extent of oscillation directly depend.

By this brief sketch, then, we may be reminded that the pressure of blood in different parts of the circulatory mechanism not only varies in degree but also in quality or kind—there is an intracardiac blood pressure, an arterial blood pressure, a capillary blood pressure, and a venous blood pressure; and each of these has both its own measure and its own character. Rather, therefore, than blood pressure there are blood pressures; and hence, when a particular figure is presented to us as a measure or index of blood pressure, it is of the greatest importance in the interests of clear thinking that we shall have a lively appreciation, both of the point or level of the circulatory mechanism at which such measurement has been taken, and also of the exact period of the circulatory rhythm in which it has been calculated.

How, now, do these considerations apply to the use of the apparatus, the sphygmomanometer, which is being largely employed at the present day to estimate what is called, usually without phrase and without qualification, *the* blood pressure? In the most common type of sphygmomanometer a broad leather armlet is strapped firmly round the upper arm; lining this armlet is an elastic bag which communicates through an indiarubber tube with the well of a mercurial manometer, so that at any given moment the pressure at all points of the system is identical and the degree of the pressure is indicated by the height to which the mercury rises on the manometer scale. After the armlet has been fixed in position the pressure in the manometer system is gradually increased by pumping in air by means of a valved ball or pump, and the increase is pushed until the radial pulse just disappears; and at this point the level of the mercury is read and is declared to be the blood pressure, the assumption being that when the pressure in the sphygmomanometer is sufficient to neutralise or overcome the pulsations in the brachial artery (as shown by the cessation of the pulse at the wrist) the pressure on the external surface of the artery must be equal to the pressure on its internal surface, and as this external pressure is indicated by the level of the mercury the figure which this reaches is announced as the index or measure of the blood pressure. Perhaps it is allowed, more or less generally, that considered as an absolute record this figure is qualified to an uncertain extent by the resistance of the soft tissues of the upper arm and also by the resistance offered by the arterial wall. But with this aspect of the question we are not now concerned. In other words, I propose to accept in the meantime, and without any discussion of the disturbing elements just mentioned, the figure recorded by the sphygmomanometer and usually announced as the measure of the blood pressure; and upon this announcement I have one or two comments to make.

First, it is evident that the figure obtained from the sphygmomanometer is not the measure of anything which can be called the general, mean, or average blood pressure, but is, on the contrary, merely the measure of a particular or individual pressure obtained from the brachial artery during a certain phase of the circulatory movement. Secondly, it is also evident that the figure recorded by the sphygmomanometer is not the measure of anything which can be called the mean or average pressure of the arterial cycle, for the record is taken only at a single point in this cycle. And as the point selected is the one at which the distending force within the artery is just overcome, it is manifest that the sphygmomanometric figure is the measure of this distending force. But the distending force within the brachial artery is most certainly the pressure of the blood as this is due to the systole of the left ventricle. Therefore the figure yielded by the sphygmomanometer is a measure of the force of the left ventricle as this reaches and influences the brachial artery; or, in more detail, it is a measure of the vigour with which the left ventricle, through the column of the blood and for an undefined period of time, acts as a distending or expanding force within the brachial artery.

It is of some importance carefully to note this definition, as the pressure of blood within the brachial (or any other) artery is, if the complete arterial cycle is contemplated, caused, or at least controlled, by two different factors; and while one of these is the systole of the left ventricle, the other is the degree of resistance offered to the circulation, as this resistance is determined by a contracted or relaxed condition of the vessels on the remote or peripheral side of the artery. But, as in the application of the sphygmomanometer, and at the moment the record is taken, the peripheral circulation in the upper limb is, by the strangling action of the sphygmomanometer armlet, for the time being practically put out of existence, it is obvious that the sphygmomanometer cannot measure the contribution which this factor—that is, the peripheral resistance—makes to the level or other character of the blood pressure. There, therefore, remains for measurement only the contribution made by the left ventricle, and hence we arrive again at the conclusion that the figure announced by the sphygmomanometer is, and only is, a measurement of the height to which, for an undefined period of time, the blood pressure rises under the stroke or systole of the left ventricle.

I have here a record which I submit as a demonstration of the accuracy of this conclusion. The patient from whom this tracing (Fig. 1) is taken has, in the language of the sphygmomanometer, a blood pressure of 175; this, in other words, is the figure at which the mercury stands when the pressure in the sphygmomanometer is just sufficient to neutralise the arterial pulsation in the upper limb. When a pulse tracing (Fig. 1) is taken it is seen that the pulse has the characteristic features of the pulsus alternans, a strong and relatively weak beat following one another alternately.

If the sphygmomanometer and the sphygmograph are applied at the same time, and the pressure in the former is raised so that the mercury touches the level 175 on the scale, the excursion of the sphygmographic needle ceases. But if the pressure is lowered, say, to 160, certain beats of the pulse come through, and it is obvious that these are the alternate stronger beats; the same thing is seen when the pressure is further lowered, say, to 150, and it is not until it is depressed to 140 that faint indications of the alternate weaker beats of the heart reach the radial artery and appear as feeble waves in the pulse tracing.

According, therefore, to the doctrine of the sphygmomanometer, this patient at one moment has a blood pressure of 175 and at the immediately following moment a blood pressure of about 145. But the conditions attending the two observations remain unchanged with one exception, and that exception is the degree of force of the cardiac systole. It is therefore a difference in the vigour of the alternating systoles which explains the difference in the two sphygmomanometric readings, and thus the facts displayed in Fig. 1 may be quoted in support of the conclusion that what the sphygmomanometer measures is the force of the cardiac systole as this arrives at the brachial artery. Such, then, and subject to the qualifications to which I have already alluded, is the contribution offered by the sphygmomanometer to the measure or estimate of the pressure of blood within the arterial channels.

We have now to consider what information relative to blood pressure is professed or offered by the sphygmograph. With the use of this instrument as an apparatus for recording the rate of the pulse, the rhythm of the pulse, and the presence or absence of pulse irregularities we are not now concerned. Our business is solely with the characters of the individual sphygmographic wave in so far as these offer, or profess to offer, information as to the height or level of blood pressure. It may perhaps be said that no one uses, or thinks of using, the sphygmograph for the purpose of measuring blood pressure. But, with great respect, I submit that this statement can only be accepted subject to considerable qualification. No doubt it is true that no one uses the sphygmograph with a view to make an absolute measurement of blood pressure—a measurement, that is, in exact numerical terms. But surely it is also true that we are repeatedly presented with sphygmograms which are announced as indicating high blood pressure on the one hand or low blood pressure on the other. And the terms "high" and "low" in such a context are manifestly terms of measurement—of comparative, not of absolute measurement—but, all the same, terms of measurement. Therefore it is fair to say that the sphygmograph is claimed as an instrument which possesses the ability to proclaim, at least in comparative terms, the height or level of blood pressure; and, indeed, diagrams such as those seen in Fig. 2 are, with their corresponding legends, familiar objects in every textbook.

What, then, are the features of the sphygmographic wave which present themselves as guides in the endeavour to estimate the degree of blood pressure? These characters are found, I venture to remind you, mainly on the descending line of the wave. When this line is sloping or oblique, with a second or tidal wave, at, or nearly at, the same horizontal level as the primary or percussion wave, and with a third or dicrotic wave relatively inconspicuous and high up on the descending stroke, the message of the sphygmograph is read as a message of "high" blood pressure (Fig. 2, A); while, on the contrary, when the wave falls suddenly and promptly, with a tidal wave either absent (Fig. 2, C), or, if present, well below the horizontal level of the primary wave (Fig. 2, B) and a dicrotic wave well marked and low down on the descending line, the sphygmographic reading is recorded as one of "low" blood pressure. These are the facts upon which, we are taught, we may rely in an endeavour, by means of the sphygmograph, to determine whether the blood pressure or arterial tension is "high" on the one hand or "low" on the other.

Such, then, are the current doctrines of the sphygmomanometer and the sphygmograph relative to the measurement of blood pressure, and it is manifest, if these doctrines are valid, that the two instruments in any given instance will deliver an identical message—they will speak in equal tones and will prophesy with a unanimous voice. Or, in practical phrase, when in any patient the sphygmomanometer announces a high record (say 130 or upwards) the sphygmograph will produce a picture of the type seen in Fig. 2, A, while when the sphygmomanometer intimates a low blood pressure (say 100 or less) the sphygmographic tracing will follow the pattern of Fig. 2, B or C. And there are many cases in which this anticipated harmony or correspondence between the deliverances of the sphygmomanometer and those of the sphygmograph is fully and exactly realised. Thus in Fig. 3 is shown a group of pulse-tracings each one of which, in the language of the sphygmograph, is a proclamation of "high" blood pressure—the descending line of the sphygmographic wave is oblique or sloping, the tidal wave is at, or nearly at, the same horizontal level as the percussion wave, and the dicrotic wave is slight and is high up on the descending line. And with equal distinctness the sphygmomanometer, in each case, announces that the blood pressure is "high"; in the first case the record is 210, in the second 210, in the third 200, and in the fourth 165, all of these numbers being far above the normal or average sphygmomanometric level. Again, in Fig. 4 is seen a group of pulse-tracings every one of which, described in sphygmographic terms, is a distinct intimation that the blood pressure is "low"—the pulse wave falls more or less suddenly, the tidal wave is absent, and the dicrotic wave is relatively conspicuous and is low down on the descending line. And the sphygmomanometer, in each instance, again speaks to the same effect, for the figures 95, 98, 98, and 105, as marked on the tracings, are as sphygmomanometric records distinctly below the usual or average reading.

Therefore, so long as we confine our observations to such series of cases as are represented in Figs. 3 and 4, we may entertain and cherish the comfortable conviction that the sphygmomanometer and the sphygmograph in their deliverances on the subject of blood pressure confirm and support one another—that they announce similar or corresponding findings, the one in terms of exact measurement, the other in the form of pictorial facts on which a comparative estimate may be securely rested.

But I have now to ask your attention to some records which seriously disturb this apparent agreement between the sphygmomanometer and the sphygmograph, which, indeed, completely and absolutely explode and destroy it. The first evidence to this end I show in Fig. 5. Here is a group of pulse-tracings taken from different patients and presenting widely different characters. Especially do they differ among themselves in those features which are presented as pictorial guides to the estimation of the level of the blood pressure. In the earlier members of the series it is written in unmistakeable characters that the blood pressure is "high," while in the later tracings the facts, with equal distinctness, announce that the blood pressure is "low." Yet, and this is the startling fact, the sphygmomanometer proclaims that in each of these cases the blood pressure has one and the same level—namely, 175 mm. of mercury. According to the one instrument, therefore, all of these patients have one and the same blood pressure; according to the other the blood pressures in the several cases are widely different.

Clearly, then, we can no longer say that the sphygmomanometer and the sphygmograph speak in equal tones and deliver an identical message, as with one and the same announcement from the sphygmomanometer there may, we see, exist sphygmographic pictures which, as displays of the level of the blood pressure, vary in their characters and meanings between the widest possible extremes. But this is not all. Not only with a uniform sphygmomanometric reading may the pulse pictures vary as just described, but the records of the two instruments may appear in direct and mutual antagonism. And the contradiction may, as one may say, be in both directions. In a given case, for example, the sphygmomanometer may intimate a "high" blood pressure and the sphygmograph may protest that the pressure is "low"; or, on the other hand, the sphygmomanometer may indicate that the pressure is "low," while the sphygmograph writes distinctly that the pressure is "high." Here is the demonstration. Fig. 6 shows a group of pulse-tracings which in sphygmographic language announce more or less distinctly the existence of "high" blood pressure. Yet in every instance the measurement effected by the sphygmomanometer is a measurement of "low" pressure, the several numbers running 75, 80, 86, 98, 100, and every one of these being distinctly below anything which can be called the normal or average sphygmomanometric level.

FIG. 1.

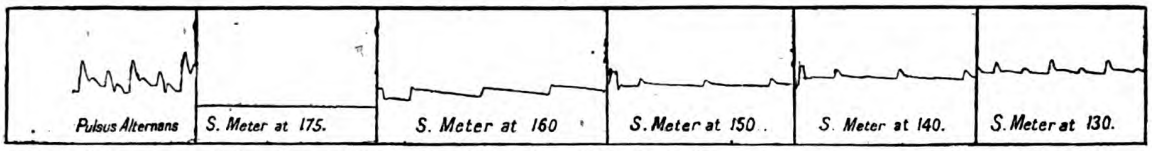


Fig. 1.—Sphygmogram (pulsus alternans) showing the effect on the radial pulse of different degrees of pressure applied to the brachial artery by the sphygmomanometer. With the pressure at 175 mm. Hg. all pulsations cease; at 160 and 150 only the alternate and stronger cardiac systoles reach the radial artery; and it is not until the pressure is reduced to 140 that the alternate weaker beats affect the tracing.

FIG. 2.

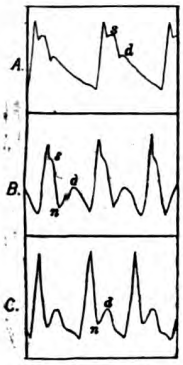


FIG. 3.

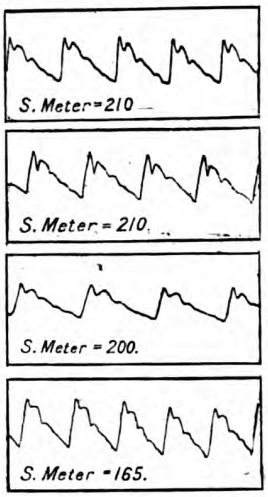


FIG. 4.

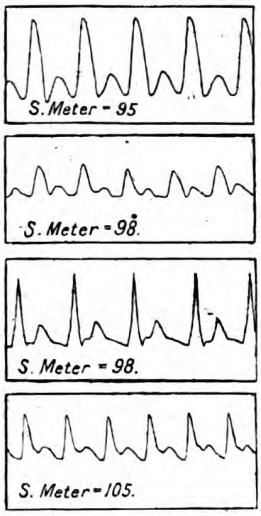


Fig. 2.—A, Pulse of high arterial pressure. B, Pulse of low arterial pressure showing slight tidal wave. C, Pulse of low arterial pressure without tidal wave. *s*, Tidal wave; *d*, dicrotic wave; *n*, pre-dicrotic or aortic notch. (Copied from Dr. Jas. MacKenzie's book on "The Pulse.")

Fig. 3.—Sphygmograms indicative of "high" arterial pressure associated in each case with a "high" sphygmomanometer record.

Fig. 4.—Sphygmograms indicative of "low" arterial pressure associated in each case with a "low" sphygmomanometer record.

FIG. 5.

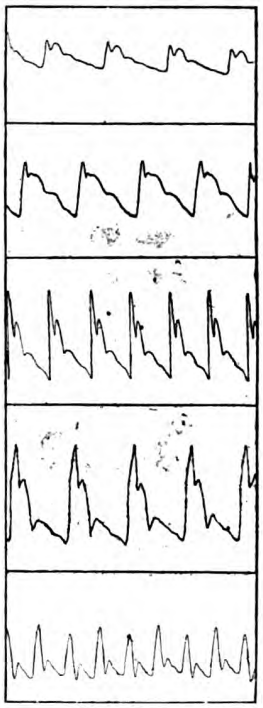

Fig. 5.—Sphygmograms of different and even of opposite character with, in all, one and the same sphygmomanometer record—viz., 175 mm. Hg.

FIG. 6.

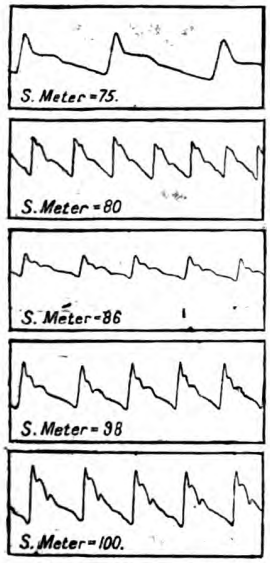


FIG. 7.

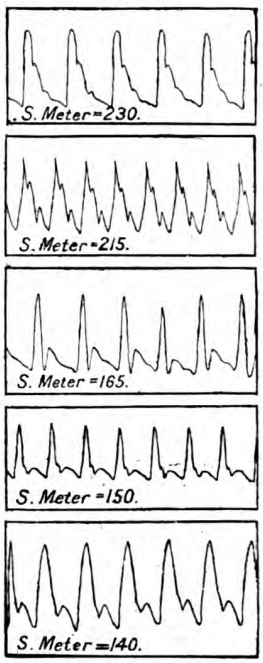


FIG. 8.

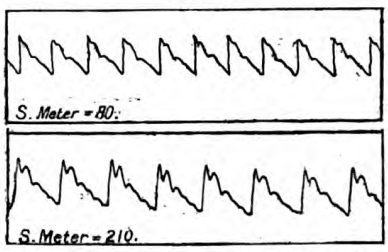


Fig. 6.—Sphygmograms indicative of "high" blood pressure associated in each case with a "low" sphygmomanometer record.

Fig. 7.—Sphygmograms indicative of "low" blood-pressure associated in each case with a "high" sphygmomanometer record.

Fig. 8.—Sphygmograms of similar or identical patter with very different (80 in the one case, 210 in the other) sphygmomanometer records.

Again, in Fig. 7 is another group of pulse-tracings, each one of which translated into sphygmographic terms carries a measure of "low" blood pressure. But the sphygmomanometer tells an entirely different story. It says, indeed, that in each of these patients the blood pressure is above, and in most of them far above, the normal, the actual numbers ranging from 230 to 140, while an average sphygmomanometric reading is somewhere about 120. In both of these groups, therefore, the sphygmomanometer and the sphygmograph plainly do not speak with corresponding, but with contradictory, voices, and the anticipated harmony has failed to arrive. Hence, to present the position in a sentence, we find that while in certain instances the sphygmomanometer and the sphygmograph are in apparent agreement, there are other instances in which they do not agree, and in which, indeed, the messages delivered by the two instruments relative to the level or height of the blood pressure are directly and mutually contradictory.

In these circumstances what is the unfortunate clinical instrumentalist to do? Possibly, as he contemplates the sphygmomanometer and sphygmograph in the light of the records here exhibited his feelings may be disposed to express themselves in the well-known lines:—

> "How happy could I be with either,
> Were t'other dear charmer away,"

and he may perhaps be impelled to the conclusion—

> "But as you both tease me together,
> To neither a word will I say."

If, however, he must, or thinks he must, make a choice—selecting one method and ignoring, as is the current fashion, the teaching of the other—shall he choose the sphygmomanometer with its attractive air of precision and accuracy, or shall he prefer the less precise but more picturesque displays of the sphygmograph; or, again, rather than either, shall he determine to fix his faith on his own trusty three fingers on the radial artery and brush aside both sphygmomanometer and sphygmograph as equally useless and equally untrustworthy?

Well, the suggestion I beg to offer in this dilemma is that our clinician shall not take any one of the three courses thus proposed to him, but that, on the contrary, while striving always for the "educated finger" he shall use *both* the sphygmomanometer and the sphygmograph, but in doing so he shall apply to their records canons of interpretation somewhat different from those which are generally current. For each of these instruments certainly gives us some information on the subject of blood pressure. The sphygmomanometer, if it does nothing else, at least tells us what amount of pressure is necessary to overcome the pulsations of the brachial artery; and no one questions that the ascent of the sphygmographic wave coincides with, and is due to, a rise of intra-arterial blood pressure, and similarly, that a descent of the wave represents, and is dependent on, a fall of such pressure. But as, *when tested by the claims usually made on their behalf*, these two instruments, though sometimes in apparent agreement, are often found in a state of open, conspicuous, and flagrant contradiction, surely the reasonable and common-sense conclusion is that it is the "claims" and not the instrument which are at fault. And the solution of the mystery is to be found, I suggest, in a recognition of the fact that blood pressure, as any other pressure, has other qualities than mere level or height, and that one of these is continuance or duration.

The measurement of the height to which blood pressure rises is one question, the measure of the endurance of the pressure *in time* is another and an entirely different question. Relatively high or relatively low and independent of the fact of high or low, blood pressure may manifestly be either prolonged and abiding, or brief and evanescent; whatever be the maximum attained, the decline therefrom may be either slow and gradual, or sudden and abrupt. Now upon this second question—namely, the duration of the maximum pressure and the manner of pressure decline, the sphygmomanometer does not, and cannot, give us any information. It may announce the measure of the force of the ventricular systole as this reaches the brachial artery, but it certainly cannot announce the time during which the blood pressure so caused continues, for, given a certain maximum of pressure within the brachial artery, the sphygmomanometric pressure necessary to neutralise or overcome this will be one and the same whether such maximum persists for a relatively prolonged period or whether, on the contrary, its duration is but for a moment.

On the other hand, the sphygmograph, whatever be its other values, certainly does not contribute any reliable information as to the maximum level to which the blood pressure rises, for, as we have seen, with one and the same maximum record in different patients the pulse pictures may be of directly opposing types (Fig. 5), and with different maximum records the pulse pictures may be of one and the same type (Fig. 8). But as, without doubt, the descending line of the sphygmographic wave corresponds more or less closely to the movement of pressure decline within the artery, we must surely find on contemplation of this line some information as to the manner of such decline. In other words, if the maximum pressure, whatever it be, is relatively prolonged, and the decline therefrom is slow and gradual, the sphygmogram will announce these facts in a sustained wave followed by a sloping or oblique downstroke (Fig. 2, A); while, on the contrary, when the maximum pressure, whatever be its absolute reading, is promptly followed by a sudden fall, the sphygmographic wave will present a sharp apex and a sudden and abrupt descent (Fig. 2, B C).

If we admit these conclusions, and if, further, we recognise that as the sphygmographic picture conveys no information as to the height or level of the blood pressure, the terms "high" blood pressure and "low" blood pressure applied to sphygmograms are misleading and inexact, and if, once again, we agree to replace these terms by the phrases "well-sustained blood pressure" and "ill-sustained blood pressure" respectively, all the apparent contradictions and mutual confusions of the sphygmomanometer and the sphygmograph cease and disappear.

The two instruments not only are not, but cannot possibly be, mutually contradictory, for they speak not of the same but of two different and independent things—the one of the level to which for an undefined period of time the blood pressure rises, the other of the relative duration of the pressure and of the manner of its decline. Each has its own value, each has its own function, and the information obtained from the one supplements that conveyed by the other; but the activities of these instruments are displayed, not on the same but on different planes, and therefore cannot possibly come into mutual conflict and collision.

It must be added that even when sphygmomanometer and sphygmograph have both been employed, there still exists a deficiency in our instrumental appreciation of the qualities of blood pressure, as neither of these instruments records the minimum level to which the intra-arterial pressure falls. To measure this so-called diastolic pressure many methods have been suggested, but none of them can be accepted with complete confidence, and the absence of this measurement lends emphasis to what is implied in the argument of this address—namely, that the customary announcement of the maximum sphygmomanometric figure on the one hand, or the presentation of a sphygmogram on the other, is in the individual patient anything but a complete, final, and exhaustive statement on the clinical aspects of blood pressure.

Whether I have succeeded in convincing you that the positions as I have presented them are well founded and secure I, of course, may not dare to say. But, thanks to your invitation, I have at least had the opportunity of stating these positions, and I now, with great respect, leave the verdict upon them to the decision of your better judgment.

Harley-street, W.

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GERMAN UROLOGICAL SOCIETY.—The Deutsche Gesellschaft für Urologie announces that the third congress of the society will take place in Vienna from Sept. 11th to 13th. The chief subjects for consideration will be: (1) The Permanent Results of Nephrectomy for Tuberculosis, reported by Dr. Israel of Berlin and Dr. Wildbolz of Zürich; and (2) the Clinical Importance of Urethroscopical Methods, reported by Dr. Oberlaender of Dresden and Dr. Wossidlo of Berlin. Applications to take part in the discussions on these subjects by means of papers and demonstrations must be made before June 1st to the office of the society, Maria Theresienstrasse, 3, Wien, IX. Dr. O. Zuckerkandl is the president and Dr. Kapsammer is the secretary of the society.

# EYE-STRAIN IN RELATION TO THE GENERAL HEALTH.

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SURGEON TO GLASGOW EYE INFIRMARY, AND LECTURER ON OPHTHALMOLOGY IN THE GLASGOW WESTERN MEDICAL SCHOOL.

EVERYTHING appertaining to the well-being of the patients under his care is of importance to the general practitioner. With regard to eye symptoms, however, he is too apt to regard these as of importance only to the specialist and therefore outside of his sphere of interest. I wish, therefore, to direct attention to the close relationship which frequently exists between eye-strain and the general health, how these influence one another, and how therefore the practitioner must be familiar with the far-reaching effects of eye-strain if he would deal successfully with these sufferers, who will generally apply to him in the first place for the relief of their distressing symptoms.

Eye-strain frequently acts by exhausting the nervous system of the patient, and hence through the medium of brain and spinal cord often has a profound and far-reaching effect on the functions of the various organs of the body and on the general nutrition of the patient.

I am not one of those who would attribute "all the ills that flesh is heir to" directly to the varied effects of eye-strain. There has been a tendency on the part of some writers, especially in America, to exaggerate the far-reaching effects of eye-strain, and this has given rise to a certain amount of discredit and scepticism regarding the subject. But as experience becomes wider one becomes more and more impressed with the fact that eye-strain has often a most prejudicial effect on the general health of the patient, and that great improvement in this may often be brought about simply by the relief of the eye-strain.

An important thing to bear in mind is that whilst eye-strain often manifests itself by pain or discomfort in the eye itself, this is not always the case. In many cases the eye-strain is accompanied by no pain or discomfort in the eye, but by symptoms altogether outside of the eye itself, and these are the cases which often escape the notice of the practitioner unless his attention has been specially directed to the subject. It will be well for him, therefore, to thoroughly familiarise himself with these symptoms of eye-strain, which arise apart from the eye itself, and this knowledge will often be of the greatest service in ministering to the well-being of the patients under his charge.

Another most important thing for the practitioner to bear in mind is that the symptoms which I am about to describe as arising from eye-strain may be due to a very small error of refraction, and hence may never be suspected either by the physician or by the patient. I think this is peculiarly true of astigmatism, where a very small error, even 0·25 D., may give rise to distressing symptoms. In fact, my experience is that the small amounts of astigmatism give rise to symptoms of discomfort more frequently than the high degrees. The explanation, I think, is that a person with a high degree of astigmatism makes no effort to see better, as his vision is so defective, but that the smaller degrees of astigmatism, only causing a slight blurring, induce the patient to make a continuous accommodative effort to counteract it and get clear images, and hence cause continuous ciliary strain. These patients with slight degrees of astigmatism have good vision, and many of them pride themselves on their good vision, and are rather indignant at the idea of their symptoms being due to eye-strain. Patients with hypermetropia and suffering severely from eye-strain may have absolutely normal vision if tested by the test types, and it is this fact which completely misleads frequently both the patient and physician as to the true cause of their symptoms.

Another reason why eye-strain, as a cause of symptoms, is often overlooked is because the patient is already wearing glasses and has derived little or no benefit from them. It cannot be too strongly emphasised that to derive benefit the refractive error must be exactly and properly corrected. In most cases this cannot be satisfactorily accomplished without examination of the patient under homatropine or atropine. This can be properly done only by an ophthalmic surgeon, and nothing requires greater care than the fitting of patients with appropriate glasses. In many cases, as when there is marked inequality of refraction in the two eyes, the problem is a very difficult one and requires great care, thought, and experience.

Of all the reflex symptoms of eye-strain, the most frequent is headache, and yet very many cases of ocular headache go on suffering for years without the true cause being suspected. It is important to bear in mind the points with relation to eye-strain which I have already mentioned—viz., that eye-strain may be present without the patient experiencing any discomfort or pain in the eyes; that eye-strain may be present although the patient possesses good and even normal vision as tested by the types; and that glasses will not give relief unless the refractive error has been adequately and exactly corrected. Bearing in mind these facts, it is evident that the only safe rule of practice is that every patient suffering from headache of a recurring or chronic character should have his refraction carefully examined by someone thoroughly competent to make such an examination.

The ocular headache may occupy any position—frontal, vertical, or occipital, and I have frequently seen pain even at the back of the neck due to eye-strain. Whilst the situation of the headache does not guide us to the diagnosis, in the majority of cases it is frontal or vertical. Ocular headache is generally absent in the morning. If the patient has had a good night's sleep he wakens up free from headache. It begins in the course of the day and gradually increases in intensity as the day goes on. This is always the case with a pure ocular headache. This is in contrast to the character of the toxic headache, which is worst in the morning after a good night's sleep, and becomes better when the patient gets up and exerts himself. The toxic elements accumulate in the blood during sleep and exercise helps in their elimination. In many cases of headache we have a combination of the toxic and ocular, and in such cases the patient wakens with a headache, which, however, gets worse as the day goes on. In such cases the cure of the patient can only be accomplished by the relief of the eye-strain and the removal of the toxæmia, of which constipation is a frequent cause. Anæmia and eye-strain are also a frequent combination in the production of headache, and cure can only be brought about by the removal of eye-strain and the internal administration of drugs for the cure of the anæmia.

This complex origin of headaches is a point that is very frequently lost sight of, attention being given to one factor only in the case. It is to be remembered that whilst eye-strain is frequently the sole cause of headache, there are other cases where the eye-strain is only one factor in its production. The relief of the eye-strain will benefit the patient, but complete relief will not be given until all the causal factors have been dealt with and removed.

It is very remarkable how much the general health of the patient benefits by the removal of a chronic headache. Even if the headache has not been very intense, its frequent and often daily presence produces in the patient great mental depression, which through the influence of the nervous system has a powerful influence on the nutrition of the body as a whole. The complete removal of this headache, which has made the patient's life miserable, lifts him into a new world, and the general condition of the patient, both mental and physical, is enormously benefited thereby.

In addition to definite headache patients often complain of peculiar sensations in the head, which disappear on the relief of eye-strain and which are undoubtedly due to it. A feeling of pressure or tension in the head is the most common of the head sensations apart from pain. Less frequently I have heard patients complain of a feeling of tingling or crawling over certain areas of the head, and in some cases the patients could not venture to describe the sensation further than remarking that there was a very peculiar feeling in the head, always produced by the use of the eyes.

I have seen several cases of distressing insomnia which were directly due to eye-strain and which disappeared completely when the eye-strain was removed. The most striking case of this kind I saw about a year ago. The patient suffered so much that he became neurasthenic with lowering of the general nutrition of the body, and had been away from his work entirely for about

four months during the preceding winter. He was a hypermetrope with astigmatism and was engaged at an occupation where there was great and continuous eye-strain. At night after his day's work he was so exhausted that he was unable to do anything, and when he went to bed he could not sleep. This state of affairs gradually impaired his general nutrition and especially exhausted his nervous system, so that he felt himself unable for his work and was away from it for four months. There being both hypermetropia and astigmatism, there was a constant strain on his accommodation, so that this patient suffered severely. I prescribed two pairs of glasses for him, one for constant wear and the other for near work, which put his accommodation in a state of rest. It was very remarkable to see the speedy improvement in this patient's condition. He had no longer the sense of exhaustion after his day's work and got a good night's sleep after going to bed. This brought about a very rapid improvement in the patient's general well-being and condition. Since wearing his glasses he has been able to go on steadily with his work without any difficulty.

I have seen several cases where the patients had been using hypnotics for considerable periods, but when their refractive error was properly corrected and eye-strain completely relieved they were able to dispense entirely with their hypnotics in a very short period of time. In all patients using the eyes much for near work and suffering from insomnia eye-strain should always be thought of as a possible cause.

The condition of nervous exhaustion commonly known amongst brain workers as "brain-fag" is very frequently simply due to eye-strain. Those engaged in pursuits which necessitate the close and continuous use of the eyes for reading and writing often experience a sense of prostration and exhaustion, frequently described as brain-fag, nerve exhaustion, and neurasthenia. The period during which the individual can work may become gradually more limited until he is wholly incapacitated from further effort by this increasing sense of exhaustion and prostration. In such cases I would strongly urge the very careful examination of the refraction of the eye. In such patients reading and writing constantly from eight to twelve hours a day, a very slight refractive error often produces a peculiar sense of exhaustion which is mistaken for cerebral exhaustion. I speak from experience of the great benefit derived in many such cases by the correction of refractive errors, often very slight. The relief of the eye-strain soon led to the disappearance of the sense of exhaustion at the end of the day's work and what had been for years regarded as "brain-fag" was seen to have been in reality "eye-fag."

Choreiform movements of the facial muscles in children are frequently due to eye-strain and disappear when the eye-strain is relieved by the prescription of a suitable glass. The spasmodic movements are most frequently met with in, and sometimes confined to, the orbicularis palpebrarum muscles, so that the patient is constantly blinking, and is often thought to be suffering from a mild attack of chorea. A large proportion of such cases are due to eye-strain, and when this is so the spasmodic movements will be greatly relieved or even abolished temporarily by the use of atropine, but permanent relief is only obtained by the wearing of suitable glasses. Although the spasmodic movements are often confined to the orbicularis muscles, they may extend to the facial muscles, and these cases are even more likely to be mistaken for cases of chorea.

Vertigo is another symptom sometimes produced by eye-strain. Most are familiar with vertigo as a symptom of cerebral disease, of aural disease, of gastric disturbance, and of several diseases of the nervous system. We are all familiar also with ocular vertigo, due to paralysis or paresis of an ocular muscle, and which always disappears on the closure of one eye. Few, however, think of the possibility of vertigo as the result of eye-strain. I have seen two cases where this was so severe that the patients were supposed to be suffering from disease of the nervous system. In all the cases of vertigo I have seen due to eye-strain it has been associated with hypermetropia or hypermetropic astigmatism, and rapidly disappeared after relief of the eye-strain by the prescription of appropriate glasses. In all cases of vertigo, therefore, which cannot be traced to a definite cause, and which do not yield to treatment, eye-strain ought to be thought of as a possible cause, and the patient's refraction carefully examined and any defect corrected. Eye-strain sometimes plays an important part as a causal factor in dyspepsia, and many cases of dyspepsia, though relieved by drugs and dieting, will not be cured until the factor of eye-strain is completely eliminated by the prescription of suitable glasses for the patient. The nervous system plays a most important part in the causation of many forms of dyspepsia, and it is frequently through the exhaustion of the nervous system by prolonged eye-strain that the functions of the stomach are deranged. It is in the acid form of dyspepsia especially that I have found eye-strain play an important part. In this form of dyspepsia the discomfort comes on a considerable time after food and is relieved by food. This form of dyspepsia is nearly always associated with a lowered tone of the nervous system. It is an exceedingly obstinate form of dyspepsia to treat, as drugs seem to have little effect on it apart from the temporary relief of symptoms. Cure is to be brought about only by an improved tone of the nervous system, and in some cases the relief of the nervous exhaustion produced by eye-strain is the only possible way of effecting this and so curing the patient.

I have said nothing of the local manifestations of eye-strain in the eye or its appendages. These are well known, and their very presence at once directs the attention both of patient and physician to eye-strain as their probable cause. I have in these observations limited myself to discussing the symptoms of eye-strain outside the local manifestations, with which I have become familiar in my daily work as an ophthalmic surgeon. My purpose has been to call attention to conditions often profoundly affecting the general health of the patients which are not sufficiently known to the practitioner as possible results of eye-strain, and yet where the removal of this factor is in many cases the only possible means of giving the patients relief.

Glasgow.

## DIFFUSE LATENT LABYRINTHITIS: ITS DANGERS IN THE RADICAL MASTOID OPERATION.

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AMONG major surgical operations that known as the radical mastoid operation is considered to be one of those which may be performed with practically no danger to the life of the patients. Large numbers of this operation are performed yearly with such gratifying results that operators are inclined to be lulled into a false sense of security and to point to what are unfortunately in some cases only apparent successes as proof of the almost non-existence of danger.

All surgeons of experience, whether their work brings them into contact with aural work or not, recognise the grave danger there lies in aural suppuration as regards intracranial complications. They know the intimate connexion there is between these two conditions, and when in the course of aural suppuration symptoms arise which point to a suspicion of intracranial mischief they do not hesitate in advising more radical treatment for the ear than that which it has been receiving.

Another type of case for which advice is continually being sought is that of a patient who for a number of years has had a discharging ear. All the recognised methods of conservative treatment suitable to the case have been tried without success, and the patient now seeks advice as to whether something cannot be done to rid him once and for all of this troublesome affliction. If the hearing be good the surgeon may counsel waiting a little longer, but if, as is the general rule, the hearing has gone or has practically disappeared, the treatment generally advised is the radical mastoid operation. Having tendered this advice the surgeon is asked the usual questions: Is there any danger and will this operation stop the discharge?

The answer to the first question is that with the exception of the risk necessarily attached to an anæsthetic the danger to life is practically non-existent. The answer to the second question is in the affirmative. These are the two replies usually given. Yet most of us who have had experience of aural work, or who have been following the literature of the

subject, can call to our minds cases which did not fulfil these expectations; how an apparently uncomplicated case on which the radical mastoid had been performed was carried off in the course of a few days by a most virulent form of meningitis. The operation had been performed with the usual care and the labyrinth had been in no way injured, yet on post-mortem examination the labyrinth is found to be destroyed. Cases of exactly this type appear again and again, and we ask ourselves the questions, Could these results be foreseen, and being foreseen could they be avoided?

In considering the second question I wish to exclude those cases in which there is a tuberculous or syphilitic affection or in which there has been some flaw in the after-treatment of the operation. Immediately after the operation the patient as a rule makes a good recovery and progress is satisfactory. But as time goes on the ear shows a great reluctance to heal. There is always a little discharge which varies in quantity from day to day, but never absolutely dries up. This goes on for a month or two, and in some cases for several years, till the patient is again under treatment—this time for cerebellar abscess. We again ask ourselves the questions, Could we have foreseen this result even in those cases which occurred years after the original operation? and having foreseen could we have avoided the non-healing and the intracranial complication?

Results such as these recorded for a long time puzzled surgeons. True, on post-mortem examination in a large number of the cases which died from meningitis the labyrinth was found to be diseased. But there had been a total absence of symptoms which could suggest a possible labyrinthine involvement either before or after the operation. In the same way those cases which suffered from cerebellar abscess were found in the majority of instances to have a diseased and totally destroyed labyrinth. But here also there had been no symptoms which pointed to a possible affection of that organ.

The careful researches of Ruttin and Bárány have given us the key to these conditions, and they have shown us how in the majority of cases such untoward results may be avoided. Various observers have recorded the results of their investigations on the labyrinth in health and disease, but it has been left to Bárány, who used them as a basis of his own researches, to give us a sure method of testing the labyrinth and thus come to a certain opinion as to its condition. In a former article I drew attention to these tests, but a short *résumé* may be not out of place here.[1]

There are three tests on the labyrinth—the rotatory, the galvanic, and the caloric. Of these only the rotatory and the caloric are of practical value. They both have for their object stimulation of the labyrinth by causing a flow in the endolymph of the sensitive semicircular canals. In the rotatory test the patient is turned in a revolving chair. During rotation there is a nystagmus in the direction of the turning, but on stopping there is a nystagmus in the opposite direction.

It is a well-known fact that if the ear be syringed with water above or below the temperature of the body there is caused, accompanied by other phenomena, a nystagmus of both eyes. In 1881 Babinsky, while experimenting on animals, syringed the ears of rabbits with cold water and found he got nystagmus. He continued the syringing and burst through the membrana tympani and also the oval window of the labyrinth. The water poured through the labyrinth into the brain, his animals dying from meningitis. He was wrong, however, in concluding that the nystagmus which he got before perforation of the oval window was from the brain.

Bárány has shown that if an ear with a healthy labyrinth be syringed with cold water we get a nystagmus towards the other side, while if hot water be used—i.e., water above the temperature of the body—we get a nystagmus to the same side. This is brought about by causing a cooling or a heating of the endolymph in the canal which is nearest the water, thereby setting up a flow in the fluid which is necessarily microscopic. This is called the caloric test. Various other phenomena accompany this nystagmus—giddiness, disturbance of equilibrium, and nausea, but these only usually occur if the rotation or syringing be continued too long. The nystagmus is the first and most constant symptom to appear, and it is on it that we rely for any diagnostic value. There are two conditions in which the caloric test cannot be used—namely, where masses of cholesteatoma fill up the cavity of the middle ear, or where the external meatus is so constricted as to hinder the passage of a stream of water.[2]

The practical utility of these two tests is obvious. Should the labyrinth be destroyed by trauma or disease, on their application there will be no resultant nystagmus from the diseased ear.

The labyrinth may be affected in various degrees by aural suppuration from a small circumscribed local labyrinthitis to total destruction of the labyrinth by acute suppurative labyrinthitis. The affection passes through the various stages from the simple form to the acute, but the time necessary for a circumscribed labyrinthitis to change into the acute suppurative form varies very greatly in different cases. In some patients the transition takes place in a few hours, in others it takes months or years. But while this is so, as long as the disease has not progressed to the acute suppurative form the patient is to all intents and purposes safe from intracranial complications. If, however, acute suppurative labyrinthitis has set in, the patient is in grave danger. Should the case not be operated on at this stage there are two possible endings to the picture. In most cases meningitis now sets in, usually in a very virulent form, and death closes the scene, or we have diffuse latent labyrinthitis. It is to the grave dangers of this latter affection that I would desire to draw attention.

Fortunately, in the majority of cases the onset of acute suppurative labyrinthitis is well marked. The patient is acutely ill and advice is sought. But this is not always so. Indeed, during the last eight months I have met with three cases in which the labyrinthine function was totally destroyed by middle-ear suppuration, but in which the patients could give no history of labyrinthine trouble other than attacks of giddiness of no great severity. In one case, that of a woman, 24 years of age, whose left ear had been discharging since the age of 14 years, after scarlet fever, there was no history of labyrinthine trouble at all, and it was only on the careful application of the rotatory and caloric tests that one became aware that there was more in the case than merely a discharging ear.

As has been already stated, the labyrinth may be affected in varying degrees by aural suppurations. The simplest form is that of circumscribed labyrinthitis. In this condition only a part of the labyrinth is affected, varying from a small portion of one of the canals, usually the horizontal, to the whole of the vestibule or cochlea, but never both vestibule and cochlea together. Here the affection is purely local. Only a part of the labyrinth is affected, and beyond the surrounding zone of inflammation the labyrinth is normal as regards its function. If the cochlea be not affected there will be some hearing, but always there is present the "fistula symptom." This symptom, which is pathognomonic of circumscribed labyrinthitis, is elicited as follows. By means of a pneumatic speculum the air in the external auditory meatus is compressed or rarefied. On compression we get a movement of the eyes towards the diseased side and on rarefaction to the opposite side. During this stage of the disease the patient is safe from intracranial complications and many cases go no farther. Should the radical mastoid operation be performed the fistula, as a rule, becomes covered over by newly-formed bone, and the labyrinthine function becomes normal. Some fistulæ, however, are not covered by bone, but by a thick layer of fibrous tissue, and in a number of such cases the fistula symptom remains.

The next stage in the disease is that of serous labyrinthitis. Should the case of circumscribed labyrinthitis be not operated on it will, after an interval which varies much in different cases, go on to this condition. Here the whole of the labyrinth is affected, but there remains some function. We can imagine the whole of the endolymph as congealed into a mass, jelly-like in consistence, but there is no actual suppuration throughout the labyrinth. Well-marked vestibular symptoms are present, and there is a strong nystagmus to the opposite side. Hearing, however, may be absent or present, while the caloric test may or may not elicit some response; but there is always present either a certain amount of hearing or some caloric reaction, or perhaps a little of both. In this stage the patient is also safe from

[1] THE LANCET, May 7th, 1910, p. 1266.

[2] In these cases the rotatory test may be used.

intracranial complications, but the transition to the acute suppurative type is as a rule rapid. The objective symptoms generally do not increase in severity, but any hearing or caloric reaction which was present has now disappeared. While the various degrees of labyrinthine implications may be successively observed in many cases, yet there are some in which the changes are so rapid that the first picture which is presented to the surgeon is that of acute suppurative labyrinthitis. Should operative interference be not immediately undertaken there are three possible endings, meningitis, brain abscess, or latent labyrinthitis. Should there be no immediate complication, in about a fortnight all symptoms have disappeared. The vestibular symptoms with the accompanying nystagmus will have passed away, the nystagmus being the last to disappear. The picture now presented to us is that of an apparent case of chronic middle-ear suppuration in no way different from the many hundreds we see yearly. On closer examination, however, we find the hearing is completely destroyed and on application of the caloric test there is no response. Before the introduction of this test it was impossible to diagnose this condition. Such cases were treated by the ordinary radical mastoid operation, and the surgeons were at a loss to explain the unfortunate complications set up. True, post-mortem examination showed that in the majority of such cases the labyrinth was diseased. As a rule it was found to be the seat of suppuration, and the question arose as to whether this condition was the cause of or accompanied the intracranial mischief.

Latent labyrinthitis has two definite characteristics. The hearing is totally destroyed, and there is no response to the caloric test. If we find a case of middle-ear suppuration with these two symptoms we may safely conclude that the labyrinth is destroyed, and on examination of such a labyrinth we find that the whole of the labyrinth is disintegrated. A certain number of these cases if left alone will recover. Nature herself can set up a barrier against the inward progress of the disease and the labyrinth is gradually cast off piece-meal. If such a case be left to itself, in all probability there will be no further trouble, but such a part will always be a place of least resistance. The dangers are obvious. Cases of middle-ear suppuration are very liable to recurrent attacks of what are either new infections or exacerbations of the old infection. Now each time this occurs there is a danger of the healed labyrinth again becoming the seat of disease. While some cases of latent labyrinthitis, if left to themselves, would heal up, yet this is not always so. The process gradually makes its way inwards until it reaches the cranial cavity. Nature has not been able to throw out a sufficiently strong barrier to stop its progress, and, indeed, MacEwan has shown that frequently the sclerotic ostitis is in the external bone and not between the necrotic area and the cranial cavity. Such a case usually goes on to cerebellar abscess.

It is a well-known fact that infection by pre-existing channels as a rule causes meningitis, an exception to this being the aquæductus vestibuli, while if the infection gradually makes its way through the bone the membranes have time to become adherent, and the result is, as a rule, brain abscess. Neumann in 112 cases of cerebellar abscess found 40 to be due to latent labyrinthitis or 43·75 per cent. None of these had been treated by operation for the aural discharge. We can now understand the untoward results got by incomplete operative interference with such cases. Should the radical mastoid operation be performed on a case in which actual suppuration is going on in the labyrinth one of two results will follow, either the infection in the labyrinth will get a fresh impetus and rapidly increasing in strength cause infection of the meninges, or the ear continuing to discharge, at some later date be the cause of brain abscess. We have in such a case added fuel to a fire which might of its own accord have died down, but which now that it has been roused up will go on increasing in strength. As regards those rare cases in which the suppuration in the labyrinth has died down, should the radical mastoid operation be performed this weak spot in the immediate neighbourhood will, in all probability, be infected anew and either meningitis or brain abscess result.

I have endeavoured in this short paper to draw attention to the grave danger of operating on the mastoid before having tested the condition of the labyrinth. The caloric test is simple and easy of application, and all cases, before being submitted to operation, should have this test applied to them. The labyrinth operation can be undertaken with a great degree of safety, and where the labyrinth is found to be affected either by acute suppurative labyrinthitis or latent labyrinthitis, this operation must be performed in addition to the radical mastoid operation. In the lesser degrees of labyrinthine involvement the radical operation should be performed, but a careful watch must be kept on the labyrinth, and should the case progress to the acute suppurative type the labyrinth operation must be undertaken at once. Long-standing cases of chronic middle-ear suppuration should always be examined for latent labyrinthitis. If the caloric test be made a routine practice in all cases such as have been described, then the untoward results after operation will become rare and the number of brain complications from aural suppuration will be greatly decreased.

Glasgow.

# THE PRESENT POSITION OF THE X RAY TREATMENT OF RINGWORM.

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## *The Present Position of the X Ray Treatment of Ringworm.*

OWING to some real and some imaginary dangers attending the use of X rays for ringworm of the scalp doubt has recently been expressed in many quarters as to the advisability of employing a method which is admittedly the only efficient one yet devised for dealing with this intractable disease. A trivial complaint as regards the health of the child, tinea tonsurans brings in its train so long a category of ills that I have more than once heard long-suffering mothers say that they dreaded scarlet fever or pneumonia less. The disorganisation of the home that ensues from the isolation of the sufferers; the anxiety of the parents lest other children in the family should become infected; the complications with medical men and schoolmasters; the social ostracism; the loss of schooling; the wearisome process of constantly rubbing on ointments with little apparent result except the production of sore heads in the children and sore hearts in the parents,—these are some of the difficulties which have to be faced under the old *régime*. Nor is the position of the medical practitioner an enviable one; lack of success in treatment engenders want of confidence—often shared by the relatives of the patient—in his ability to cure the case; certificates of cure are not always preceded by a microscopical examination, and the hasty return of the boy from school leads to recriminations between schoolmaster, school medical officer, local practitioner, and parents. As a last resource a specialist is perhaps consulted; the case may turn out to be one of alopecia areata and expert knowledge is not invariably accompanied by tact, nor will a superfluity of emollients always soothe the troubled waves. Such difficulties as these will still occur, but they are reduced to a minimum when the head is rendered completely bald and therefore free from infection by the X rays, a process of cure which takes a few weeks instead of many months, or even years, when the old methods are employed.

When large numbers of school children are infected with ringworm the question of treatment becomes of national importance from an educational point of view. Unless compulsory preventive measures can be instituted, such as the wearing of some kind of head-gear, like the muzzle in the prophylaxis of rabies, it is essential to employ the quickest possible method of curing the disease, and a strong case must be made out by the conscientious objectors before condemning a method which holds out a hope of stamping it out from the community altogether.

### *London County Council Reports.*

Owing to improved methods of medical inspection in the London County Council schools ringworm now rarely escapes detection, and the results of routine microscopical examination show that its frequency has been much under-estimated in past years. It is a striking commentary on the lack of official recognition of dermatological teaching in the medical

curriculum that in the London County Council returns for 1909 medical certificates that the children were free from ringworm or fit to return to school had been given in 186 cases, but of these ringworm was found in 179 and favus in one, the fungus being absent, or not found, in six only. In the year ending March, 1908, 151 cases were given certificates and ringworm fungus was found in 144 and favus in three, while from April to December, 1908, medical certificates were given in 127 cases where specimens were submitted, ringworm being present in 119 cases and absent only in eight. As regards the relative frequency of the disease 3463 cases were found to be still suffering from ringworm in 1909 (446 of which were treated by Roentgen rays). Of 3019 specimens sent up for examination 2343 were found to be forms of ringworm (comparing with 2175 examined in 1908, of which 1705 were ringworm, and 1578 in 1907, with 1094 showing ringworm fungus).

An organised effort is now being made by the London County Council to cope with the disease. In the report for 1908[1] the recommendations of a special subcommittee (London County Council Report for the two months ended Dec. 31st, 1908) were as follows: 1. That, owing to this obnoxious and contagious disease, many children, estimated at 2950 annually in regular attendance, are prevented from attending school, and expose others to infection at home. 2. That the cure of the disease by lotions and ointments is a process occupying many months, or in some cases even several years, the patient being meanwhile prevented from attending an ordinary school and remaining a source of infection. 3. That the disease is now capable of being cured rapidly by X ray treatment, the child ceasing at once to be a source of infection and able to resume school on the regrowth of its hair. 4. That owing to the fact that X ray treatment is provided only at a few hospitals, where its use is greatly in demand for a variety of adult and other diseases, the treatment is available only to a very limited extent for ringworm cases. 5. That the delay and loss of time suffered by parents seeking, often from a distance, treatment for the children affected frequently results in unwillingness to submit the child for treatment, the child meantime remaining a source of infection 6. That by means of the X ray treatment the disease can be practically stamped out, thus rendering unnecessary the present schools specially maintained for children suffering from it. 7. That provision is desirable for the treatment of the disease by X rays at a fixed centre or centres. 8. That power shall be given to compel the attendance of children for treatment immediately on discovery of the disease.

In the report for the year 1907 it is stated that in 12 schools taken at random in various parts of London 26,766 attendances were lost from ringworm in 12 months. On this basis, the loss of attendance in the whole of London is 1,179,934. Taking the minimum number of sessions in one year required by the Board of Education to be 400, the number of lost attendances is equal to 2950 children in average attendance, or a loss of grant amounting to £5654 per annum. "Evidently," says the report, "there is a financial profit on the treatment of ringworm besides the increased time gained in education." Referring to the X ray treatment of children at Croydon, it was found that the cases are cured in a few weeks and numerous cases given a clean bill of health within the month. It is further stated that there is no doubt that the installation of this treatment will be one of the duties to be attended to in the proposed school clinics, and probably the formation of special ringworm classes will not be required.

The treatment of favus is also considered in these reports, but I do not propose to deal with it except to say that for obvious reasons it is less successful than for ringworm. As favus is almost entirely confined to the alien population it is to be hoped that when proper precautionary measures are taken to prevent the introduction of this and other contagious diseases into the country favus, at any rate, will almost cease to exist.

### *Metropolitan Asylums Board's Reports.*

The efficacy of the X ray method was recognised by the Poor-law authorities by the introduction of this form of treatment into the Metropolitan Asylums Ringworm School in 1905. Before this year the average time during which the child stayed in the school was 19 months; when the X rays were first employed it was reduced to five months, and in 1909 it fell to three and a half months. From the year 1905 to 1908 some 1200 cases were treated by X rays, and about 850 cases in 1909. The number of cases of ringworm admitted at the Downs School during the year 1909 was 947. The corresponding numbers for the years 1903 to 1908[2] were:—

| | | | |
|---|---|---|---|
| 1903 ... ... ... ... ... | 673 | 1906 ... ... ... ... ... | 705 |
| 1904 ... ... ... ... ... | 619 | 1907 ... ... ... ... ... | 748 |
| 1905 ... ... ... ... ... | 619 | 1908 ... ... ... ... ... | 807 |

"This increase has been rendered possible by the efficacy of the X ray treatment, which has resulted in the great diminution in the period of detention of patients."

In 1909 139 children were admitted in excess of the number in 1908, and 241 more were discharged cured than in 1908. Dr. T. Colcott Fox reports that Dr. H. G. Adamson's method of depilating the whole head in five exposures was carried out with success and saving of time. The cases completed were 984 by 2925 exposures, which works out at about three exposures per child. He adds that "we have never observed any ill-effects on the children's health, even in infants."

The report for 1910 is not yet published, but Dr. Colcott Fox tells me that 993 children were successfully treated by X rays without a single instance of permanent baldness. With the exception of a few severe cases of dermatitis when the X rays were first introduced, and a few atrophic patches in subsequent years, cicatricial alopecia has been practically unknown.

### *Results of X Ray Treatment in Paris.*

In Paris the results have been equally striking. Sabouraud states that he has been able to dispense with wards containing 150 beds from the ringworm school which are now being used for other purposes. Reckoning that one bed represents a capital of 10,000 francs, the Assistance Publique has thus made a saving of 1,500,000 francs owing to the introduction of radiotherapy. Up to 1903 the children stayed in the school about two years and there were about 110 cured annually out of 300 pupils. At the present time the treatment requires three months, and 500 children are discharged cured each year, the school being now reduced to 100 beds. The cost for each child during its stay in the school is 260 francs instead of about 2000 francs. Finally, the school will in future be able to accommodate all the cases of ringworm in Paris, including about 350 at the provincial centres. In other words, the Assistance Publique recovered in 1904 a capital of more that 2,500,000 francs, in the shape of 150 beds at the St. Louis Hospital and 350 beds in the provinces. Moreover, it should continue to make a saving of about 400,000 francs per annum by curing five times more cases of ringworm than formerly.[3] According to more recent information, with which Dr. Sabouraud has very kindly furnished me, there are now only 60 to 80 children at the ringworm school, and the Assistance Publique has definitely decided to put the ringworm school at the disposal of the provincial hospitals so that the departments will now send their cases to Paris. Dr. Sabouraud believes that in future there will only be sporadic cases or small epidemics of ringworm in Paris.

### *Risk of Permanent Baldness.*

The old method of treating ringworm is not entirely devoid of risk, for to obtain definite results in a reasonable time it is often necessary to use applications of sufficient strength to set up a certain amount of inflammation around the hair follicles, a process which is occasionally accompanied by scar-formation and the production of small bald patches on the scalp. But it must be admitted that when the X rays are used there is a much greater risk of producing permanent alopecia, and unfortunately there have been a certain number of cases in which failure of regrowth of the hair has occurred. This unfortunate result is partly due to the delicate nature of the method, which requires that a definite dose of sufficient strength to cause epilation be given, failure resulting if the dose falls short of the required amount, while permanent alopecia may ensue if this dose be much exceeded, and partly to the fact that until comparatively recently

[1] For access to this and other reports I am indebted to the kindness of Dr. J. A. H. Brincker.

[2] Annual Report of Metropolitan Asylums Board for the year 1909, pp. 22 and 37.

[3] Dr. R. Sabouraud: Les Taignes, Paris, 1910, pp. 803–805.

there was no reliable means of estimating this epilation dose correctly. The latter difficulty has now been overcome by the use of the Sabouraud-Noiré pastille. If accidents may happen to skilled operators at the present time, it is astonishing, not that they have occurred in the past, but that when cases were treated by fractional doses or even by single doses in a more or less haphazard manner, without the pastille to rely upon, they have been so comparatively few in number.

*Alopecia with Dermatitis.*

Permanent alopecia may occur either with or without preceding dermatitis. The first variety is the one usually met with and is practically always the result of over-exposure. In order to prevent this calamity certain precautions should be taken, the chief of which are as follows:—

*Precautions against over-exposure.*—In the first place, a pastille should always be used, and it must be the pastille of Sabouraud and Noiré; other varieties may have the standard tint too dark or too light and thus constitute a source of danger in themselves.

Secondly, the pastille must be placed in the correct position—viz., exactly midway between the anticathode and the skin, i.e., 7½ cm. from each, in the direct path of the rays, and as near the central rays as possible; it should be placed on a metal surface and be protected from light during the exposure. When taken out for examination, the current should be switched off and the pastille compared with the standard B tint in direct daylight and not in artificial light. It should be replaced as quickly as possible and not be examined too often, since the B tint soon loses its colour when exposed to light.

Thirdly, a tube of medium hardness, which will not become too soft or too hard during the application, should be used. In my experience the best results are obtained from a tube which can be run with the anode kept at a dull red heat, maintaining an alternative spark gap of three to four inches throughout the whole time of the exposure.

Fourthly, a milliampèremeter should be used in the secondary circuit as a control.

*Alopecia without Dermatitis.*

Permanent alopecia without preceding dermatitis is, in my experience, a rare phenomenon, and I have mostly seen it when a first exposure has failed to bring out the hair and a second is given too soon—i.e., less than a month after the first—to the same area. It has also been attributed to the application of strong remedies to the scalp before it is X rayed; to the convexity of the scalp not being allowed for in measuring the distance from the tube, or to movement on the part of the child; to the anode not being accurately centralised, or to the use of an unsuitable tube.

If idiosyncrasy, which has been shown by long experience to be so slight or so rare as to be negligible, be excluded, all these dangers are preventable, and although accidents may always happen, there is no reason why permanent alopecia should occur if reasonable care and judgment be observed on the part of the operator.

*Pustular Dermatitis.*

A pustular dermatitis of the scalp resulting from pyogenic infection is a very troublesome complication in hospital practice. Its frequency and severity are doubtless in part due to the lowered resistance of the scalp brought about by the action of the rays, and it can only be prevented by strict attention to cleanliness and the application of a weak antiseptic lotion or ointment before and after exposure. The wearing of a tightly-fitting linen cap, fastened on by a tape or elastic under the chin, day and night is a useful precaution. This pustular dermatitis, however, is usually superficial and yields to antiseptic remedies. It is not often a cause of baldness *per se*.

*Recovery of Growth of Hair.*

With regard to recovery of growth of the hair, Sabouraud contends that, although regrowth may be delayed by a slightly excessive dose, if new hair has not made its appearance in six months after depilation the patch will be permanently bald. This is no doubt true of severe cases, but I have seen considerable improvement in atrophic patches after this period of time, and know of one case in which I am told on good authority that complete recovery took place after 12 months.

*Risk of Injury to the Brain.*

I have endeavoured to show how the only real danger of the X ray treatment of ringworm—viz., the production of permanent alopecia—can be avoided. The danger of injury to the brain, if not merely hypothetical, as I believe it to be, is a far more serious matter than injury to the scalp alone. It has given rise to much discussion amongst workers in the subject as well as to many alarmist statements in the lay press. No doubt the publicity given to the injuries sustained by some radiographers, who have exposed themselves to the X rays for prolonged periods, often without adequate precautions, has had a large share in discrediting the use of X rays as a therapeutic measure. This, however, has no bearing upon the point under discussion, for no radiographer, as far as I am aware, has ever suffered any mental or cerebral injury from the rays. On the other hand, there are certain facts which make a close examination of the hypothesis not only advisable but imperative.

Radiograms show that X rays have little difficulty in penetrating the bones of the skull; nervous phenomena and pathological changes in nervous structures have been experimentally produced in small animals, and a few cases of nervous symptoms in children following X ray exposures have been recorded. It may be argued that a photographic plate is not the same as the cells of the human body; that large experimental doses given to small animals are not the same as therapeutic exposures given to children; and that such symptoms as have occurred in children—e.g., sleeplessness, headache, &c.—are more likely to be the result of the mental excitement caused by the operation than of any distinct effect on the brain substance; but the strongest argument undoubtedly rests in the absence of positive clinical evidence of harmful effects and the enormous numbers of children treated during the past five years, with absolutely negative results as regards the production of any symptoms of cerebral injury.

*Sabouraud's Results.*

Sabouraud states that since the end of the year 1903 he has been able to see and follow up every year in hospital alone an average of 500 children, varying in age from 2 to 15 years, who have been treated for tinea tonsurans by X rays. In no case has he been able to observe either cerebral trouble, or even any retardation of intellect, following the application of the X rays, and as the children under treatment continue their classes any intellectual change would be easily perceptible in them. In 17 cases idiots, epileptics, or backward children were treated and no modifications were observed.

Formerly Sabouraud refused to submit children of 2 years to the X rays for fear of possible accidents owing to the large fontanelle being imperfectly ossified. But since a rachitic child was inadvertently treated without any nervous reaction following after six months' observation, children of 2 years have been X rayed and always without accident. Even in cases where a double dose has been given by mistake no cerebral phenomena have ever developed.[4] I have already quoted Dr. Colcott Fox's opinion on this subject, and Dr. Adamson is in agreement with him.

In an exhaustive paper on the X Ray Treatment of Ringworm of the Scalp[5] Dr. J. M. H. MacLeod gives his experience of 370 children treated up to May, 1909. He was unable to obtain any evidence of injury to the brain from his own cases, from the literature on the subject, or from anyone with experience of the treatment whom he asked. His experiments, which I shall refer to later, also strongly negatived the possibility of any such injury occurring.

At the meeting of the British Medical Association at Belfast in July, 1909,[6] Dr. Sequeira said that he had treated 1400 cases by the pastille method and considered risk of injury to the brain purely imaginary. 267 of his cases had come from institutions where they were under expert examination of both medical officers and school teachers. From them he had had a report that in no single instance was there, after several years' interval, the slightest evidence of any delayed development or other injury to the brain.

From my own experience of the results of the X ray treatment in over 2000 children in hospital practice and private

[4] Dr. Sabouraud: Annales de Dermatologie et de Syphilologie, vol. x., 1909, pp. 452-461.

[5] Dr. MacLeod: THE LANCET, May 15th, 1909, pp. 1372-1377.

[6] THE LANCET, August 14th, 1909, p. 468; and Brit. Med. Jour., August 21st, 1909, p. 654.

practice, I am able to confirm these statements in every particular. I have met with a few instances in which irritability, headache, and sleeplessness occurred soon after treatment. In one case in which persistent headache developed after the first few exposures, the symptoms did not recur when the applications were repeated, and in the others they were transitory and more easily accounted for on other grounds.

In a series of 50 cases sent to me from an institution for treatment by X rays I had one case of permanent alopecia; this was in a boy treated in 1906 without a pastille, in whom three exposures failed to cause epilation, and a fourth caused a vesicating dermatitis, followed by a bald patch of about the size of a five-shilling piece. These cases were treated between the year 1905 and 1909, both by the multiple and single exposure methods. The children have all been kept under observation since, and I have recently been informed that in all of them, with the exception of the one just mentioned, the hair has grown as well as or better than before, and that none has shown any indication of delayed physical or mental development or other deleterious effect referable to the X rays.

*Experimental Evidence.*

Experimental evidence of the quantity of rays passing through the scalp and bone during a pastille dose of X rays has been provided by Dr. MacLeod,[7] by Mr. R. Higham Cooper, and by Dr. Sidney Russ and Dr. Henry MacCormac, working in the Cancer Research Department of the Middlesex Hospital. Dr. MacLeod placed a piece of the thinnest portion of the parietal bone of a child's skull and a piece of fresh scalp in front of a Sabouraud pastille exposed at 7½ and at 15 cm. from the anticathode. He found that the bone absorbed 50 per cent., and the scalp approximately 30 per cent. of the rays, leaving 20 per cent., or one-fifth, of a pastille dose to enter the brain. In these experiments no allowance was made for the resistance of the meninges nor for the distance between the surface and centre of the brain. He came to the conclusion that the scalp and meninges so protect the underlying brain that only a very small proportion of X rays, if any, can reach it, and that this small proportion instead of doing harm may even act as a stimulant.

Mr. Cooper[8] found that the effect of a single dose on the cortex immediately beneath the meninges was about one-twentieth of a pastille dose. He also devised an experiment to show the effect of the rays which converged on the base of the brain during a total epilation. The experiment consisted in the introduction of a pastille through the foramen magnum of the dried skull of a child aged 5 years, the skull being exposed as in a case of total epilation. The pastille was turned to face the incident rays at each exposure. A screen of cardboard, coated with white lead until it offered the same resistance to the rays as a piece of fresh child's scalp, was placed on the skull. The number of exposures given to represent a complete epilatory dose was eight, but in the experiment 75 pastille doses were required—equivalent to nine and a half total epilations—before tint B was reached. Allowing for the increased distance of the experimental pastille from the tube, it was calculated that without allowing for the additional resistance of the brain itself and its vascular membranes the portion of the brain in the situation of the pastille within the skull would receive one-ninth of a Sabouraud dose during treatment of the whole scalp. He concluded that there was no risk of injury to the brain, and when Sabouraud's instructions were followed very little risk of injury to the scalp, and further, that even this risk would disappear with improved apparatus, especially as regards regulation of the vacuum of the tube.

Dr. Russ and Dr. MacCormac have adopted a more scientific method of measuring the rays by means of the electroscope, and, although their work is as yet unpublished, they have kindly allowed me to state that for a given specimen they find that 20 per cent. penetrates the scalp and skull.

*The Kienböck-Adamson Method of Treatment.*

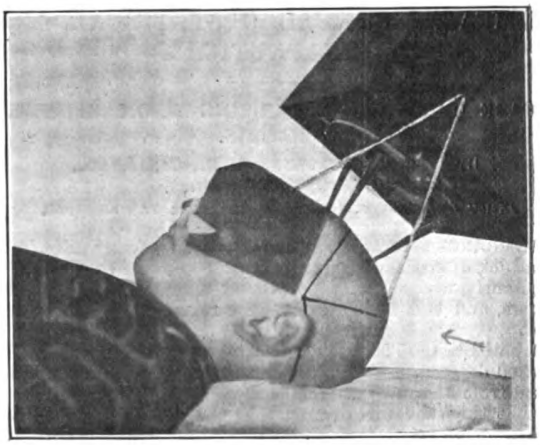
The old plan of giving multiple fractional doses has now, chiefly owing to the use of the Sabouraud pastille, been superseded by that of epilating a single patch in one exposure. Sabouraud's method for total epilation consists in covering each patch, after it has been exposed, with a disc of lead, the discs overlapping so that no fringes of hair remain. Eight or nine exposures are required for a head of average size.

The method which I have found superior to all others, both in efficiency and in the saving of time, is that first suggested by Kienböck, and subsequently elaborated and applied to the treatment of ringworm by Adamson.[9] The tube is placed in a box having an aperture of not less than 3 inches diameter for the passage of the rays, three wooden pegs project from the circumference of the aperture, so that the tube is at the correct distance when they rest on the scalp. The child's hair having been clipped short, the scalp is marked out as shown in the illustration, kindly lent me by Dr. Adamson (who took the photographs), five equidistant points being taken as a centre for

FIG. 1.

Showing scalp marked out for exposure of the whole scalp.

FIG. 2.



Showing the head in position for X-raying the front part of the scalp—position No. 1. The white lines indicate the cone of rays. The arrow indicates the direction in which the second dose—that to the back part of the crown—is aimed.

each exposure. Allowing 15 minutes as an average exposure (shorter exposures do not allow sufficient margin for slight errors of dosage) the whole scalp can be treated, either in one sitting or on successive days, in one hour and a half. The hair begins to fall as usual on the fourteenth or fifteenth day; in three weeks the child is quite bald and free from infection, new hair appears in about six weeks, and in three months the scalp is well covered. When fully grown the new hair is often thicker in texture and slightly darker in colour than the old, and is occasionally curly instead of straight. On account of the overlapping and the large size of the areas treated there is less likelihood of small patches of hair being left, and the risk of reinfection is thereby minimised. The

[7] Dr. J. M. H. MacLeod: Loc. cit.

[8] Mr. R. Higham Cooper: THE LANCET, August 14th, 1909, p. 467; British Journal of Dermatology, December, 1909, p. 391.

[9] THE LANCET, May 15th, 1909, pp. 1378–1380.

danger of giving marginal areas a double dose is also avoided. The fact that the whole of the scalp is usually exposed is no objection; experience shows that partial epilation is often worse than useless in hospital cases, and that total epilation should nearly always be insisted upon. Since I adopted this method in private practice a year ago and at the Evelina Hospital, where more than a hundred complete cases have been treated under the supervision of Mr. Cooper during the past nine months, the results have not only been more satisfactory than before, but the saving of time has enabled a larger number of hospital cases to be dealt with without any increase of risk to the children.

In conclusion, there are two points upon which I would lay stress. In the first place, if the X ray treatment is to be successful, it must be conducted in a methodical and systematic manner, by a trained operator and under skilled supervision; the child's head should be carefully and accurately marked out with a blue pencil before the treatment is begun, and the patient and apparatus should be watched during the whole time the child is under the rays. Secondly, the operator must not be stinted as regards efficient tubes and apparatus; the excessive use of one tube is false economy and may be dangerous, and such appliances as the milliampèremeter for measuring the current in the secondary, the valve-tube for checking the reverse current, the spark-gap for testing the resistance of the tube, &c., are additional safeguards.

The cases of permanent baldness I have seen have been, for the most part, due to the employment of an unskilled or careless operator or to the use of unsuitable tubes. But it is almost impossible to expect uniformly satisfactory results in the present crowded state of the electrical departments of the few London hospitals able or willing to undertake the X ray treatment, and it is a matter of urgent necessity that better provision shall be made for dealing with these cases in the future.

New Cavendish-street, W.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF DEAFNESS ARISING FROM EPIDEMIC PAROTITIS.

BY LINDLEY SEWELL, M.B., B.S. LOND., M.R.C.S. ENG., &c.,
ASSISTANT SURGEON TO THE MANCHESTER EAR HOSPITAL.

ALTHOUGH the fact that serious deafness may arise from an attack of epidemic parotitis is well known to aurists, it is apparently not so well appreciated among general practitioners, and this is my excuse for reporting the following case.

A patient, aged 36 years, came to see me complaining of marked deafness and tinnitus on the right side. The trouble dated from an attack of mumps three months previously, and at that time she was assured that the deafness she noticed was transitory and was merely due to catarrhal swelling of her Eustachian tubes. She had for a few days marked dizziness and an inclination to vomit. On examination the tympanic membrane had a normal appearance. The akoumeter was heard at a distance of 3 inches; and, excluding the sound ear by means of Bárány's noise apparatus, the spoken voice was heard at about a distance of 3 feet. Using tuning-forks ranging from C 64 to C 2048 it was found that the hearing power by aerial conduction was markedly diminished at the upper end of the scale. The time during which tuning fork C 128 placed on the mastoid region was perceived was diminished by 14 seconds. Rinne's test was positive, and Weber's was lateralised to the opposite and sound ear. On using the catheter the Eustachian tube was found to be patent, and no change in the hearing was induced by inflation. She was slightly unsteady in her gait, stumbling to the right. There was no nystagmus. Under a course of strychnine in increasing doses and small doses of quinine sulphate the dizziness disappeared, but there was no improvement in the hearing power and but little diminution in the tinnitus was effected.

I had a similar case two years ago, the notes of which have been unfortunately lost. In both cases the deafness was regarded at first as trivial; in both cases irremedial damage had occurred to the internal ear. The exact nature of the pathological change is imperfectly understood at present. The treatment advised is to institute injections of pilocarpine as soon as possible after the onset of the condition; and, indeed, in the early recognition of the trouble and the prompt employment of pilocarpine lies the only hope of bringing about any improvement. It must at once be admitted that in the majority of cases, even in spite of the early use of this drug, no change in the deafness is procured. From the point of view of prognosis it is important to realise that in most cases the deafness arising from epidemic parotitis is of a serious nature and that the outlook is generally unfavourable.

Manchester.

### NOTE ON A CASE OF FOREIGN BODY IN THE URINARY BLADDER.

BY H. W. WEBBER, M.S. LOND.,
SURGEON TO THE SOUTH DEVON AND EAST CORNWALL HOSPITAL.

A BOY, aged 14 years, was admitted to hospital on Dec. 17th, 1910, with the following history. On the 16th he sat on something sharp which penetrated the perineum; inquiry disclosed that a pointed piece of slate-pencil "found itself" point upwards on the seat, whether accidentally or otherwise was not clear. He was immediately taken to a medical man, who found the wound of entrance in the right ischio-rectal fossa, and under an anæsthetic enlarged the wound and searched for the foreign body. It could be felt, but could not be removed, and the boy was sent into the hospital. On admission a radiograph was taken, and the piece of pencil was seen to be lying transversely in the centre of the pelvis, the radiographist, Dr. W. Cheyne Wilson, expressing the opinion that it was in the cavity of the bladder. Accordingly, on the 19th the patient was anæsthetised and sounded, the foreign body being distinctly felt and heard. A median perineal cystotomy was performed and the pencil found wholly in the bladder, lying transversely and wedged by its ends. On extraction it was found to be a piece of well-sharpened slate-pencil, 2½ inches in length. Recovery was rapid.

Plymouth.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### CLINICAL SECTION.

*Exhibition of Cases.*

A MEETING of this section was held on Feb. 10th, Sir ALFRED PEARCE GOULD being in the chair.

Dr. H. D. ROLLESTON and Dr. C. H. S. TAYLOR showed a case of Mollities Ossium of 45 Years' Duration. The patient was a single woman, aged 58 years, for years a patient of Dr. H. Hollis in the Wellingborough Workhouse, who had been bedridden for 44 years on account of inability to walk and bony deformities which at first suggested rickets, but, as shown by the X rays, resembled those of mollities ossium. She was not strong as a child and did not begin to walk until three years of age, thus suggesting rickets. Between her fourth and fifth years the right knee began to bend outwards, but until 13 years of age she was able to walk, though clumsily. At the age of 11 she had whooping-cough, and at 13 "inflammation of the bowels." Her mother connected the osseous changes with the whooping-cough. At the age of 13 her strength began to fail, walking tired her, and she took to bed, where had remained since. She ached all over, and her teeth began to decay and were all gone when she was 37. Since the onset the bony deformity had gradually increased, but was most progressive at the time she first took to bed. There was no history

of any bony fracture, but she had pain in the left lower ribs at the age of 13. Menstruation began at 15 and stopped at 45. Pubic hair appeared before the age of 15. When held up—for she cannot stand—her height is 45 inches. The forehead is prominent, and the circumference of the head is 21½ inches. The rotation of the head is somewhat restricted and the sterno-mastoids are shortened and contracted. The distance from the suprasternal notch to the symphysis pubis is 14½ inches. The spinal column shows a continuous curve forwards in the dorsal and cervical regions, and there is scoliosis to the right in the dorsal region. The thorax shows lateral flattening, and the respiratory movements are mainly abdominal. There is considerable thickening in the outer curvature of each clavicle. The upper extremities are more deformed than the lower, and in that connexion it might be mentioned that she had never used crutches. The right upper extremity is more affected that the left. Each humerus shows an antero-external curvature which is most marked in the upper third; the muscles are stretched across the curves formed by the humeri. The movements at the shoulder-joints, especially the right, are somewhat restricted. The right forearm cannot be completely extended, but flexion is perfect. The right radius is twisted round the ulna at its lower end, supination and pronation are restricted. At the wrists extension is prevented, but flexion is good. The hands are fairly normal and can be used for sewing. There is no clubbing of the fingers. The patient cannot stand, and when supported rests on the toes; when the heels are placed on the ground she collapses towards the left. The thighs can be flexed at the hip to a right angle, but abduction and adduction are limited. The femurs, especially the right, are curved with the convexity forwards and slightly outwards. At the knee-joints the tibiæ form an obtuse angle with the femur, thus to some extent resembling Mr. Clinton T. Dent's case of "double displacement backwards of the tibiæ, with deformity of the long bones and arrested development." To the outer side of the right ligamentum patellæ there is what appears to be a loose body in the joint. The legs cannot be completely extended at the knees, but can be flexed fairly well. The tibiæ and fibulæ present a concavity to the right. The left ankle can be extended to a considerable degree, but cannot be flexed to more than a right angle; the movements of the right ankle are not quite so good. The patient did not show any evidence of infantilism and was normal mentally. The thyroid could not be felt. The urine contained a trace of albumin. The maximum systolic arterial blood pressure was 100 mm. Hg; the viscera were otherwise normal. She weighed 4 stones 11 pounds. On Feb. 6th, 1911, the blood count was as follows: red cells, 4,045,000 per cubic millimetre; white cells, 10,400 per cubic millimetre; hæmoglobin, 95 per cent.; colour index, 1·18; polymorphonuclear cells, 75 per cent.; lymphocytes, 23 per cent.; mononuclear cells, 2 per cent.; eosinophile and mast cells, none seen; red cells, normal. When first seen the condition was thought, on the bases of appearances and history, to show the results of late or recrudescent rickets. Dr. G. Allpress Simmons's X ray examination showed that the changes characteristic of rickets were absent and that the appearances pointed to mollities ossium. As they were uncertain about the occurrence of real arrest in mollities ossium, which such a long duration suggested, Dr. Rolleston and Dr. Taylor obtained the help of Mr. Dent, who kindly referred them to the account of his case already mentioned, and also to his unpublished Hunterian lecture at the Royal College of Surgeons of England in 1905. In his first case, published in 1882, a condition very similar to that in the present patient followed scarlet fever; in that paper he mentioned records and specimens of cure or arrest of mollities ossium. In his Hunterian lecture he explained the osseous softening as a result of the action of pathogenic organisms on the bones; he also referred to four or five cases under his observation in which softening of the skeleton, followed after a long interval by recovery of the rigidity of the bones—but in a condition of great deformity—apparently dated from an attack of whooping-cough. He quoted Siegert, who collected four cases of mollities ossium occurring at the ages of 10 years, 10 years, 13 years, and 16 years in children who had all had, but recovered from, rickets. The present case, which appeared to belong to that category, raised the interesting question if many or most of those cases formerly recorded as "late rickets" were really examples of osseous softening due to some microbic invasion of the skeleton and not to rickets in the strict sense. Siegert's cases and their case suggested that ordinary rickets, by damaging the skeleton, might favour the onset of mollities ossium.—Dr. ALLPRESS SIMMONS said that the bones generally were very translucent and light in texture; the shafts of the long bones were thin, the compact layer narrow, and the central canal disproportionately wide. The extremities were expanded in proportion to the shafts, very light in texture, and did not appear more opaque at the periphery as compared with the centre. The absence of the compact layer in some cases extended from the extremities for some distance along the shafts. The articular surfaces generally were clean cut and normal, and there was no lipping of the articular edges. The skull bones, as far as seen on the skiagram, were of normal thickness; the base of the skull appeared to project abnormally upwards into the cranial cavity. The jaws were edentulous except for an unerupted upper back tooth. The bodies of the vertebræ were vertically compressed, and the absence of definite light spaces between them suggested either that intervertebral fibro-cartilages were very thin or that they were infiltrated with lime salts or both. There was a slight forward convexity of the upper cervical spine; there were four lateral curves in the spine—namely, a convexity to the right, opposite first dorsal vertebræ; to the left, opposite seventh and eighth dorsal vertebræ; to the right, opposite the eleventh rib; and to the left in the lower lumbar region. The pelvis was compressed from above down opposite the sacral promontory and laterally upwards and inwards on both sides opposite the hip-joints, its cavity being thus converted into a sharp trefoil shape. The left ribs looked fairly normal. The fourth, fifth, sixth, and seventh right ribs had a sharp inward convexity at about mid-distance, with a boss at that point strongly suggestive of a repaired fracture. With regard to the left upper extremity, the clavicle was fairly normal, as was also the scapula. The humerus had a general slight inward convexity and had fusiform thickenings at about the junction of the upper and middle and middle and lower thirds, and at those points the ordinary extra thin compact layer became abnormally thick. The left radius and ulna were fairly normal in appearance. The right clavicle had a bossy expansion at about the junction of the mid and outer thirds. The right scapula had its axillary border abnormally thick, especially at a point about two-thirds down. The right humerus had a complicated U-shaped bend at about a junction of the mid and lower thirds, the general direction of which was concave, inwards and forwards. The compact layer was somewhat thicker on the convexity than on the concavity of the bend, and there was no sign at any of the bends-in or bosses on the bones of any sustaining buttresses in the concavities of the bends or of any threatening or old fractures, with the exception of the ribs mentioned already. The right radius and ulna had a U-shaped bend with the concavity inwards at about the mid-point. There was no marked deformity of the bones of the hands. The neck of the left femur was short and thick, and its upper surface was encroached upon by the expanded and bossy great trochanter; the lesser trochanter was upwardly and inwardly hooked. The shaft had a general outward convexity; the lower end of the shaft was sharply implanted into the expanded condylar portion, very much like the stalk of a flower. The double contour seen on the inner aspect of the left femur was caused by a muscle shadow and was not due to bone. The neck of the right femur was somewhat longer than that of the left, and its upper surface was encroached upon by the expanded and bossy great trochanter, as on the left side; the lesser trochanter also had an upward hook. There was a very well-marked inward bend at the junction of the head and neck. The shaft of the right femur had a double lateral curve, of which the upper was curved outwards, the centre of curvature being at about the junction of the upper and middle thirds, while the lower two-thirds of the bone had a general inward convexity. The left fibula was straight; the left tibia had a marked forward convexity with the centre of the curvature at about the junction of the mid- and lower thirds. The right tibia and fibula were fairly straight, having only a slight forward convexity. The ankle-joints and joints generally of the feet looked normal, the only marked deformity of bone being some flattening of the inferior surface of the right calcaneum. In summing up Dr. Simmons said

that the deformities generally suggested that the bones were slightly plastic, and they bent therefore in proportion to the stresses upon them. Thus, the long bones, which were subject to unequal stresses, showed most bending; the pelvis showed the effects of weight, while the hands and feet, which had few internal stresses, showed hardly any deformity; and the skull, which had practically no muscle pulls upon it, retained its shape except where its weight caused it to sag, as it were, around its base.

Dr. FREDERICK J. POYNTON showed a case of Imperfect Osteogenesis. The patient was a female, aged eight years, the second of four children; the other three had no signs of the condition. The parents were German Jews. The child had been under observation for six years. There was a history of soft bones at birth and fracture at 14 days. From that time there had been fractures of all the long bones at intervals, usually results of slight injuries. There had never been well-marked evidences of rickets or congenital syphilis. The child was bright and intelligent, but had never been able to walk. The course of the case was in accord with that usually found in the disease, but there were a few interesting points. One of those was that the disease seemed to be arrested some two years ago, and as the child was hopelessly crippled by the terrible distortion of the lower extremities both legs were put in excellent position by Mr. Kellock. Union followed, and the limbs were much improved. The present condition illustrated the ultimate result. He believed there was in that case, as in some others he had had under his care, an element of neglect by the parents, and no real pains were taken to keep the child's limbs from injury. A third point was the history of the development of the lateral bosses on the skull. Those followed a fall and commenced as large cephalhæmatomata. Prognathism was present. During the last 12 months the child had become thinner and there was slight pyrexia, which was apparently not infrequent in the disease. Many methods of treatment had been tried but without any obvious result. The salient deformities were: (1) bosses immediately about the ears on either side; (2) prognathism; (3) diminution in the vertical and widening in the lateral and antero-posterior diameters of the chest; (4) spinal lordosis; (5) left clavicle, old fracture; (6) right humerus, radius and ulna, old fractures; (7) right femur fractured and bent; (8) right fibula and tibia fractured, the child's foot rests on its inner side upon the bed; and (9) left femur, tibia, and fibula fractured and bent. All the long bones were exceedingly small.

Mr. A. J. WALTON showed a case of Imperfect Osteogenesis (?) for Mr. FRANK S. KIDD. The patient was a boy, aged 7, who was sent up to the London Hospital by Mr. G. Aldridge of Sheerness. At the age of three the boy fell and broke his right femur and was admitted to Chatham Hospital, where he remained seven and a half months. A large swelling developed at the site of the fracture and a diagnosis of sarcoma was made, but the father refused operation and took the boy to see Mr. W. H. Battle at St. Thomas's Hospital. The lower half of both legs became gradually bent into their present position. Two years ago the right forearm was broken by a fall. Two months ago the left upper arm was broken and set. When the splints were removed the present swelling was noted. The child had been bottled-fed and had had a patent barley. There were four children in the family; two were healthy. One other boy had a leg amputated for a similar condition and had had several fractures. The general condition was excellent; nothing abnormal was shown by the temperature chart. The urine was acid, of specific gravity 1020; there was no albumin, albumose, or sugar. The bones of the skull and face, teeth, clavicles (?), ribs, sternum, and vertebræ appeared to be healthy. The fontanelles were closed. There was no rickety rosary. The shape of the chest was normal. The left humerus had a fusiform swelling at the lower end of the bone of bony hardness. There was no pulsation or crackling to be felt in the swelling, which expanded the bone equally all round. The fracture had united. The maximum circumference of the swelling was 9½ inches. The skiagram showed a fracture in the middle of the shaft and a mass of irregularly trabeculated new bone between the fractured ends, under the periosteum of the shaft, and in the flexor muscles in front, but a large part of the swelling threw no bony shadow, though it felt of bony hardness. The extreme lower end of the humerus showed an area of central resorption of bone extending an inch up the shaft. The left forearm showed a bend in the middle of the radius and ulna. The skiagram seemed to indicate an old fracture at that level. The radius and ulna threw very faint shadows on the plate—evidence of deficient ossification. On the right forearm both bones were bent backwards, the radius about its middle, the ulna nearer its lower end. The skiagram suggested that a fracture had occurred at those levels, with deposit of periosteal callus. On the right femur there was a fusiform swelling extending the whole length of the bone, which was of bony consistency and did not pulsate. The maximum circumference was 11½ inches. The skiagram showed that the whole shaft of the bone had been expanded, and the trabeculæ had been rearranged as a wide-meshed cancellous tissue, as though the bone were filled with numerous cysts. The skiagram showed that the shaft of the right femur was bent outwards, and that at the lower end of the bone there was resorption of bony tissue with rearrangement of the trabeculæ as a wide-meshed, irregular network. That change was also to be seen in the lower epiphysis. The epiphyseal line appeared to be normal. In the upper end of the bone the normal lamellar arrangement was well shown. The appearance of the legs below the knees could be seen in the skiagrams. The tarsal bones showed a cyst-like arrangement of the trabeculæ similar to that seen in the right femur, and to a less extent in small patches in the following positions: the lower epiphysis of the right fibula, the upper end of the left tibia, the upper end of the right radius, the lower end of the left femur, parts of the pelvic bones, the glenoid portion of the left scapula, the upper ends of each humerus, and the bones around the left elbow-joint. The swellings had not altered in size during the three weeks the child had been under observation.

Dr. H. BATTY SHAW showed pictures of two cases with unusual Ulceration of the Skin. The first case showed icteric ulcers of the legs in hepato-splenomegaly. The patient was a man, aged 28 years, who had been icteric for 23 years. Urobilin was present in the urine, but no bile; the spleen especially and the liver were enlarged. He was liable to recurrent attacks of increased icterus, but of late years the attacks were less frequent. He had two ulcers, one on the outer malleolus of the right foot and one on the inner aspect of the left one; they began 15 years ago. The ulcers healed when the patient rested in bed, but broke down again on resuming ordinary life. The skin in the neighbourhood was discoloured reddish-purple. There was slight enlargement of the veins of the neighbourhood, but no varicosity. The case was shown before the Clinical Society in 1902; the icterus was in existence then. The second case showed icteric ulcers of the legs in pernicious anæmia. The patient was a woman, aged 42 years, who had had abdominal pain and vomiting for the last two years; during the same period she had been noticed to be yellow. The catamenia had always been irregular, and amenorrhœa had existed for two years. Amongst the past illnesses there were measles and whooping-cough, "inflammation of the lungs" ten years ago; quinsy five years ago. At the ages of 12 and 22 years she had had attacks of abdominal pain and vomiting similar to the present attack. She was only fairly well nourished and was very weakly. There were systolic murmurs at the apex beat of the heart and at the pulmonary cartilage; the pulse (90 to 100) was regular but of low tension (90 millimetres). There was much pyorrhœa alveolaris and the gums occasionally bled; the tongue, though pale, was otherwise normal. The liver reached two fingers' breadth below the costal margin; the splenic area of dulness was increased; the right kidney could be felt. During her stay in hospital the temperature rose from normal to 101·8° F. There was some constipation. The urine, examined seven times, always showed a faint cloud of albumin; it was pale and contained a slight excess of urobilin, no bile. The skin and conjunctivæ were lemon-tinted. The serum showed the presence of a slight amount of bile and of urobilin. The fundi oculorum were normal. A blood examination was carried out on two occasions and each time showed marked anisocytosis, poikilocytosis, and vacuolation of the red cells; megalocytes preponderated; no nucleated red cells were seen. An analysis on Jan. 18th last showed: total red cells, 935,000 per cubic millimetre; hæmoglobin, 30 per cent.;

colour index, 1·45; total white cells, 3850 per cubic millimetre; small lymphocytes, 56 per cent.; large lymphocytes, 25 per cent.; polymorphonuclear cells, 19 per cent. On the 25th it was as follows: total red cells, 1,225,000 per cubic millimetre; hæmoglobin, 30 per cent.; colour index, 1·10; total white cells, 6500 per cubic millimetre; small lymphocytes, 19 per cent.; large lymphocytes, 18 per cent.; hyaline cells, 4 per cent.; polymorphonuclear cells, 58 per cent.; and transitional cells, 1 per cent. During the last four days in the hospital the patient became mentally disturbed, developing delusions and becoming maniacal. She was allowed to go home. The development of the icteric ulcers began simultaneously six years ago as "blisters containing blood," which broke and left small ulcers. Those were present in the neighbourhood of each internal malleolus and were irregular in shape and shallow; the surrounding skin was purplish-red and a little indurated. The ulcers did not cause pain and appeared to be independent of any varicosity of the crural veins, which were normal in size and appearance. There was no history of an injury which might have caused them to develop, and there was no specific history.

Dr. BATTY SHAW also showed a case of syphilis, chyliform ascites, dropsy, and albuminuria. The patient was a man aged 28 years, who had contracted syphilis 18 months before admission to hospital, and was treated with pills containing mercury for over 12 months. Other than what appeared to have been an attack of "peritonitis" three years ago (which was recovered from in 14 days), there was no history of other antecedent illness. Two months ago his legs and abdomen began to swell; abdominal pains began, and the urine was much reduced in amount, was turbid, and was found to contain albumin; diarrhœa began at the same time and lasted three weeks. The abdominal pain was so severe as to prevent sleep. He was tapped by his local medical attendant, and on each occasion several pints of opalescent fluid were removed. On admission to hospital he was found to have ascites, and dropsy was present in the legs, sacrum, and lower back. That had persisted during his month's stay in the hospital. The temperature was over 99° F. for about 14 days and then become normal. The urine contained hyaline and granular casts; albumin was always present, varying from a total of 3 grammes to 32 grammes in the 24 hours (Esbach), the quantity of urine from 21 ounces to 100 ounces. He was tapped on two occasions and the ascitic fluid was opalescent each time and found to contain no free fat. Wassermann's reaction in the blood was positive, and an atypical spirochæta was found in the urine; the ascitic fluid did not reveal the spirochæta pallida, but gave a positive Wassermann's reaction. Half a gramme of salvarsan was injected subcutaneously on Jan. 12th and on the 14th the blood gave a negative Wassermann's reaction. Neither the ascites and dropsy nor albuminuria appeared to be influenced favourably or unfavourably by the injection, as the patient's condition on leaving the hospital was much the same as on admission. On the occasion of the present demonstration—i.e., one week after leaving the hospital—there was no trace of ascites, the liver edge could be felt below the right costal margin, and a fairly well-marked show of albumin was present in the urine.

Dr. J. D. ROLLESTON and Dr. N. S. MACNAUGHTAN communicated a report on a Tumour of the Upper Lip shown at the last meeting of the section. The tumour, which was removed by Mr. P. L. Daniel on Jan. 25th last, was found to consist of a mass of solid convoluted cords embedded in fatty and fibrous tissue, and to be attached by a pedicle to the right infra-orbital nerve, thus presenting macroscopically the appearance of a plexiform neuroma.

Dr. F. E. BATTEN showed a case of Progressive Spinal Muscular Atrophy of Infants (Werdnig-Hoffmann). The patient was a girl, aged 1 year and 9 months, the second of two children, the mother and father being healthy. The first child, a boy, died at the age of 8 months from bronchopneumonia. He was said to have been very loose in the limbs from the time of birth. The patient was born at the seventh month and was delicate for four months. She was said to kick about a good deal up to six months old, and appeared fat and healthy. When six months old she was vaccinated and cut her first tooth. She was said to be able to sit up at seven months, but was not encouraged to do so. At seven months she was able to talk a few words. Since she was 7 months old she had gradually become weaker and more helpless, and that weakness was said to have increased since October, 1910, and she could not now lift her head off the pillow. She was seen as an outpatient in June, 1910, by Dr. Gordon Holmes. She was then unable to sit up and had weakness of the back; she could make no attempt to stand. All the deep reflexes were absent. The Mongoloid appearance of the child was noticed. She was placed on thyroid half a gramme twice a day and improved, and was noted as "much improved" in October, 1910. The bowels had been constipated. She took food well, and as she lay in bed appeared quite healthy. The child was fairly nourished. She was happy and contented, said little words, and took notice of all that went on. She heard and saw well, and as far as was possible obeyed commands. The palpebral fissure was small and oval, and that gave her the appearance described as "Mongoloid," but there was no obliquity of the eyebrows outward, the skin was quite soft, the head of normal size, and the tongue smooth, so that there was nothing to suggest the child was a Mongolian idiot, though the term "Mongoloid" was justified. The incisors, canines, and first molar teeth were all present. The movements of the eyes, tongue, jaw, and lips were normal. The optic discs were normal. There was nothing wrong with the heart, lungs, or abdominal viscera. The chest was long and narrow, and on inspiration the intercostal spaces sank in, and it was clear that respiration was carried on by the diaphragm alone, which acted vigorously. The abdominal muscles were weak but not completely paralysed. If the child were placed in a sitting position the head fell forward, backward, or sideways, the neck muscles being powerless, the back became bent, and there was no power in the trunk muscles either to flex or to straighten the back. When placed flat on the bed, however, the spine was perfectly straight. The arms lay, as a rule, flexed at the side of the chest; the child could make little movements with the fingers and could grasp objects feebly. She could just flex the elbow and pronate, but not supinate the hand. The forearms were more or less fixed in a position of pronation. There was no power of movement in the shoulder muscles. The legs were almost powerless; there was practically no power of flexion of the hips or knees, but there was a little power in flexion and extension of the ankle and toes. The ham-strings were contracted so that the right leg could not be fully extended. The limbs were thin and the muscles were wasted, but that wasting was to a considerable extent covered up by the subcutaneous fat. The loss of tone in the muscles was very considerable, but the feet could not be flexed over the shoulders, nor could the arms be crossed behind the child's back, positions which were possible when the hypotonia was marked in a child. Sensation to ordinary stimuli appeared unimpaired all over the body. The knee-jerks, ankle-jerks, and all the deep reflexes were absent. The abdominal reflexes and plantar reflexes could not be obtained. The sphincter ani was normal. The electric reaction showed complete loss of response to faradism in all the paralysed muscles, but the muscles of the hand responded normally. The child bore a very strong current without evincing any signs of pain. In short, the child had an almost complete flaccid paralysis of all the muscles of the neck, trunk, and limbs, the muscles of the face, eyes, and diaphragm alone remaining normal.

Dr. WILFRED HARRIS considered that Dr. Batten had proved his case, and Dr. POYNTON related some cases in which the arms were completely paralysed; the fingers and toes, however, were just able to be moved.

## SECTION OF ANÆSTHETICS.

*Death under Chloroform.—Anæsthesia in Post-pharyngeal Abscess.—Reflex Effects from Stimulation of the Nasal Mucous Membrane during Anæsthesia.—Cheyne-Stokes Respiration during Anæsthesia.*

A MEETING of this section was held on Feb. 3rd, Dr. W. J. MCCARDIE, the President, being in the chair.

The PRESIDENT reported a case of Death under Chloroform due to inspiration of gummatous material. The patient, a man aged 43 years, was to be operated on for ulcer of the scrotum and hernia of the testis. The house surgeon administered chloroform on a Schimmelbusch mask, this anæsthetic being selected on account of the presence of bronchitis. There was slight struggling during induction. When the patient

was moved on to the operating table severe cyanosis and embarrassed respiration suddenly occurred, respiration shortly stopping entirely. The pulse was good when the respiratory failure occurred. Restorative measures were of no avail. Post mortem, a broken-down gumma was found at the bifurcation of the trachea, which had evidently burst during the anæsthesia.—Dr. BARTON questioned whether in view of the existing bronchitis the case should have been operated on at all.—Mr. C. CARTER BRAINE asked whether artificial respiration had been performed with the patient lying on his side.

Mr. R. GILL read a short paper on Anæsthesia in Post-pharyngeal Abscess. He described a case of a child, aged 3 months, with difficulty in breathing, who was to be operated on for adenoids. Light anæsthesia was induced with chloroform. On opening the mouth a swelling was seen bulging forward from the back of the pharynx which produced further obstruction the more the mouth was opened. The mass was incised and a large quantity of matter rapidly discharged, filling mouth and nose. The child, who had become dusky, was suspended head downwards. After the matter had been rapidly swabbed out, the tongue was hooked forward by passing the finger along the dorsum. The patient recovered. Great stress was laid on the importance in this case of the inverted position. Mr. Gill also reported a case in which during an operation on the chest there was sudden hæmorrhage from the nose and mouth, producing symptoms of suffocation. The patient's head was lowered over the end of the operating table, and when the flow of blood had diminished the anæsthetist drew the base of the tongue forward with his finger, compressing meanwhile the chest with his elbows.—Mr. H. BELLAMY GARDNER considered that it would be better to operate on cases of post-pharyngeal abscess without an anæsthetic. The operation was generally trivial.

Dr. J. BLUMFELD read a short paper on Reflex Effects from Stimulation of the Nasal Mucous Membrane during Anæsthesia. He described a case of heart failure after the injection of adrenalin. The patient who was to be operated on for deviated septum was anæsthetised with C E. mixture. In seven minutes he was declared ready, the colour was good, and corneal reflex present. He was placed in a sitting posture and as there was slight coughing more anæsthetic was administered. Six minims of a 1 in 4000 solution of adrenalin were then injected into the nasal mucous membrane. Immediately there was extreme pallor, dilated pupil, and the usual symptoms of severe cardiac depression. These passed off and the operation was performed without further trouble, chloroform being administered by Junker's apparatus.—Dr. A. L. FLEMMING had seen faintness caused by adrenalin, but not by weak solutions; he considered 1 in 4000 too strong.—Mr. BRAINE recorded a case in which sudden death had followed the injection of adrenalin into the tonsil in the case of a girl who was to undergo tonsillotomy.—Dr. R. J. PROBYN-WILLIAMS questioned whether the change to the sitting posture might not have been a factor in the depression produced.—Dr. J. F. W. SILK thought that the drug was the chief cause; he had seen faintness produced by plugs of cocaine and eucaine in the nose.—Mr. BELLAMY GARDNER believed that adrenalin injected into the tissues caused shock, but when it was *applied* only it did not do so. He did not believe in the sitting posture as a causal factor.—Mr. H. S. BARWELL said that he was the operator in the case described by Dr. Blumfeld. The shock did not appear till some time after the sitting posture had been assumed, and he considered that it was due to the adrenalin. He found that adrenalin had a much more depressing effect on anæsthetised than on conscious persons, and for the latter he often used large doses with impunity. He had never seen a case of shock under adrenalin when the anæsthesia was induced by ether.—Dr. F. W. HEWITT considered that the low blood pressure under chloroform was an important factor in the circulatory depression produced by adrenalin, and explained why it was that such depression did not occur in etherised or conscious patients.—The PRESIDENT stated that he also had had cases of circulatory depression due to adrenalin. He advised interruption of the administration of the anæsthetic for a time during the injection of adrenalin.—Mr. HARVEY HILLIARD stated that he had seen cases of cardiac inhibition when plugging the nostrils under anæsthesia, but not when the plugging was performed previous to induction.

Dr. C. H. M. HUGHES made a short communication on Cheyne-Stokes Respiration during Anæsthesia. He described the case of a man, aged 52 years, who underwent gastrostomy for malignant disease of the larynx after tracheotomy. Chloroform was administered on lint over the tracheotomy opening and followed by C.E. After about four minutes respiration stopped, the pupils being small, and corneal reflex present. After 30 seconds breathing was resumed. Throughout the operation, which lasted about 45 minutes, there occurred about every five to ten minutes periods of apnœa of 30 to 40 seconds, alternating with regular breathing of good volume. There was no straining. After the anæsthesia was stopped the condition gradually passed off.—Dr. BARTON had seen at least half a dozen cases of Cheyne-Stokes breathing under anæsthesia. They were all either under chloroform or C.E.—The PRESIDENT had found six cases in his records; they were all but one old men with rigid chests. The one exception was a man aged 48 years, who was operated on for cerebral tumour under chloroform and C.E.

Mr. F. COLEMAN showed a new form of Stopcock for Gas and Air Administration.

## LARYNGOLOGICAL SECTION.

*Exhibition of Cases and Specimens.*

A MEETING of this section was held on Feb. 3rd, Dr. P. WATSON-WILLIAMS, the President, being in the chair.

The following cases and specimens were shown:—

Dr. G. WILLIAM HILL, in conjunction with Dr. G. HERSCHELL, demonstrated on the living subject a combined direct and indirect method of Œsophago-gastroscopy. An excellent view was obtained of the stomach and lower part of the œsophagus, and the great value of this method was pointed out. The stomach was dilated with air and previously washed out by a special instrument.

Mr. FRANK A. ROSE and Mr. CECIL I. GRAHAM: Cases of Tuberculous Tonsillitis, this in Mr. Graham's case being associated with tuberculous laryngitis. An interesting discussion resulted with reference to the frequency of primary tuberculous disease of the tonsils.

Mr. HERBERT TILLEY: Plaster casts of an Unusual Malformation of the Upper Jaw. There was a markedly V-shaped condition of the hard palate, while the alveolar borders of the upper jaw were hypertrophied. There were also well-marked alar collapse and much septal irregularity. Pyorrhœa alveolaris was also present.

Dr. L. H. PEGLER: Cases of Malignant Disease of the Larynx and extensive Ulceration of the Pharynx and Tonsils, considered malignant. Also a case of Tuberculous Disease of the Vocal Cords, with secondary tuberculous infection of an adenoid growth in the naso-pharynx. The patient was a fur sorter. Both cords were thin and ulcerated; the right cord was also longitudinally split. They approximated badly, causing complete aphonia, but there was neither pallor nor œdema. There were no lung signs, sweating, or loss of flesh. The general health was excellent. Since the first onset a small mass of adenoids had become ulcerated. Sections of this under the microscope displayed giant cell systems, and though staining of tubercle bacilli had not been successful, matter obtained thence and injected into guinea-pigs infected the glands and viscera. A preparation from one animal was shown, and a section of one of the guinea-pig's glands showing tubercle bacilli. Von Pirquet's reaction was negative in this patient.

Mr. E. A. PETERS: Malignant Disease of a Tonsil, with enlarged glands in the neck, now undergoing treatment by radium.

Dr. J. DONELAN: Swelling at the Junction of the Right Vocal Cord and Apex of the Vocal Process in a professional singer aged 52 years.

Dr. DAN MCKENZIE: Papilloma of the Larynx in a child. Obstruction to breathing had been so great that tracheotomy had to be performed six months ago; subsequently several papillomata were removed by the direct method.

Mr. G. W. BADGEROW: A case of Lingual Thyroid in a female aged 17 years. There was a hemispherical swelling over the base of the tongue, which was hard to the feel.—Mr. H BETHAM ROBINSON detected enlarged glands in the neck, and thought the case might possibly turn out to be one of lymphoma or lympho-sarcoma.

Dr. G. C. CATHCART: A case of Aphonia (recurrent) in a woman aged 36 years. The patient had been in the Mount

Vernon Hospital. On laryngological examination it was seen that the mucous membrane over the arytenoids and inter-arytenoid space was swollen and that the cords did not meet properly.—Dr. W. JOBSON HORNE pointed out the probability of certain cases of aphonia supposed to be hysterical being really tuberculous.

Mr. SOMERVILLE HASTINGS: A case of Ulceration of the Left Tonsil in a man aged 56 years. The ulcer had lasted for over two months with very little alteration. It extended to the anterior pillar of the fauces, and presented a curious dead-white appearance. There was no history of syphilis, but pyorrhœa alveolaris was present. Klebs-Löffler bacilli could not be found, and the microscopical appearances of a piece removed did not favour malignancy. No glands could be felt.—Dr. W. H. KELSON pointed out how much the dead-white appearance resembled that seen in certain malignant growths of the larynx.

Mr. NORMAN PATTERSON: 1. Primary Sore in the Vestibule of the Nose in a female patient aged 38 years. The lesion was an indurated area which gradually increased in size, and was accompanied by some enlargement of the glands in the submaxillary region. There had been a great deal of pain, extending on to the face. Spirochætæ had been found and a positive Wassermann reaction obtained. 2. Epithelioma of the Epiglottis in a man aged 40 years. The patient had noticed pain on swallowing for the last two months, and shooting from the tip of the great cornu of the hyoid bone on the left side towards the back of the ear. He complained of a great tendency for the saliva to accumulate in the throat. Some glands were felt, especially on the left side, which might perhaps be accounted for by the septic condition of the teeth.

The PRESIDENT: A man suffering from Stricture of the Œsophagus situated 11½ inches from the incisor teeth. It was considered to be malignant, and was shown to elicit views as to the suitability of treatment by radium or otherwise.

Dr. H. W. FITZGERALD POWELL: A man, aged 48 years, with history of difficulty in breathing of six months' duration. Examination showed a large mass of growth involving the left side of the larynx, filling up the cavity of that organ, involving the tongue and aryepiglottic folds. There was a history of syphilis, but the Wassermann reaction was negative.

Dr. H. J. DAVIS: A man, aged 71 years, whose upper jaw had been excised for Malignant Disease of the Antrum, following polypi and antral empyema. Some œdema of the lower eyelid still remained.

Dr. HILL: Tuberculous Disease of the Nose in a child. There had also been disease in the superior maxillary bone on the left side.

## OPHTHALMOLOGICAL SOCIETY.

*Histo-pathology of Papillœdema.—Exhibition of Cases.*

A MEETING of this society was held on Feb. 9th, Mr. GUSTAVUS HARTRIDGE, Vice-President, being in the chair.

Mr. LESLIE J. PATON and Dr. GORDON M. HOLMES communicated a paper on Histo-pathology of Papillœdema. It was a preliminary account of their investigations into the pathology of papillœdema. Their work was based on the histological examination of 60 eyes, all from cases in the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury. The conclusions they formed from these cases were that the so-called "optic neuritis" was a simple congestive œdema of the disc, and was not in any way an inflammatory phenomenon. Inflammation when it did occur was slight in amount, limited in its distribution and secondary in its nature. The hæmorrhages that occurred were in the main congestive, but partly due to stretching and rupture of small vessels by the swelling disc. The larger white patches that occurred on or near the disc were due to degeneration of the nerve fibres. This degeneration showed itself first by varicosities appearing on the nerve fibres, which later swelled up into elliptical or globular bodies known as "cytoid bodies." These might lose their connexion with the nerve fibre from which they developed, and consequently undergo fatty degeneration. The smaller bright-white spots arranged in fan-shaped fashion between the disc and macula were due to œdema raising the membrana limitans interna into vesicles. The changes produced as the disc became atrophic were, (*a*) occlusion of the smaller vessels by endothelial proliferation and adventitial thickening in the walls of the larger vessels; (*b*) a glial proliferation which varied in intensity with the degree of atrophy; and (*c*) proliferation in the mesoblastic tissues round the blood-vessels and without, forming the lamina cribrosa. Mr. Paton and Dr. Holmes considered that the hypothesis which best explained all the known facts of tumour papillœdema was that, owing to the rise of intracranial pressure, there was a communicated rise of pressure in the nerve sheath. The portion of the central vein lying in the nerve sheath behaved, in response to this raised pressure, like a cerebral vein, and the blood pressure in it was consequently raised to the same extent. This produced a congestion of all the connexions of the central vein distal from that point. In addition to causing venous congestion the raised intra-vaginal tension obstructed the normal drainage of lymph from the disc and nerve and caused a lymph stasis, so that there was both an increased output and a diminished drainage. The tissue tension in the nerve itself was raised, so there was no marked difference between intravenous pressure and tissue pressure until the lamina cribrosa was reached within the range of the relatively lower, though normal, intra-ocular tension. The paper was illustrated by a number of lantern slides.—Mr. S. JOHNSON TAYLOR asked whether Mr. Paton and Dr. Holmes had seen any case early enough to confirm what was clinically found—viz., that the earliest evidence of optic neuritis was in the upper and inner part of the disc. He had under his care at present a case which confirmed that.—Dr. JAMES TAYLOR spoke appreciatively of the extensive nature of the research. It occurred to him that it might lead to a revival of the old method of tapping the optic nerve from the front with the view of relieving the œdema. If so, that would cause one to view more hopefully cases of extreme papillœdema.—Dr. HOLMES, in reply to Dr. Taylor, said the method mentioned would only be feasible if a fistula were left in the sheath to allow the cerebro-spinal fluid to drain away.—Mr. PATON replied that the papillœdema nearly always commenced at the upper border first and later in the lower. But when only the upper border showed œdema there was shrinkage of the tissue. The disc looked normal, but there was evidence of slight œdema commencing at its upper edge.

Mr. E. W. BREWERTON showed a case of Symmetrical Marginal Corneal Degeneration.

Mr. H. B. GRIMSDALE showed a patient with Irideremia and Deformity of Lens.

Mr. C. HIGGENS showed a patient on whom he performed his operation of Dacryocysto-rhinostomy, and described the procedure.

Mr. E. TREACHER COLLINS exhibited a case of Widespread Exudation internal to the choroid and beneath the retinal vessels, giving rise to a white reflex.

## SOCIETY OF MEDICAL OFFICERS OF HEALTH.

*The Sanitary Service of the Territorial Force.*

A MEETING of this society was held on Feb. 10th, Dr. W. G. WILLOUGHBY, the President, being in the chair.

Lieutenant-Colonel C. H. MELVILLE, R.A.M.C., professor of hygiene, Royal Army Medical College, London, introduced a discussion on the Sanitary Service of the Territorial Force. He dealt mainly with the duties of those officers of the Territorial sanitary service whose services would be available on mobilisation, or as they are sometimes termed, officers on the *à la suite* list, of whom 106 had been gazetted. He touched briefly, however, on some of the duties of the divisional sanitary officer, which were very extensive and brought him into connexion with the life of the soldier at all points, except those connected with actual fighting. Thus he had to exercise a general supervision over the sanitary condition of all places occupied by the troops of the command to which he was attached, watch the health conditions of all camps, &c., and investigate the cause of any undue prevalence of disease among the troops or the inhabitants. He had to advise on the selection from a sanitary point of view of sites for camps

and bivouacs, and on questions relating to the sanitary conditions of towns, villages, or buildings about to be occupied. He must advise regarding the purification and distribution of water for drinking purposes, with respect to latrines and urinals, the disposal of refuse, the burial of the dead, and the disposal of the carcasses of animals. The duties of *à la suite* officers referred to the habitations of troops whether in camps or in buildings, to water-supplies, to roads, to the prevalence of infectious diseases in various localities, and such-like matters. The quartermaster-general's department would require advice as to the suitability from a sanitary point of view of buildings to be used as temporary barracks and of camping grounds. The information required of the sanitary officers was given in some detail by Colonel Melville, who then referred to the necessity for describing the water-supply of a district as a whole. For this purpose each stream or river should be traced from its source, till it passed into some other district. The presence of any dangerous source of pollution should be noted, with its exact position and distance from the water. This collection of information would fill a very serious gap in our knowledge, and any officer on the *à la suite* list who should set about collecting it as regards his own district, and more especially along the main lines of communication, would be doing a useful piece of work and rendering the State good service. Other duties of the sanitary officers would include the cleaning up of camping grounds after they had been utilised by troops passing hurriedly through a district, and maybe the cleaning up of a battle-field. Colonel Melville emphasised the necessity of every sanitary officer at once making himself familiar with his duties and at once setting about the collection of information which would be available when the emergency arose. Every officer, he said, who promised that his services would be available on mobilisation was bound by every rule to see that his services were worth having on mobilisation.

In the course of the discussion the PRESIDENT pointed out that Colonel Melville's paper was not by any means confined in interest to the officers in the *à la suite* service, but that it concerned all medical officers of health.

Mr. F. E. FREMANTLE considered that the scheme of duties presented was not at all complete. In the event of a war in this country the Territorial Forces would have to depend, so far as sanitation was concerned, upon the civil sanitary administration, and this should be brought into closer touch with the military sanitary service.

Mr. E. SERGEANT and Dr. J. R. KAYE emphasised the importance of a foreknowledge of suitable camping grounds and of water-supplies. Dr. Kaye also pointed out that the art of hygiene was as important in warfare as the art of strategy, and that disease was the master in every campaign.

Dr. P. CALDWELL SMITH referred to the desirability of the members of the *à la suite* service obtaining a knowledge of camp life and of military sanitation.

Mr. H. BEALE COLLINS and Mr. HERBERT JONES considered that the whole country should be mapped out into areas which should be allotted to particular members of the service.

Professor W. R. SMITH agreed that it was of the greatest importance for the *à la suite* officers to become familiar with military life, and that they look at their work through military spectacles.

Dr. W. BUTLER, Dr. H. COOPER PATTIN, and Mr. J. TUBB-THOMAS also took part in the discussion.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

*Acute Anterior Poliomyelitis.—The Medical Examination of Employees.—Exhibition of Cases.*

A MEETING of this society was held on Feb. 1st, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. EDWIN BRAMWELL and Dr. D. W. CURRIE read a paper on Acute Anterior Poliomyelitis. No disease had occupied such a prominent place in neurological literature during the past year or two. Epidemics had occurred in many parts of Europe and America during the last hemi-decade. A localised epidemic was described. The character of the symptoms was instructive. The epidemic consisted of five cases. Five of 12 children living in a farmstead which consisted of four dwelling-houses were affected. Three of four children in one house suffered and both children in the adjacent house. Fever, headache, pain at the back of the neck, neck rigidity, and head retraction were conspicuous features. Vomiting occurred in two cases. In one of the first cases pain in the lower limbs was so severe as to suggest acute rheumatism. All the patients recovered. Two presented paralysis of the limbs with abolition of the tendon jerks and other features characteristic of typical poliomyelitis. In one case a temporary facial paralysis and in another a strabismus were the only paralytic symptoms. The fifth patient recovered without manifesting definite paralysis at any period. The circumstance that the five patients were taken ill within a few days of one another (Sept. 12th to 24th), together with the similar symptoms of onset, makes it certain that all the cases were due to the same causal agent. Three of the cases might well have escaped recognition had they been met with singly. The number of cases with cerebral palsies and in which complete recovery had taken place had been a generally recognised feature in recent epidemics. This epidemic was extremely instructive in relation to the incubation period of the disease. The farmstead in which the patients lived occupied a somewhat isolated situation, and the individual cases developed one after the other. The two families might be conveniently designated A and B and the children Aa, Ab, Ba, Bb, Bc, and Bd. Ba, Bb, and Bc slept in the same bed, while Bd slept in a cradle in another room together with Mr. and Mrs. B. Bb first manifested symptoms on Sept. 12th, Ba on Sept. 16th, and Bd on Sept. 18th, while Bc escaped. Ba was no doubt infected by Bb. Bd might have been infected either by Bb or Ba, or the infection might conceivably have been carried by Mrs. or Mr. B. In this connexion it was interesting to note that on and after Sept. 14th Bb slept in the same room as Bd. Ab was taken ill on Sept. 20th, Aa on Sept. 24th. Aa was no doubt infected by Ab, for they slept in the same bed. It would seem almost certain that Ab must have been infected by one of the B's. Both Mrs. A and Mrs. B positively stated that the A children had not been in the B's house, or the B's in the A's house after Bb was taken ill. On Sept. 16th, and again on the 18th and 19th, Mrs. A visited the B's, and on each of the two dates last mentioned she remained in the house for several hours helping to nurse Bd. These data would seem to indicate that the incubation period in this particular epidemic was four days, or not longer than four days, while they suggest that the infection might be carried by a third person. The comparative frequency of poliomyelitis during the past autumn was next referred to. Statistics for several years from the Edinburgh Royal Hospital for Sick Children and other hospitals were presented, and numerous opinions quoted from different centres in England and Scotland in order to demonstrate the truth of this assertion. It was further mentioned that two or three local epidemics had occurred recently in various parts of England. So far as Dr. Bramwell and Dr. Currie could ascertain no abnormal increase in frequency of the disease, curiously enough, had been observed in London. Finally, the possibility of some sort of relationship between poliomyelitis and epidemic cerebro-spinal meningitis was referred to. Dr. Bramwell and Dr. Currie would have it clearly understood that they fully realised the existence of certain pronounced points of difference, yet they were of opinion that the possibility of some association between the two diseases was worthy of consideration. Both diseases occurred in a sporadic and epidemic form, both affected children more especially, in both the degree of contagion appeared to be much the same, and in both the initial symptoms were very similar. The most striking point, however, was the circumstance that a few years ago epidemics of cerebro-spinal meningitis, previously of great rarity, were met with in many localities throughout Europe and America, while two or three years later epidemics of poliomyelitis, practically unknown hitherto, were of widespread occurrence.

—Dr. G. H. MELVILLE DUNLOP said that he fully endorsed the fact that recently there had been a severe and widespread epidemic of poliomyelitis in the country, and his own experience had borne this out. Within the last six months over 40 cases had been under treatment in the Royal Hospital for Sick Children. The average usual number in his own

ward was one or two, as contrasted with 16 at present, and he had noted the same increase in private practice. He had remarked on the very severe and prolonged character of the premonitory symptoms and on the difficulty, or even impossibility, of arriving at an early diagnosis, as, for example, the child lying comatose for ten days before paralysis showed itself; in other cases there was wild delirium preceded by convulsions, while in still others the symptoms were those of tuberculous meningitis. He referred to the widespread nature of the paralysis in many cases and to others in which bulbar symptoms were present. In two cases he had observed paralysis of the face as well as paralysis of the limbs. From 70 to 80 per cent. of the cases occurred within the first three years of life, but he had been struck with the fact that in the present epidemic the average age was much higher—viz., from 4 to 11 years. The prognosis was, however, very much more satisfactory than what one had been accustomed to give formerly, and he had noted complete recovery taking place within four months even in cases of complete paralysis. In the great majority of cases the prognosis was entirely favourable.—Dr. J. H. HARVEY PIRIE said that he had seen the cases described along with Dr. Currie. Some were very interesting as diagnosis could not have been made unless for the epidemic nature. If cases should recur this summer special attention should be paid to early diagnosis with a view to early isolation. The disease began as a meningitis and this accounted for the headache, rigidity, and fever as early symptoms. An examination of the cerebro-spinal fluid was useful in the prodromal period as it showed increased pressure and excess of mononuclear cells, which signs disappeared when paralysis came on. He thought that the use of urotropine was beneficial in such cases as formalin was rendered free in the cerebro-spinal fluid.—The PRESIDENT alluded to the fact that the symptoms in the epidemic form of the disease differed from those observed in sporadic cases. In the epidemic under discussion the cases were so isolated that they allowed conclusions to be drawn very clearly. Fixing the incubation period at or about four days seemed an important point. It was unfortunate that bacteriology afforded no help in the diagnosis of poliomyelitis while it revealed the organism in cerebro-spinal meningitis.—Dr. A. DINGWALL FORDYCE, Dr. JOHN THOMSON, and Dr. W. T. RITCHIE took part in the discussion.

Dr. H. G. LANGWILL read a paper on the Medical Examination of Employees. He said that the practice of making a medical inspection of individuals with a view to the early detection of actual disease or a liability thereto was becoming of recent years more widespread. The need for a wider inspection of workmen in all kinds of employment had been borne in upon employers in view of the recent Workmen's Compensation Acts, and more especially the wide interpretations which had been given in various courts to the term "accident." It was not to be wondered at that shipowners had found it still more urgently necessary for their employees to be medically examined because of (1) the essentially hazardous nature of much of their work; (2) the shipowner was liable for accidents not only when their employees were at their work but also when they were asleep (thus, if a seaman were injured while in his bunk (e.g., by a collision) he fell to be compensated, the work being a "whole-time" employment); (3) owing to the absence in the great majority of seagoing vessels of any qualified medical aid a slight injury might have serious or fatal results; and (4) under a recent Merchant Shipping Act the owners were liable for the expense of treatment of illness in any member of the crew, and if he had been left ashore for treatment they were liable for his expenses until he was landed in the United Kingdom. The detection of any probable causes of disability before the man joined his ship was of considerable importance. No substitute for a sick man could be got at sea, and the vessel had to be worked by those who were fit. This system of inspection was instituted in 1907 by the Shipping Federation, who under the guidance of skilled medical men drew up a uniform system of medical examination for use in all ports, a method of recording the results and a schedule of the various diseases or surgical affections to be reported on. Dr. Langwill held strongly that there was not the same need for a high standard of physical fitness in the case of men making short voyages as contrasted with those taking voyages of weeks' or months' duration. Medical examiners were appointed for each port and their duties were: (1) to medically inspect each member of the crew before "signing on"; and (2) to examine employees who alleged that they had sustained injuries at their work. Dr. Langwill emphasised that it was only an *inspection* or survey of the men that was made and not a medical examination of a patient in the ordinary sense. It was thus different from the medical examination of entrants to the Post-office, Customs, &c.—no family history was asked nor was the urine examined. The main points to which attention was directed were: (1) Eyesight; (2) hernia; (3) venereal diseases; (4) varicose veins; (5) ulcers or previous injuries; (6) heart and blood-vessels; and (7) giddiness and fits. The original instructions stated that "only officers and deck hands were to be tested for form and colour tests"; firemen and stewards were exempted, but defective eyesight in any employee on board ship might result in serious financial consequences for the owner owing to permanent blindness resulting from slight injury or disease in a patient unable to secure skilled treatment at the proper time. Thus from a compensation point of view a good standard of eyesight was necessary. Dr. Langwill had found it very difficult to test firemen by the ordinary types, as owing to the glare of the furnaces they cannot see letters clearly at a distance. Personally, he was inclined to advise the rejection of a fireman who had practically only one eye available for distant vision, as the risk of accident to this eye had always to be borne in mind. As regarded officers and deck hands, the Board of Trade did not at present require the eyes to be tested separately, and the standard at present required was that more than half the letters in the fifth line of the test Snellen's sheets must be read correctly at 16 feet. Unless there was apparent inequality of visual power in the two eyes he did not test the eyes separately. Fairly frequently it occurred that the seaman who was very defective in making out the test-types was yet said by his officers "to be very good at picking up the land or lights at sea." Dr. Langwill supposed that the man's *light sense* was better than his *form vision*, and that it was the *light sense* which was relied upon greatly in "look-out" duty. In testing *colour vision* wools were used, but instead of asking the candidate to match certain colours Dr. Langwill's practice was to show him a red or green skein, and on his naming it correctly to ask him to pick out some more reds or greens while the examiner concealed the original skein. What was required of the seaman was to pick up a red or a green light *individually* at sea and not by comparison. Coloured lights took on different tints in foggy or misty atmospheres, and the most practical method of testing colour vision would be to try the man at sea with actual lights under various weather conditions. A large proportion of Dr. Langwill's defective colour candidates came from Orkney and Shetland. Hernia occasioned the rejection of a goodly proportion of men. When the hernia was small and kept up by a well-fitting truss the man was usually passed, but Dr. Langwill had doubts as to the advisability of this, as the truss was not always worn and was not always effective in severe straining or might be broken. He asked if a man who had had a "radical cure" performed was really no more likely to develop hernia again than one who had never been ruptured. He felt inclined to order a man who had been radically cured at least to possess a truss for use if bulging should show itself. Was the risk of strangulation as great in the case of old-standing hernias as in those newly developed? Should a man with a small umbilical hernia be rejected? Did strangulation occur at all often in the hernial protrusions at abdominal scars? Venereal diseases did not bulk so largely as might have been expected. Out of 930 men examined in 1910 only seven were rejected from this cause. It was difficult to know how to act as regarded varicose veins. Unless they were very pronounced the man was generally passed on condition that he wore an elastic stocking. Heart and blood-vessels:—As regarded valvular disease, if compensation was well established the man was usually passed. Unless the voyage was long, when he was advised to seek another ship, aneurysm formed one of the most difficult problems, and especially after the recent decision of the House of Lords, and the detection of intra-thoracic aneurysm was very difficult. As to the fitness of an employee to resume work after an illness, that was not always easy to answer. Of two men sent to him suffering from "cardiac debility" he found that one had suffered from recurring attacks of dyspnœa and debility for 15 years, while the other gave a

history of marked anginal attacks of recent date after exertion and having a very high tension pulse. Dr. Langwill advised the employers as regarded the latter man that they ran undoubted risk from his death occurring suddenly. As regarded examination of employees *after injuries* last year he reported on upward of 60 such cases. A very real difficulty was that of getting *after-treatment* of the patient carried out after the man had ceased attending hospital; thus joints might become permanently stiff and the prospect of resuming work was remote in such circumstances. Until the law allowed part of the compensation benefits to be expended by the employer in getting the man fitted for his work, the only way seemed to be to keep the man under treatment by the house surgeon. Another trouble was that the health of the man might suffer as a result of the endeavour to live on half pay compensation money. A third difficulty was that of starting seamen after an injury with any kind of light work and unless he were "able-bodied" he might be a source of compensation risk to the employers.—Professor F. M. CAIRD thought that in every case of hernia in seafaring men a radical cure should be performed, as in the majority of cases a perfectly good result was obtained, and in those candidates for the army and navy upon whom he had operated there had been no relapse. Still, each man so treated should possess a truss in case of accidents. He thought that the older-standing hernias with a large ring were less likely to become strangulated than those with a small opening.—Dr. D. CHALMERS WATSON, Dr. W. MACRAE TAYLOR, Dr. JAMES RITCHIE, Mr. ALEXANDER MILES, and the PRESIDENT took part in the discussion.

Professor CAIRD showed (1) Carcinoma of the Rectum removed by the abdomino-sacral method. The patient was a woman, aged 57 years, who had had symptoms of rectal carcinoma for four months. Local examination revealed a large tumour encircling the bowel just within reach of the finger. An operation was performed on Dec. 20th, 1910. The abdomen was explored and the tumour found at the floor of the pouch of Douglas; the peritoneum round it was divided. A parasacral incision was made and the lower end of the sacrum divided; delivery of the tumour was accomplished through the sacral wound; it was resected, and end-to-end suture of the bowel was performed.

Professor H. ALEXIS THOMSON showed a boy, aged 13 years, who had been run over by a motor-car on Oct. 27th, 1910, and admitted to the hospital unconscious. Blood was present in the vomit and in the urine. An apparently complete recovery took place. He was, however, readmitted on Nov. 29th on account of sickness and with a swollen, tense abdomen due to an accumulation in the lesser sac. On the following day the abdomen was slack, the fluid having escaped into the greater sac. Incision and drainage of both sacs was performed, the fluid in the sacs being quite clear. He was discharged, but again readmitted on Jan. 20th, 1911, with another tense accumulation in the lesser sac. Formerly such cases were termed pancreatic cysts; they were probably traumatic effusions due to a tearing of the peritoneum.

## GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

*Pathology of the Embryo in Relation to Abortion.—Congenital Stenosis of the Pylorus in an Infant.—Exhibition of Specimens.*

A MEETING of this society was held on Jan. 25th, Dr. A. W. RUSSELL, the President, being in the chair.

Dr. JOHN LINDSAY read a paper on the Pathology of the Embryo in Relation to Abortion. He showed photomicrographs of five embryos of the first and second months, all of them malformed and four of them dwarfed. There was demonstrated from the sections cell proliferation in the mesoderm such that the tissue did not grow, but its meshes became filled with small round cells which also invaded the hollow organs and body cavities, the specialised tissue cells disappearing before the invasion. The whole of some of the embryos and parts of others showed only undifferentiated round cells in various stages of degeneration. The evidence was clear that the degenerative changes were necrobiotic and not due to post-mortem maceration. The ectoderm was intact and well preserved in all the embryos. The pathology being that of malnutrition, the causation was referred to maternal blood states, and it was suggested that similar changes leading to the dissolution of minute embryos rather than the maceration of embryos of a size conforming to the gestation period accounted for the empty decidual sacs which were frequent in abortions of the second month.—Dr. A. LOUISE MCILROY asked if there was evidence of thyroid insufficiency in any of the maternal cases. The statement that albumin in the urine was associated with malnutrition in the embryo was of interest when it was remembered that experimental work on cats showed that removal of the thyroid caused albumin in the urine, and the removal of the thyroid in pregnant animals caused hypertrophy of that gland in the fœtus with diminished function.—Dr. J. H. TEACHER agreed with the conclusions that erroneous development of the embryo was a common cause of abortion, and that it was in all probability the expression of defective nutrition or toxic influence acting through the medium of the maternal blood. With regard to those cases in which the embryo was entirely absent, he was of the opinion that they were more readily explained by complete failure of development on the part of the embryonic rudiment than by maceration of an embryo which had been formed and possibly grown to a considerable size. While the latter cause could not be excluded, it was apparent from the condition found in the very earliest stages that the embryonic rudiment might be completely absent—e g., Leopold's ovum of 1·5 millimetres. While it was probable that ova of this class would be extruded at a very early stage, it was clear that there was sufficient power of independent growth in the placental portion of the ovum to permit of development to a considerable size. In cases of this class there might be not so much unsatisfactory nutritive conditions as simple lack of formative power in the fertilised ovum, so that although the early stages of formation were passed in safety, a time came when the power of growth was spent and the ovum ceased to grow and was expelled. He disagreed with Dr. Lindsay as to the greater frequency of abortion in ova fertilised towards the end of the intermenstrual period. Doubtless on the analogy between the œstrous cycle and the menstrual cycle, the earlier part of the period might reasonably be regarded as the normal one for fertilisation, but facts were wanting to prove that the latter part of the period was unfavourable to continued development, and the histories of various ova which had been admitted to the Normen-Tafeln of Human Embryology (Keibel) showed that normal development might result from fertilisation in the latter parts of the intermenstrual period.

Dr. J. T. WEST read a paper on, and showed specimen of, Congenital Stenosis of the Pylorus in an Infant. The child was quite healthy at birth, and weighed 7½ pounds. It was applied to the breast on the second day and suckled at regular intervals. When it was one month old vomiting began and gradually became much worse. The child lost weight. The abdomen was distended on account of the dilated stomach and the characteristic splashing sound could be easily elicited on shaking the child. On deep palpation in the pyloric area a fusiform mass could be felt. Medical treatment having had no effect the question of operation was raised, but the parents would not give their consent. Twenty-four days after the onset of vomiting the child died in a comatose state. At the necropsy the small and large intestines were found empty; the stomach was large, its walls thickened, and its capacity was found to be 4½ ounces. At the pyloric end there was a large mass of cartilaginous firmness. The stomach and duodenum were empty.

The PRESIDENT showed a specimen of Congenital Stenosis of the Pylorus in an infant.

Dr. DAVID SHANNON showed: 1. A Large Fibroid of the Uterus which had undergone cystic degeneration. It weighed nearly 14 pounds. 2. A well-marked case of Chorio-epithelioma. 3. A Small Uterus with numerous Interstitial Fibroids and one Submucous. Myomectomy had been performed in this case nine years ago.

MEDICAL SOCIETY OF LIVERPOOL.—A pathological meeting of this society was held on Feb. 2nd, Dr. T. R. Bradshaw, the President, being in the chair.—Mr. K. W. Monsarrat exhibited specimens of Adenoma of the Palate, Colloid Carcinoma of the Cæcum, Carcinoma of the Bladder, Fibro-chondroma of the Submaxillary Gland,

Resected Intestine and Sac from Strangulated Umbilical Hernia.—Mr. Douglas Crawford and Dr. D. Moore Alexander showed specimens of: 1. Primary Tubercle of the Tongue from a patient aged 27; the ulcer was situated near the tip of the tongue. Anti-syphilitic treatment had been tried before excision, but with no result. 2. Secondary Tubercle of the Tongue in a man aged 45. The ulcer was situated on the side of the tongue opposite the second molar tooth; there was slight evidence of tubercle at the apex of the right lung. Tubercle bacilli were found microscopically in this specimen, but not in the first. 3. Sarcoma of the Thyroid from a woman aged 50. The tumour had been there for some years, and had grown rapidly in the last six weeks. 4. Acinous Cancer of the Hard Palate in a patient aged 65.—Mr. G. P. Newbolt showed specimens of Appendix and Liver Abscess and of Richter's hernia.—Dr. Alexander showed a culture of Bacillus Lepræ.—Mr. Arthur J. Evans showed Chondro-sarcoma of the Testicle.—Mr. Frank Jeans showed: 1. A Fallopian Tube containing a very early ectopic pregnancy—presumably about 14 days. The symptoms simulated acute intestinal obstruction. 2. A Calculus removed from the ischio-rectal fossa of unknown origin, possibly from the urinary bladder or from the biliary passages. 3. An Intussusception which he had removed from a woman, aged 21 years, involving 3 or 4 feet of jejunum, about 6 inches below the duodenum.—Mr. W. Thelwall Thomas and Dr. G. Stopford Taylor showed a Sacrococcygeal Dermoid from a woman aged 26 years; large cysts lined by squamous epithelium existed in both buttocks; in the post-rectal region the growth was sarcomatous.—Mr. R. E. Kelly and Dr. Ernest Glynn showed a Glioma from the right lobe of the cerebellum from a girl aged 3 years, in which there was a cyst which had been successfully drained three months before death with relief of all symptoms; also a typical Squamous-celled Epithelioma from the substance of the interior of the breast which had probably originated in a dermoid.—Mr. F. T. Paul showed a Fibro-cystic Tumour of the Testicle and an Adeno-chondroma of the Pharynx, and a Perithelioma of the Breast.—The President and Dr. Glynn showed a Chronic Ulcer of the Stomach which caused profound anæmia from concealed hæmorrhage; at one end of it colloid cancer was commencing.—Dr. Alexander related three cases of infection by the Bacillus Aerogenes Capsulatus. Two of these presented the commoner features of infection through wounds, both being cases of accidents. The third was infected from the intestine during life, a malignant growth of the rectum ulcerating into the internal iliac vein and producing symptoms of malignant œdema in the right thigh. The patient died in less than 24 hours afterwards. He also discussed the portals of entry and the difficulty of differentiating the pathogenic anaerobes.—Dr. Warrington Yorke read a note on the Pathology of Lesions of the Cornea and Skin in Trypanosomal Infections. Reference was made to the close similarity that existed between syphilis and trypanosomiasis. Three goats and a horse inoculated subcutaneously with a strain of trypanosomes derived from a case of human trypanosomiasis all developed interstitial keratitis. In two of the animals the condition was of transient character. The corneæ became densely opaque and subsequently cleared again in the course of a few days. The condition was indistinguishable from severe interstitial keratitis of syphilitic origin. Rabbits infected with the same parasite exhibited marked changes in the skin. That of the face and eyelids was usually the first to be involved. The skin and subcutaneous tissues became œdematous and indurated and later there was considerable loss of hair. In severe cases the whole of the skin of the back was bald and greatly thickened. Sections of the tissues were examined in different stages of the disease with the object of ascertaining the nature of the morbid processes. The pathological changes in the cornea and the skin were essentially the same, and the course of events appeared to be somewhat as follows. In early lesions parasites were present in the tissue spaces. This was followed by an œdematous condition of the part with a more or less marked degree of leucocytic infiltration and some new vascular formation. In the cornea the lesions were, with a single exception, confined to the substantia propria, which was in severe cases about twice as thick as that of a normal eye. In one case the cornea was three times as thick as normal, and the morbid processes were not confined to the substantia propria, but had involved Bowman's membrane, and the anterior epithelial layer was separated from the substantia propria by inflammatory exudation. The epithelial cells themselves stained badly and were in parts completely disintegrated. In some cases the parasite had disappeared from the tissue, and with their disappearance there was a tendency of the part to recovery. Attention was drawn to the fact that such lesions as those mentioned were essentially due to the local multiplication of the specific parasite, and were not merely dystrophic or toxic manifestations.—Dr. J. Grimshaw confirmed the accuracy of Dr. Yorke's observations, for he had seen the goats and the microscopic specimens.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 3rd, Dr. A. Christy Wilson, the President, being in the chair.—Dr. E. F. Trevelyan opened a discussion on the Diagnosis and Treatment of Tuberculosis, especially its pulmonary form, presenting a brief and rough summary of 561 cases of phthisis treated in the Leeds Consumptive Institution. An early and certain diagnosis was most important, as the disease could only be healed in its early stages. The importance of careful physical investigation of the chest was reflected in the more recent development of the examination of the extreme apices of the lungs as seen in the apical percussion methods of Krönig and Goldscheider, as well as to a less extent in the use of radiography. The lightest possible percussion gave the best results. The use of solvents (hot alkalies, antiformin) might, perhaps, in a few cases facilitate the examination of the sputum. Tubercle bacilli could sometimes be obtained in the sputum after a tuberculin injection by employing Holt's method. Dr. Trevelyan now used the skin test (von Pirquet's) extensively and the conjunctival less. These reactions did not localise the lesion, but where an organ, &c., was suspected they became of importance. The subcutaneous test was the most valuable owing to its focal reaction. The chest and the sputum should be carefully examined while it was proceeding. For rough purposes of prognosis cases might be divided into—(*a*) those in the early stages of the disease and susceptible of complete healing; (*b*) those whose health might be so re-established that they could return to work; and (*c*) those who would never work again. Early cases and curable cases were not necessarily synonymous terms. Not only were the early cases benefited by proper hygienic treatment (open-air methods), but the worst features of the later disease were much mitigated under it. No drug was of any real permanent service against the disease itself, and drugs should be reserved for, and sparingly used in, the relief of really troublesome symptoms and complications. During the past two years Dr. Trevelyan had used tuberculin rather extensively, first by the mouth and later almost exclusively by subcutaneous injection. By proper individualisation he maintained that no harm could be done and some benefit obtained in almost any stage of the disease. Careful clinical observation of each case, in his opinion, sufficed. He had seen improvement in febrile phthisis by the use of even smaller doses than the small doses usually employed. He was against the ambulatory tuberculin treatment of phthisis unless previously initiated in an institution. This did not so much apply to some other forms of tuberculosis which he had treated with favourable results in ordinary out-patient practice. In conclusion, some remarks were made upon early diagnosis and treatment in relation to the social aspects of phthisis. The importance of the tuberculosis dispensary as the centre of the scheme for dealing with phthisis was emphasised, as well as the instructional uses of consumptive institutions.—Dr. F. W. Eurich drew attention to the necessity of finding suitable work for the poorer patients who were returned from sanatoriums and were unable to resume their former employment. He emphasised Dr. Trevelyan's remarks and the value of Goldscheider's method of light percussion in the early diagnosis of phthisis; he thought there was necessity for a more accurate conception of the relation of the lung to the chest wall, and particularly of the position of the apex. He thought that, on the whole, percussion was the better method than auscultation in the detection of early disease. He had had excellent results in the examination for tubercle bacilli from sputum by using a modification of the antiformin method in which an ether and acetone mixture was employed.—Mr. J. F. Dobson made some remarks on the value of tuberculin injection, principally in relation to surgical forms of

tuberculosis. During the last three years he had seen considerable improvement in a large number of cases. In many cases of tuberculous glands of the neck the improvement had been general as well as local. He started with small doses of T.R. at fortnightly intervals, the patients attending in the out-patient department. For the last six months he had used bacillary emulsion, and on the whole thought the results were better than those given by T.R. In treating glands of the neck in this way it was necessary that the preliminary treatment—the removal of carious teeth, adenoids, and the correction of otorrhœa—should be attended to, otherwise it was practically useless to give tuberculin. In other cases, such as bone tuberculosis and certain joint lesions, he had also seen improvement.—Dr. G. W. Watson thought that in regard to night sweats there was some periodicity to be found in their occurrence, and they were not entirely prevented by open-air treatment. They coincided, not infrequently, with an exacerbation and spread of the disease, and often denoted a mixed infection.—Cases and specimens were shown by Dr. Trevelyan, Dr. R. A. Veale, Dr. M. Coplans, Mr. Dobson, Mr. M. J. Stewart, and Professor A. S. F. Grünbaum.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 3rd, Dr. Phineas S. Abraham, the President, being in the chair. The evening was devoted to pathological exhibits. Among those shown were the following:—Dr. J. A. Coutts: 1. Heart from a case of Malignant Endocarditis in a child aged 5 years. 2. Heart from a case of Endocarditis in an infant aged 2 months. 3. An Infantile Stomach with Pyloric Stenosis from a case in which gastro-jejunostomy had been performed; the pylorus only admitted the passage of a bristle. 4. Extreme Fibrosis of Lung in an infant aged 15 months.—Dr. J. M. Bernstein: 1. Hypernephroma (operation specimen). 2. A specimen from a case of Ulcer of the Pylorus with perforation into the liver, and abscess in the liver; excision; healing; death from pneumonia. 3. A specimen from a case of Obstructive Jaundice, non-malignant; great dilatation of the bile and pancreatic ducts. 4. A Thymus Gland weighing 833 grains from a boy aged 14 years.—Mr. L. A. Bidwell: 1. Primary Carcinoma of the Liver. The specimen was removed from a man aged 64 years. On opening the abdomen the tumour was found to be circumscribed with no evidence of secondary infection; it was excised. The bleeding points were ligatured, and the "V"-shaped wound was brought together with catgut-sutures which stopped the bleeding. The patient did well for a week, but then developed broncho-pneumonia from which he died. 2. A specimen from a case of Carcinoma of the Transverse Colon fungating through the umbilicus.—Mr. Donald J. Armour: 1. Primary Carcinoma of the Appendix. 2. Polycystic (Congenital Cystic) Kidney.—Mr. W. McAdam Eccles: 1. Fibrolipoma from the forehead of a man. The patient was shown at the last clinical meeting of the society, when it had been diagnosed as probably dermoid. 2. Alveolar Sarcoma of the Ovary from a girl aged 11 years. The tumour weighed 6 pounds.—Mr. J. A. Cairns Forsyth: 1. A Kidney with a Cyst which contained 22 Uric Acid Calculi (the cyst did not communicate with the pelvis of the kidney). 2. Kidney showing Hydronephrosis from Malposition of the Ureter, which sprang from the upper part of the pelvis. 3. Liver showing extreme Cirrhosis not due to alcohol.—Mr. Francis F. Muecke: A Cast of the Laryngeal Ventricles from a patient with malignant disease of the larynx.—Mr. J. E. R. McDonagh: Microscopic slides showing the Causative Organisms of Balanitis Erosiva et Gangrenosa, a condition very rare in this country, but frequently found in Austria and Hungary. It is easily cured with peroxide of hydrogen.—The President: A man with Tuberosities on the Face and Hands, probably epitheliomatous.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Feb. 1st, Dr. A. Emrys Jones, the President, being in the chair.—Mr. L. Savatard communicated the following cases:—1. Xeroderma Pigmentosum in a female aged 42 years. The condition, first noticed three years ago, had gradually progressed and was not affected by the variations of season. No warty or other growths had as yet arisen. Microscopical examination of a pigmented area showed, in addition to a mass of pigment in the epidermis and cutis, marked disturbance and atrophy of the basal cells. Attention was drawn to the striking similarity between this condition and X rays dermatitis with subsequent malignant growths. 2. Lupus Vulgaris of long standing with (*a*) papilloma, and (*b*) epithelioma or scar tissue. 3. Cutaneous Neurofibromatosis, with General Fibrosis of the Peripheral Nerves, in a man aged 25 years. There was no family history of this or any allied condition. This was his fourth attack, the first appearing five years ago after an attack of acute rheumatism. The cutaneous lesions of the previous attacks had entirely involuted. The lesions were most numerous on the trunk; the larger ones, not exceeding 1·5 centimetres in diameter at their base, were hemispherical and sessile, with a bluish transparent look. Many of the smaller ones presented a purpuric appearance. A section of a small tumour (kindly made by Dr. C. Powell White) showed it to be a soft fibroma of the terminal filaments of the cutaneous nerve pushing upwards into the cutis and displacing the sweat and sebaceous glands.—Mr. J. W. Smith read a communication on the Treatment of Carcinoma Recti.

# Reviews and Notices of Books.

*Dyspepsia, its Varieties and Treatment.*[m] By W. SOLTAU FENWICK, M.D. Lond. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 485. Price 13*s*.

DISORDERS of digestion form a large proportion of general medical practice, yet much misunderstanding exists as to the classification of these disorders and the principles upon which their treatment should be based. These difficulties are no doubt due, as Dr. Fenwick suggests, in great measure to a disposition to regard dyspepsia as a substantive disease dependent upon a primary failure of the gastric functions, whereas in a considerable proportion of the cases the symptoms originate in the intestines, and may ensue from a derangement of the liver, pancreas, or bowel. We have not expressed the above opinion exactly in Dr. Fenwick's own words, for although there is doubtless much to be said in favour of the views he expresses, we consider that he rather depreciates the part which the stomach plays as the prime seat of digestive disorders. For instance, in our opinion, the following sentence requires modification: "Moreover, a disturbance of digestion in the stomach itself is rarely due to a primary disorder of that viscus, but is usually a consequence of serious disease of another and perhaps remotely situated organ of the body." Then he adds, "The truth of this apparent paradox will be appreciated when it is remembered that the majority of the secretory, motorial, and inflammatory affections of the stomach result from the failure of some other organ to execute its proper functions." That the stomach is frequently unjustly blamed as the sole originator of indigestion may be admitted, but we believe the statement we have quoted to be too sweeping in its character. Nevertheless, the warning it contains is a sound one, and it behoves the practitioner to make a careful examination of the patient, and exhaustively to consider the symptoms before arriving at the conclusion that the stomach is the seat of the primary trouble.

The classification of dyspepsia which Dr. Fenwick adopts is a good one, and will be found especially useful for purposes of treatment. His description of the symptoms of each variety is easy to follow, and much information will be obtained by a study of his remarks. We would especially draw attention to the explicit manner in which the differential diagnosis is discussed. Unless an accurate diagnosis is made the treatment must incline to be empirical, whereas, in order that success may follow, rational therapeutic measures are essential. In this direction this work will be found to be of considerable value, and practitioners may derive many useful hints as to the best manner in which to treat their patients, both as regards diet and

drugs. The various mechanical methods also receive due notice.

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*Die Physiologie und Pathologie des Wochenbettes, für Aerzte dargestellt.* Von Privat Docent Dr. F. FROMME, Oberarzt der Königlichen Universitäts-Frauenklinik zu Halle-a.-S. Berlin: S. Karger; London: Williams and Norgate. 1910. Abt. 31; Tafeln 2. Pp. 256. Price 8.40 marks; bound, 9.60 marks.

THE prominent part played at the present day by the practice of antisepsis and asepsis in the care of lying-in women, and the importance of the occurrence of various septic processes resulting from the neglect of such practice, are well illustrated by the publication of this book, and also by the fact that of the eight volumes of von Winckel's "Handbook of Midwifery" a bulky volume of no less than 1000 pages is devoted to these matters. The correct treatment of the large majority of confinement cases consists in the intelligent application of the principles of antisepsis. By these means childbirth has been robbed of most of its dangers, and that a book of 256 pages should be devoted to such a subject is further proof, if any were wanted, of the paramount urgency of this treatment.

Dr. Fromme has written a very interesting work dealing with the normal and abnormal puerperium. In the first half of the book he discusses the physiology of this period, including under this head the processes of involution, the secretion of the milk, the symptoms of the puerperium, and the care of the mother and of her baby. The second, and more special, portion of the book deals in a very complete manner with the pathology of the lying-in period. The normal and abnormal organisms met with in the genital tract are described, and also the diseases which may result from their presence. This part of the book is very good indeed. The various forms of infection are clearly described, and the author shows in a clear manner the distinctions between the many septic conditions which may follow delivery.

In considering the treatment of cases of so-called sapræmia due to the retention of portions of the placenta or membranes in utero, Dr. Fromme is strongly in favour of the least possible interference. If necessary he advocates the removal of pieces of placenta or membranes with the finger, but he deprecates curetting or the application of strong antiseptics to the uterine cavity. He quotes with approval Professor Winter's conclusions, who maintains from his own observations that the spontaneous expulsion of portions of placenta is much safer for the patient than their artificial removal. The author describes in detail, for particulars of which we must refer our readers to the book itself, a method which he believes can be relied upon for determining whether a hæmolytic streptococcus is merely a harmless saprophytic or a virulent pathogenic organism. In the treatment of cases of septic infection he lays great stress on this distinction, since upon it he bases to a large extent his treatment and his prognosis. Unfortunately, these observations have not been substantiated by other observers, and we have therefore at present no reliable method of distinguishing between saprophytic and pathogenic streptococci in the genital tract. The chapters devoted to a consideration of the various forms of puerperal infection, and the differences they present in accordance with the variety of organism present, will well repay careful study. Besides sections dealing with the effect of the gonococcus in the puerperium and of the rarer organisms associated with some septic processes, there are others treating of puerperal tetanus and diphtheria. Other conditions considered are infections of the urinary tract and of the breasts, while the concluding chapters treat of the hæmorrhages and the psychoses of the puerperium.

The whole work forms an excellent monograph. It contains a large amount of information, and if we are inclined to disagree a little with some of the author's love of minutiæ in, for example, his antiseptic precautions, this is a good fault. On the other hand, we do not believe that "the rational puerperium," of which he is a strong advocate, will last as long as this book, on the production of which Dr. Fromme is to be congratulated.

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*Oxford Medical Publications. Clinical Pathology in Practice, with a Short Account of Vaccine-therapy.* By THOMAS J. HORDER, B.Sc., M.D. Lond., F.R.C.P. Lond., Medical Registrar and Demonstrator of Morbid Anatomy (late Demonstrator of Pathology and Junior Demonstrator of Practical Medicine) at St. Bartholomew's Hospital, Physician to the Great Northern Hospital and to the Cancer Hospital. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 216. Price 7*s.* 6*d.* net.

IT is expressly stated in the preface that the aim of this book is not to serve as a laboratory text-book, but to present the practitioner with a brief survey of the scope and usefulness of modern pathological methods as applied to the diagnosis and treatment of disease. To apply laboratory methods practically to the investigation of cases certain information is necessary, including a knowledge of the materials to be studied, the manner of collecting them, and the value of the results obtained. Dr. Horder's book is well calculated to supply this information and should prove of real value to those practitioners who desire to apply the methods of so-called clinical pathology intelligently and usefully. In a valuable suggestive introductory chapter Dr. Horder is careful to utter a warning against any tendency to neglect the physical methods of examination of the patient or to exaggerate unduly the rôle of the clinical pathologist and the value of the information he supplies. He urges the necessity of a close and mutually helpful relationship between the clinician and the pathologist.

After the necessary apparatus required for the collection of material for investigation has been briefly described, a useful account is given of the method of blood culture. The indications for this procedure, the technique of its performance, and the interpretation of the results obtained are all dealt with concisely and in a practical manner. The histological examination of the blood, the methods of enumerating the corpuscles, and of estimating the percentage of hæmoglobin are next considered, and the significance of the results of such examinations is discussed. The characters of the blood in the chief varieties of anæmia are briefly described, and the causes of leucocytosis and of leucopenia are enumerated and differentiated from one another.

The methods of pathological investigation of diseases of the lungs and pleura are dealt with under three separate headings, the first being the examination of the sputum, the second the examination of fluids obtained by pleural puncture, and the third the investigation of material obtained by direct puncture of the lung. The characters of the sputum in various diseases of the respiratory tract are clearly described and differentiated from one another. In connexion with pleural puncture the chemistry, cytology, and bacteriology of the different pleural exudates are considered. An interesting and critical account of the bacteriology of empyemata is a useful feature of this section. The substance of the chapter on puncture of the lung for diagnostic purposes has already been published in our columns by Dr. Horder,[1] and we have commented on this procedure, which he strongly recommends, in an annotation.[2] A careful description of the method of lumbar puncture and its use in diagnosis and treatment is afforded in a chapter

[1] THE LANCET, Nov. 6th, 1909, p. 1345.
[2] Ibid., p. 1366.

devoted to this subject, which we may mention as one of the best in the book.

Separate chapters are devoted to infective conditions of the nose, mouth, and throat, infective diseases of the urinary tract, the results of joint puncture, and the examination of the fæces. The diagnosis of tuberculosis and its specific treatment are next dealt with, and clear accounts of the diagnostic tuberculin reaction and its recent modifications are here included. Lucid descriptions of the principles and mode of carrying out certain specific reactions, such as Widal's and Wassermann's tests, are then given. An interesting chapter on fever without physical signs affords a valuable illustration of the practical application of the methods to be applied in the study of obscure febrile conditions. The use of bacterial vaccines in treatment is dealt with in a thorough, common-sense, and practical manner in the last two chapters. The questions of dosage and of the intervals between successive injections are discussed in the light of Dr. Horder's own experience. He regards the control of vaccine treatment by repeated determinations of the opsonic index as unnecessary. The use of stock vaccines is also briefly discussed. In general we may say that the recommendations given are practical, and no exaggerated claims are made in regard to the value of the method.

We have read Dr. Horder's book with interest, and can recommend it as a useful practical handbook.

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*Salvarsan ("606"): Its Chemistry, Pharmacy, and Therapeutics.* By W. HARRISON MARTINDALE, Ph.D. Marburg, F.C.S.; and W. WYNN WESTCOTT, M.B. Lond., D.P.H., His Majesty's Coroner for North-East London. London: H. K. Lewis. 1911. Pp. xv. + 77. Price 5*s.* net.

A DEFINITE general opinion as to the value and trustworthiness of the preparation "606" can hardly be said yet to have formed, and though the amount of evidence in its favour largely surpasses the evidence opposed to it, yet at present it cannot be expected that the new remedy should be accepted without question. This book, written by the authors of the well-known "Extra Pharmacopœia," contains a very useful collection of the substance of most of the papers which have appeared on the subject of "606." The work commences with an account of the chemistry of the drug; the therapeutic results obtained are also described, the question of dose is considered, and the mode of introduction discussed. The untoward results which have occurred are referred to and the contra-indications are given. An interesting section is that devoted to some special communications which have been addressed to the authors during the preparation of the work. These are all from London authorities and are well worthy of perusal.

On the whole the book gives the impression that the authors do not regard the drug with favour, though it is difficult to point to any individual expression to this effect. They are thoroughly conversant with the chemistry of the substance and its allies, but they are possibly somewhat handicapped in preparing the work by the fact that they appear to have no personal knowledge of the clinical application of the drug.

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*Physiological Principles in Treatment.* By W. LANGDON BROWN, M.A., M.D. Cantab., F.R.C.P. Lond., Physician to the Metropolitan Hospital; Medical Registrar and Demonstrator of Physiology, St. Bartholomew's Hospital. London: Baillière, Tindall, and Cox. 1910. Pp. 392. Price 5*s.* net.

IN THE LANCET of Dec. 26th, 1908, we published a review of the first edition of this work, in which we expressed the favourable opinion we had formed as to its merits. After again perusing this volume we cordially repeat the praise to which we then gave utterance.

The alterations in this edition are mainly in matters of detail, though additions have been made to some of the sections. In the remarks on the movements of the stomach, the results obtained by X ray examination with from ½ to 2 ounces of bismuth oxycarbonate suspended in milk or gruel are detailed. Reference is also made to the investigations of Cannon and Hertz, which have added considerably to the knowledge of the passage of food through the stomach. Some addition has also been made to the chapter on uric acid and the purin bodies, endogenous purins being more fully considered. The chapter on intestinal intoxications has also been largely re-written. Attention is given to the subject of vaccine treatment of intestinal intoxications. It is suggested that a plate culture may be made from the stools, and the effect of the patient's blood in agglutinating or destroying the more definitely pathogenic organisms tried. If a positive reaction be obtained with one or more of these a vaccine may then be prepared. Additions have been made to the chapter on irregular action of the heart, and the remarks on this subject are some of the most interesting in the book.

We can recommend this work to the attention of our readers, and believe that it will continue to receive a wide acceptance at the hands of the profession.

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1. *Lippincott's New Medical Dictionary.* A Vocabulary of the Terms Used in Medicine and the Allied Sciences, with their Pronunciation, Etymology, and Signification. By HENRY W. CATTELL, A.M. (Laf.), M.D. (U. of P.). Freely illustrated with figures in the text. London and Philadelphia: J. B. Lippincott Company. 1910. Pp. 1108. Price 21*s.* net.
2. *The Practitioner's Medical Dictionary.* An Illustrated Dictionary of Medicine and Allied Subjects, including all the Words and Phrases Generally Used in Medicine, with their Proper Pronunciation, Derivation, and Definition, based on Recent Medical Literature. By GEORGE M. GOULD, A.M., M.D. Second edition, illustrated. London: H. K. Lewis. 1911. Pp. 1043. Price 18*s.* net.
3. *The Illustrated Medical Dictionary.* A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, and Kindred Branches, with the Pronunciation, Derivation, and Definition. By W. A. NEWMAN DORLAND, A.M., M.D. Fifth edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 876. Price 19*s.* net.

1. WITH the multiplication of medical words comes a multiplication of medical word-books. The latest addition to the already large list of medical dictionaries is one compiled by Dr. Henry W. Cattell for the J. B. Lippincott Company, which has answered our expectations in furnishing information on such words as we have tested it with. We are pleased to find that the author has adhered to the more classical spelling of those words in which there seems to be in America a decided determination to effect an abrupt cleavage with the past—such words, for instance, as anæmia, diarrhœa, iodide, sulphur, which many who seem to think that change is synonymous with progress and reform would have us spell anemia, diarrhea, iodid, sulfur. The book is not too bulky to handle with ease, and has a thumb index.

2. Gould's "Practitioner's Medical Dictionary" in its second edition is practically a new work. Great pains have been taken to include most of the new terms that have been coined in such profusion during the last decade or so, and the metric system equivalent has been added where weights and measurements are given, especially in the matter of doses. The additions and changes of the new (U.S.) Pharmacopœia have been included, also the B.N.A. anatomical nomenclature. The author's interesting Notes Concerning the History of Lexicography, from the preface to his Dictionary of New Medical Terms, is republished. The fact that over 200,000 copies of the author's various medical

dictionaries have been scattered all over the civilised world certainly testifies to a wide appreciation of his labours.

3. "Dorland's Illustrated Medical Dictionary," now in its fifth edition, is too well known to need much comment, further than to state that the entire book has been rewritten, many of the definitions revised, and more than 2000 new terms have been added, many of which appear herein for the first time in any dictionary. A special feature has been made of those biological words which are now appearing with hitherto unwonted frequency in medical literature, especially physiological and pathological, while the B.N.A. nomenclature and the latest classification of proteins have been adopted. This work is illustrated with several admirable coloured plates.

The unsatisfactory part of these dictionaries—a minor one certainly, as compared with the importance of definitions and explanations of the new terms in medicine and the allied sciences that are being so continuously coined, to the confusion and bewilderment of the reader—lies in the orthography and pronunciation. To the former we have already referred when speaking of "Lippincott's Dictionary." The latter is more naturally in a state of flux than the former ought to be; still, even there it is frequently mispronunciation that gives rise to wrong spelling. Pronunciation is said to be a matter of good usage. But what constitutes "good" usage? The method of the few scholars who really know and are careful, or that of the majority who are as a rule neither well informed nor careful? In America the usage of the majority, irrespective of scholarship, in Great Britain the usage of the more scholarly, irrespective of the number, seems to carry the day.

## LIBRARY TABLE.

*Photography in Colours.* By GEORGE LINDSAY JOHNSON, M.A., M.D., B.S. Cantab., F.R.C.S. Eng. London: Ward and Co. 1910. Pp. 143. Price 3*s.* 6*d.* net.—The rapid advance made in photography in colours has been so remarkable that Dr. Lindsay Johnson has thought it desirable to write a monograph rather than to revise this section of his previous work on "Photographic Optics and Colour Photography." He deals with the fascinating subject in a simple but comprehensive manner, and shows repeatedly that his advice and comments are founded on ripe experience of all the methods. The colour photographs which adorn the book prove that he is an able practitioner of the art; they are somewhat harsh in colour contrasts and therefore lacking in the delicate refinements which are obtained more successfully in other ways, but it must be remembered that they are employed here to some extent as diagrammatic models. After a preliminary historical review the author compares the eye with a camera and draws some analogies between colour photography and normal and defective vision. He shows how the luminosity curve of the retina may be approximated by the panchromatic plate, the application of pinacyenol to the plate causing an extension of the curve of sensitivity towards the red end of the spectrum. The theory underlying Lippmann's interference method, three-colour photography by additive and subtractive methods, and the multitudinous single-plate colour processes, is very lucidly described, and is worth reading by those who do not propose to practise the art. It is illustrated by admirable diagrams and photographs, which afford much assistance to obtaining a clear understanding of what is really more confusing than actually complex. The chapters on the practical details of the working of single colour-screen plates and photographic colour printing will be of the utmost help to beginners. A final chapter on Kinematography in Natural Colours is followed by an appendix where details of developing and tables of times of exposure and so on are given.

*Vaccine Therapy: its Theory and Practice.* By R. W. ALLEN, M.D., B.S. Lond., late Clinical Pathologist to the Mount Vernon Hospital, &c. Third edition. London: H. K. Lewis. 1910. Pp. 277. Price 7*s.* 6*d.* net.—Considerable alteration has taken place in this book since we reviewed the first edition in 1909. If we remember rightly, the title was originally "The Opsonic Method of Treatment," but this feature has now dropped out from the place of honour. The change corresponds with a change in the author's views as to the importance of this particular procedure, for he now believes that opsonic estimations are not needed as a routine measure in all cases of inoculation, though owning the accuracy of the method, when used by an expert, for the measurement of the degree of immunity existing in a patient. He perhaps hardly allows sufficient weight in this question to the adverse opinions which have been expressed by some very careful and competent observers. It can hardly be doubted that vaccine treatment has, if we may be pardoned a colloquialism, "come to stay." Hence such a presentation of the whole subject as is contained in Dr. Allen's book must be welcome. The most noteworthy extension of the field for this procedure which is at present in view is the use of vaccines in acute infections, such as enteric fever and pneumonia. Good results are claimed by several observers in both these diseases, and the method is certainly worthy of trial. We observe that the author advises the use of autogenous tuberculins as well as of vaccines of this nature in other diseases; but good results are also claimed for the employment of bovine tuberculin in human cases. The use of vaccines in the "carriers" of infection, such as enteric fever, is also likely to lead to valuable results. By way of minor criticism we may question why a case of carbuncle is placed under the heading of "Periostitis and Osteomyelitis" (p. 94), and note the term bacillus Caucasicum—surely a "false concord"—for the Bulgarian bacillus, and such curiosities of expression as "similar results to when introduced subcutaneously" and "any affection soever" (for "whatever"). The book is well printed and got up.

*Travail de l'Amphithéâtre d'Anatomie des Hôpitaux: Recherches d'Anatomie Chirurgicale sur les Artères de l'Abdomen. Le Tronc Cœliaque.* Par PIERRE DESCOMPS, Prosecteur des Hôpitaux. With 97 figures in the text. Paris: G. Steinheil. 1910. Pp. 205. Price 10 francs.—This monograph upon the arteria cœliaca has been compiled by M. Descomps from special and minute dissections of 50 subjects, and from a study of the literature. A detailed account is given of the variations of the origin of the trunk and the distribution of its terminal branches, and the labour has not been undertaken merely as an exhaustive study in descriptive anatomy, for, as the author points out, a surgical interest attaches itself to the anomalies in distribution of the branches of this artery. The work is a laborious and complete inventory of the variations of a definite arterial trunk; and it will remain as a permanent work of reference for the specialist. The author is greatly to be commended for his illustrations, for his 97 figures are all examples of a type of diagram in which so many French publications excel. These little drawings, though mostly having no pretence to a more than diagramatic representation of the part depicted, are carefully and artistically drawn. They are accurate and simple, and the fact that they were intended only as diagrams has not been taken by the draughtsman as an excuse for careless drawing. This point is one worth noting, for the appearance—and utility—of so many modern English works is spoiled by the inclusion of careless and inaccurate figures the faults of which are excused on the grounds that they were only intended as diagrams. Every figure given by

M. Descomps is clear and is carefully drawn, and even those that depict the most unimportant trifles are done with an altogether excellent attention to accurate detail. They add greatly to the value of a book which from its nature can never be one of very general interest, but which is a monument of conscientious work upon which the author is to be congratulated.

*A Manual of Nursing.* By MARGARET FRANCES DONAHOE. London and New York: D. Appleton and Co. 1910. Pp. 489. Price 7*s.* 6*d.*—Miss Donahoe tells us in her preface, where she speaks of herself, that "the mistakes and crudities are her own," and this frank confession makes us all the more sorry to have to say that there are many mistakes. For Miss Donahoe's chemical, physiological, and medical knowledge is, judging by her own statements, very imperfect. Where she does know her subject she knows it well, for her accounts of such nursing matters as washing a patient, passing a catheter, making a bed, and dusting a ward are good and clear. But in other matters her teaching is sadly incorrect, and so is her Latin. For instance, on p. 102 she talks of "the glans clitoris," and on p. 112 of "pruritis," while on p. 286 she uses "cilia" as a singular noun. These errors are, however, harmless, but the same cannot be said for the following. On p. 66, "Urine has a peculiar ammoniacal odor," a statement which is certainly not true of normal urine, and again on the same page, "Urine is fluid unless it contains quantities of mucus or blood or albumin, when, if left standing, it may be almost jelly-like in consistency." We do not think that albumin by itself will make urine jelly-like. On p. 126 we are told, "A high temperature with a dry skin is not so dangerous as the same temperature with a wet skin," a statement which, taken generally, is not true. On p. 203, plaster of Paris is stated to be "calcium sulphide." On p. 323 she says, "Often associated with heart disease is rheumatism. This attacks the joints, flying about from one joint to the other, causing intense pain, but leaving the joints uninjured." As a whole, we cannot conscientiously recommend this book, though, as we have said above, there are portions of it which are useful and accurate.

*Feeding and Care of Baby.* Issued by the Society for the Health of Women and Children. Dunedin: Mills, Dick, and Co. 1910. Pp. 144. Price 1*s.*—This little book is a compilation on the subject of infant management, which has been issued by the Society for the Health of Women and Children, New Zealand. Although the work is anonymous, it appears from the context that the medical authorities in connexion with the Karitane Baby Hospital are responsible for the work, and it would be almost impossible to compress more correct and authoritative advice on the whole subject into a smaller number of pages. It is quite clear that all the best works have been consulted and quoted, not always, however, with due acknowledgment. The book just misses excellence, owing to want of orderly arrangement and the proper marshalling of facts. There are much repetition and constant change in the type. Very often most important facts are printed in the smallest type, while those of less importance are more conspicuous. The illustrations are excellent, but crowded haphazard into the text. A good and experienced editor with very little trouble could convert this medley of facts into a valuable and practical guide for mothers and others who are concerned with the management of infants.

*The Care of Infants and Young Children in Health.* By MILDRED M. BURGESS, M.D. Lond. London: H. K. Lewis. 1910. Pp. 72. Price 1*s.* net.—This useful little manual, while intended for all interested in the healthy upbringing of children, is especially likely to prove of service to those attending courses of lectures on infant care. It follows the syllabus of the infant care course of the London County Council and deals with breast and substitute feeding, the general conditions influencing growth and development, baths, the clothing of babies and young children, the treatment of emergencies, and ventilation.

*Formation of Character.* By Rev. J. B. S. WATSON, M.A. Second edition. London: H. R. Allenson. Pp. 115. Price 1*s.* 6*d.*—Mr. Watson's position as chaplain of His Majesty's Prison, Brixton, must certainly have afforded him ample opportunity for studying the relation between the plight of those derelicts with whom as a prison official he came into contact and their perversion or want of character. There can be no doubt that there is a lack of discipline in the bringing up of the young of the present day that is causing vast uneasiness as to the future in the minds of many thoughtful persons. At present, those who would give us "royal roads" are having things more their own way than they are entitled to, and the result is a sentimentalism that would eliminate from modern "educational" methods whatever happens to be irksome or distasteful to the child, seeking to cause it to lay hold on information—knowledge is not the word—by methods of play. If the acquisition of information, or even knowledge, were the sole or the main object of education such methods would, perhaps, adequately achieve their end. But if the chief aim of education is the formation of character by self-discipline and self-control, these qualities must be initiated by discipline and control from without, for it is doubtful if any man ever learned to exercise discipline and control on himself until he had first learned to submit himself to discipline and control at the hands of others. The book before us consists of a preface by the Rev. G. P. Merrick, formerly Chaplain-Inspector of His Majesty's Prisons; a foreword on Industry, by Mr. Andrew Whitlie; and chapters by the author respectively on Character, Courage, Temperance, Industry, and Reverence and Self-Reverence, each describing and illustrating factors in the formation of character and the attainment of moral culture. In regard to reverence, the author quotes the saying of George Eliot, "The first condition of human goodness is something to love. The second something to reverence." And later he writes: "Having for years visited and interviewed men and youths whose character has suffered through the commission of some form of crime, I venture to affirm that the lack of due reverence for one's own self and for the self of others is the prime cause of the great proportion of the cases that have come under my notice and my care." The book is illustrated by anecdotes well calculated to attract the attention of young readers, and is pervaded by a high moral tone of which the religious foundation is plainly but not obtrusively set forth.

*A Text book of General Bacteriology.* By EDWIN O. JORDAN, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Second edition, thoroughly revised. Fully illustrated. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 594. Price 13*s.* net.—The first edition of this work was published so recently as 1908 and was reviewed at length in this journal.[1] In the present issue the author has "corrected a few errors, repaired some omissions, and added several new sections." The changes are not, however, very serious, and though the book has been lengthened by some 26 pages, about 13 of these are accounted for by a greatly improved index. Though the book is written to a great extent on lines usually followed by text-books of bacteriology which are intended for medical students and is perfectly well adapted for the use of such students, yet the desire of the author has been to treat the

[1] THE LANCET, March 13th, 1909, p. 769.

subject on broad lines and deal with it as part of a general liberal scientific education and not as the technical training of a specialist. The chief changes introduced in this edition consist in the inclusion of a description of the iron and sulphur bacteria, and in the chapter on diphtheria of a section on the methods of concentration of antitoxic serum. The section on bacteria in art and industries has been lengthened by the addition of paragraphs on bakery fermentations, the retting of hemp, and on the bacteria which cause destruction of cellulose. There are some additions to the diseases of plants which are described, and there is a short discussion on the vexed question of the entrance of organisms through healthy plant tissues. The section on diseases of doubtful bacteriology now includes the recent work on anterior poliomyelitis. Several diseases to a large extent peculiar to North America are mentioned. Amongst them is Rocky Mountain spotted fever, but we do not observe that any mention is made of the possible relation of the disease to typhus. The appearance of the book and the printing are, as in the first edition, good. The selected illustrations also are well reproduced.

*The Taxonomic Value of the Microscopical Structure of the Stigmal Plates in the Tick Genus Dermacentor.* By C. W. STILES. Bulletin No. 62. With 43 plates. Hygienic Laboratory, Treasury Department, Washington, U.S A. 1910. Pp. 72. —The author of this brochure, Dr. C. W. Stiles, is well known in this country as well as in his own for his investigations upon these and other parasitic animals, including more particularly the tapeworms. We have, therefore, to consider a work by a naturalist well qualified to instruct us upon a matter which, at first sight perhaps trivial, is really of great importance. The markings and sculpturings upon certain of the hard parts of these small and parasitic arachnida are of themselves doubtless a justifiable contribution to zoology, inasmuch as this facilitates the identification of species, and thus leads to a general view of the number and distribution in the world of these little-noticed animals. But in addition to this the subject has a greater importance by reason of the fact that ticks are now well known to convey disease from animal to animal upon which they are parasitic. Thus, their minute investigation is not only of theoretic but of great practical weight. For, as in the case of mosquitoes and malaria, it is not every tick which conveys disease; and the object is to concentrate our destructive energies upon those species which are really guilty. The first step to be taken is therefore clearly to have at hand plain directions as to the characteristics of the several forms; and Dr. Stiles makes a distinct contribution towards this desired end in the pamphlet before us. His editors, the Treasury Department of the United States Government, have done well in showing a great liberality in the matter of plates which obviously render it easy, and without which perhaps barely possible, to identify the different forms. To this end there is a lavish series of plates not only showing details of the microscopic build of the stigmal plates, with which the author is principally concerned, but showing also magnified and coloured illustrations of the entire animals in the case of a few species.

*Hazell's Annual for 1911.* Edited by HAMMOND HALL. London: Hazell, Watson, and Viney. Pp. lix.–592. Price 3*s.* 6*d.* net.—This well-known member of the great group of periodical reference books that are practically indispensable to a man of affairs to-day made its appearance somewhat late this year on account of the General Election, but the work gains by the inclusion of a biographical list of Members of the House of Commons now sitting, with statistical tables and summaries of important announcements by the party leaders during the election. Many questions of the day—political, socio-economic and imperial—have their respective issues outlined. There is practically no phase of interest in modern life which escapes its notice. Many new subjects have been introduced and the old ones brought up to date.

*The Probationer.* By A. M. IRVINE. London: S. W. Partridge and Co. Price 2*s.* 6*d.* Pp. 300.—This is an amusing and brightly written story, and the author, we should say, has a first-hand acquaintance with the scenes which she describes. All the same, we should not have thought it possible that a raw probationer would be let loose in the ward of a children's hospital and simply told to make the children's beds without the smallest information as to what they were suffering from. Naturally enough, she took her first patient out of bed, a proceeding which did not commend itself to the authorities, since the child had pneumonia. The heroine of the tale is blessed with a sense of humour, and is in no way blind to her own shortcomings. She had plenty of pluck, and the way in which she conquers her own ignorance and stupidity and wins the favour of all, including a fascinating house surgeon, is quite readable. The story may be recommended to all young women who are thinking of taking up nursing as a calling. Not the least amusing portions of the story are those in which blunders in simple cookery are described, when amongst other matters the efforts of the probationer to boil milk ended in disaster.

*The Cookery Annual for 1911 and Year Book of the Universal Cookery and Food Association.* Seventeenth year of issue. Edited by C. HERMAN SENN, G.C.A., &c. London: Food and Cookery Publishing Agency. 1911. Pp. 166. Price 1*s.*—More than a fair proportion of illness in this country is attributable to a defective knowledge of catering, including cooking; and this is especially true among the poorer classes. The Universal Cookery and Food Association was established in 1885 to promote and encourage the advancement of the art of cookery in every grade among all classes of the community, Her Majesty Queen Alexandra being chief patroness. This book, edited by the managing director and chief secretary of the association, contains much interesting (and some curious) information concerning the association and kindred organisations; also a series of menus for three meals on every day of the year.

## JOURNALS AND MAGAZINES.

*Journal of Anatomy and Physiology.* Conducted by Sir WILLIAM TURNER, K.C.B., ALEXANDER MACALISTER, ARTHUR THOMSON, ARTHUR KEITH, and ARTHUR ROBINSON. Vol. XLV., Part II. January, 1911. London: Charles Griffin and Co. Annual subscription, 21*s.*, post-free.—Of the ten papers included in this number no less than three are devoted to the vertebral column and ribs. Dr. E. Barclay-Smith describes in full detail the anomalous vertebral column of an ancient Egyptian, presented to the Cambridge University Museum by Professor G. Elliot Smith. In this peculiar spine a great disturbance of the normal arrangement is seen, both in the anatomical form and in the numerical distribution of the various types of vertebræ. The first cervical vertebra is fused to the occipital bone (one free vertebral segment is assimilated to the skull), and this absorption of the first free element is obviously correlated with the general disturbance in the distribution of the units of the column. There is a lack of fully described vertebral columns, some regions of which show anomalous types of vertebræ; for too often the anomaly is described without relation to the remainder of the vertebral elements. This careful record of an anomalous column is therefore a welcome addition to the literature, for it is only from such complete records that a future generation of anatomists may collect data for drawing

conclusions as to the real causation and meaning of these strange variations. Dr. W. L. H. Duckworth describes a curious variety of the first thoracic vertebra; but, unfortunately, the condition of the other units of the vertebral column cannot be recorded, and the anomaly must stand only as the recorded variation of an individual vertebra unassociated with anything that might tell of its causation or its significance. The same author also describes a case of osseous tumour of the frontal region of the skull, the chief interest of which lies in its association with certain abnormalities in the form of the pituitary fossa. Professor E. Fawcett, in a paper entitled "Some Notes on the Epiphyses of the Ribs," points out the discrepancy among the views of various anatomists concerning the number and situation of these centres; and he shows that the actual epiphyses vary in different members of the rib series. The epiphyses of the upper six ribs he finds to be somewhat different in their distribution from those of the lower six, and from this fact he adduces support for Dr. A. Keith's findings concerning the different rôles in respiration played by the upper and lower ribs. A paper by Professor E. J. Evatt deals with the development of the prostatic gland in the female and the homologies of the urethra and vagina in the two sexes. The writer reconstructs the urethra and vagina of a human female fœtus of 3½ months, and from the reconstruction and the study of sections of fœtal material he has come to the conclusion that the distribution of the prostatic remnants in the female points to the correctness of the views regarding the development of the vagina put forward some years ago by Berry Hart and by Wood Jones. He has given fresh evidence for the claims of these workers that the vagina is formed as a solid downgrowth, and not by septal division of the cloaca or by fusion of the Müllerian ducts. That a third independent worker has established the truth of these strange transformations of the visceral openings should place the matter beyond dispute. Since the understanding of the malformations of the visceral openings depends upon a knowledge of the manner of their development, it is to be hoped that these methods will become incorporated in ordinary gynæcological teaching. One other embryological paper is that of Mr. Douglas G. Reid, and it deals with the fœtal disposition of the peritoneum. Mr. A. B. Appleton gives a very detailed account of the brains of a Madrassi Hindu and of a Tamil, which are preserved in the Cambridge University Museum. Professor A. F. Dixon gives an account of a case from the dissecting rooms of Trinity College, Dublin, in which three kidneys were present. Mr. Percy Sargent has a paper entitled "Some Points in the Anatomy of the Intracranial Blood Sinuses," and Dr. S. E. Whitnall one dealing with "A Ligament acting as a Check to the Action of the Levator Palpebræ Superioris Muscle."

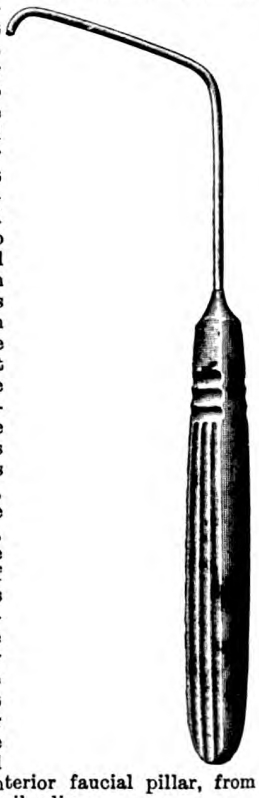
*Edinburgh Medical Journal.*—The February issue of this magazine contains several papers of exceptional interest. Dr. Ashley W. Mackintosh, Dr. A. W. Falconer, and Dr. A. G. Anderson write on congenital family cholæmia, otherwise called acholuric family jaundice, and describe a case in a boy aged 7 years. The condition is held to result from undue fragility of the red corpuscles, owing to which they break up in the circulation with formation of bile pigment which may be found dissolved in the serum, but which does not appear in the urine. With this condition may be contrasted that of erythræmia described by Dr. H. L. Watson Wemyss on a later page of this journal, which may, perhaps, be produced by diminished destruction of red cells, though another view attributes it to an affection of the bone-marrow. Mr. Alexander Don writes on operative procedures about the knee-joints and advises large incisions for opening this cavity. Dr. Charles Melland discusses conditions associated with enlargement of lymphatic glands, and Dr. R. Cranston Low writes on fungus infections of the finger-nails, which may be due to ringworm, to favus, or to an unknown species of fungus.

*Dublin Journal of Medical Science.*—In the January number is published an inaugural address by Mr. W. I. de C. Wheeler on the treatment of fractures by ancient and modern methods, in which he points out the advances due to Lucas-Championnière, who was followed by Mr. Arbuthnot Lane. He points out the dangers run by surgeons in connexion with the treatment of fractures, if they depart in any way from the accepted routine, in the event of an action being brought against them on account of a supposed defective result; and also the incapacity of the ordinary tribunals to decide questions involving these lesions in connexion with the Workmen's Compensation Act. Sir John Moore records a series of interesting clinical experiences, including cases of pneumonia and enteric fever, and one of staphylococcal septicæmia, which improved under vaccine treatment.

# New Inventions.

## A HOOK TO RETRACT THE ANTERIOR FAUCIAL PILLAR DURING "MORCELLEMENT" OF THE TONSIL.

THE numerous observations about the alarming hæmorrhages that follow the removal of the tonsils with the guillotine have contributed to extend the practice of morcellement of the tonsil with suitable forceps. This method is very easy to execute, it being possible to avoid bleeding and pain with the new chemical substances for local anæsthesia. The forceps used for "morcellement" exercise not only a cutting, but also a crushing action, which reduces and hinders hæmorrhage. In order to simplify the grasping of the tonsil a hook is often used, with which the faucial pillar covering its anterior surface is retracted. With the instrument usually used the faucial pillar is drawn out, but the assistant's hand masks the operation and limits the free movements of the surgeon. I have introduced with the best results a new type of hook, which was made for me by Mr. Spinelli, 2, Mazzini-street, Turin, Italy. The handle is 9 centimetres in length, the shaft 10 centimetres, and the hook 1 centimetre. The end of the instrument is rounded, so as not to damage the mucous membrane. The two portions of the shaft form an angle of 80°. By the use of this instrument the assistant's hand does not obstruct the surgeon. Moreover, the angular disposition of the hook and handle allows only a moderate lateral traction to be put upon the anterior faucial pillar, from behind which the hook does not easily slip.



Turin, Italy. CIRO CALDERA.

A BRISTOL CENTENARIAN.—A Bristolian named John Bevis died on Feb. 6th aged 104 years. He had for some time been an inmate of the "Home of the Sisters of the Poor" in Bristol, where he died.

# THE LANCET.

*LONDON: SATURDAY, FEBRUARY 18, 1911.*


## The Value of the Medical Museum.

TIME has again brought round the date of the delivery of the Hunterian Oration at the Royal College of Surgeons of England. There may be some who feel surprise that the College should commemorate every two years by the Hunterian Oration the life and work of JOHN HUNTER, while many other surgeons who in their day were attached to the College, and who performed services of the first importance to the cause of science, receive no such posthumous recognition. On what is this singularity of treatment based? Certainly upon no inclination to underrate the services to science of the other celebrated men who have worked for her in this country; the College, we may be sure, appreciates to the full the great benefits which have resulted to humanity at large from the self-sacrificing labours of many of the surgeons of the past, while the Hunterian orators do not claim that the work done by JOHN HUNTER was of such a kind as to mark him off from all others. But in this particular manner JOHN HUNTER stands pre-eminent—he was almost the first to advocate and practise systematic research either in biology pure or in biology as applied to medicine. He was in our view actually the first to grasp the potentialities underlying an extension of knowledge in the direction of comparative biology whereby the light thrown on disease in man could be made brighter by observations on disease in the lower animals; he was the first to recognise that life and its methods are one both in the lower animals and in man, and to see that the simplest, the most ready, and the most rapid method of advancing our knowledge of the processes of health and of disease in man would be by the systematic observation of these processes as they occur in the lower animals, possibly by creating experimental differences of condition suitable to supply the deficiencies of our knowledge. He recognised long before the days of DARWIN the oneness of man with the rest of the animal kingdom, and saw also that the morbid processes of plants might be similar in nature to, and comparable to, the morbid processes of man himself. Being thus the apostle of experimental and comparative medicine, he fully deserves that the medical profession should record from time to time their sense of obligation to him for what he did and for what he taught. The frequent recurrence of the Hunterian Oration is fully justified.

We do not propose here to refer to the individual discoveries and inventions, great though they were, for which HUNTER was responsible, they have been set out time after time by his biographers; rather we would point to the spirit with which he conducted the work which he set himself to do. He wanted facts. He did not underrate the forming of theories to account for phenomena that had been observed; he himself was ready enough to try to link together the various apparently disconnected phenomena by the chains of theory, and not the less so because he knew that at any moment a theory of itself might suggest the lines along which future researches should proceed. But he objected, and strenuously expressed his objection, to the building of theories without a firm basis. Only too commonly, in HUNTER'S time as before and since, theories have been formed apart from facts, and, again only too commonly, if any attempt has been made to find a connexion between the theories and the facts, the facts have been modified and deformed to accord with the theories. HUNTER insisted on two things—on the need for exact and repeated observation so as to eliminate the possibility of mistakes, and the need for accurate record of the observations made, so that they might be available for reference and comparison at other hands. We know, for we have the testimony of WILLIAM CLIFT, HUNTER'S famous pupil and assistant, that his master made most careful notes of all he did, and his personal records filled hundreds of pages in volumes which are, alas, now no more. The story of their destruction is too notorious to need repetition, but we see from his remaining work that HUNTER was ever ready to give credit to all his predecessors for the observations which they had made and for the facts they had recorded, though he only valued the work of others in so far as it consisted of faithful records of what had been seen and done. Observations of conditions which cannot be repeated have to be received on the mere statement of the observer, but when a condition is capable of experimental production, when its repetition is possible as need arises, it passes into the realm of fact. HUNTER knew this, but he knew also that it was possible to record observations so that the basis of any statements made concerning them could be readily seen, and it was to accomplish this purpose that he formed his museum. Before his time pathological museums must have been so comparatively small as to be quite unimportant. Few public bodies possessed museums of any form relating to science. The early lecturer on medicine or surgery at the medical schools generally possessed "a museum" for his own purposes, but such "museums" were as a rule small, and not necessarily made up of interesting specimens from cases which had fallen under the observation of their possessor. These collections were sets of objects for teaching and were often sold to his successor by the lecturer when his time came to cease giving lectures. HUNTER was the first to conceive the idea of a scientific museum in the modern sense, and to see that in such an institution there might be collected a tangible and largely indestructible basis upon which to rear pathological structures of all sorts. He endeavoured to bring together specimens of every sort illustrating facts in zoology, botany, and human anatomy, showing diseases of various kinds whether occurring in men, in animals, or plants. His specimens were not merely those which he prepared for himself or which came in his way in the course of his practice as a surgeon; he demanded and obtained for his great scheme the interest and collaboration of many other observers. His oft-quoted letters to EDWARD JENNER form but one series of correspondence which he had

with many friends in many parts of the country. Each one he employed to find, so far as time and opportunity would permit, specimens for his museum and to collect facts for his general work. When any point seemed doubtful and he was unable to fill up for himself the lacuna in his arguments he would write to one or other of his correspondents and entreat them to observe the facts or to ascertain the truth of some previous report. But he spared not himself. Working early and late, rising at daybreak and going late to rest, he devoted every moment not absorbed by his professional work to the perfecting of his museum. Successful as he was in practice, he valued that practice mainly for the power which it gave him to enlarge his museum and thus to gain more systematic knowledge; and the spirit with which he himself worked he inculcated in others. He asked no one else to do what he was not able and willing to do himself to aid in the discovery of the truth and the augmentation of human knowledge. HUNTER died poor. Apart from his museum and his notes he left almost nothing; and by his will we know that he looked to the purchase of his collection by the Government to provide for the family which he left behind him. And though it was a time of war, of storm and stress, and of enormous calls upon the public funds, the Government even of that day, with claims upon it whose urgency we in these softer times can hardly guess, was able to spare the small sum required to buy HUNTER'S museum.

And so it came to pass that the Hunterian Museum, great beyond all comparison in HUNTER'S day, was a few years after his death entrusted to the keeping of the Royal College of Surgeons of England, a State trust as the President of the College has pointed out. On the basis of JOHN HUNTER'S museum the authorities of the College, assisted by such conservators as WILLIAM CLIFT, RICHARD OWEN, JOHN QUEKETT, WILLIAM FLOWER, CHARLES STEWART, and ARTHUR KEITH, have formed a collection of human anatomy, both normal and pathological, of comparative anatomy, both of plants and animals, far surpassing any similar collection in the whole world. JOHN HUNTER'S museum was large—enormous for his time and for the work of one man—but the museum of the Royal College of Surgeons of England is the greatest collection of its kind in the world; its completeness and its value can only be appreciated by a careful and prolonged inspection. At a large total cost of money, during the many years which have elapsed since the museum was first entrusted to its care, the College has nourished the collection as it deserved to be nourished; it has been liberally supplied with funds, and above all things it has been wisely and jealously supervised. For all who are capable of knowing good work when it is done, of appreciating the value to science of such a collection as the museum, must acknowledge that the College could not have done more than it has done: it could not have more worthily carried out the work it has undertaken. What would have been the surprise, the pleasure, and the pride of JOHN HUNTER if he could but see the museum into which his own collection has grown. Mr. EDMUND OWEN'S oration on last Tuesday (see p. 417) was what those who know him might have expected; it was a clear, forcible, and eloquent picture of the greatest of biological teachers, one of the most original of British surgeons, and the first real exponent of the value of the experimental methods in medicine.

## The Education of Crippled Children.

THE national importance of the medical profession is perhaps in nothing more evidenced than in the fact that its outlook and scope have long ceased to be limited to the alleviation of individual suffering, or even to the prevention thereof by the inculcation of personal hygiene; that they have over-passed even the field of disease-prevention in the present by stimulating to effective action the public perception; that as each man's well-being depends not only on his own obedience to the laws of health but on that of others also, each has an interest in the healthy living of all, from which perception has arisen scientific sanitation; and that now these energies are directed to the guidance of the recently awakened public foresight in securing the utmost physical, mental, and moral efficiency for the coming race. In warfare every disabled soldier not only robs the fighting line of an effective unit, but if he remains in it he hampers and impedes the efficiency of the remainder. A wise general, therefore, looks for the prompt removal of such to the rear outside the sphere of action, where he may, if possible, be promptly restored to the effective strength in the field or, failing that, be cared for at the least possible tax on the effectiveness of the fighting force. Life, not only the life of the individual, but still more the life of a nation, is a warfare, and those who are born physically below the average, or who become so in their earliest years through the ignorance or indifference of those on whom they are entirely dependent for care and support, are the nation's future non-effectives. For this reason the adjustment of their relation to the education system, whereby each individual is trained ultimately to play his part in the nation's warfare, is highly important.

In a recently issued pamphlet, "The Care of Invalid and Crippled Children in School,"[1] Mr. R. C. ELMSLIE has republished a series of five lectures, the first of which was delivered in the course of advanced school hygiene at University College, London, the other four having been delivered to the school nurses attached to the London County Council invalid schools. They are now modified in detail and somewhat added to to suit a wider public than that for which they were originally written. While all the lectures are of public utility, the first especially is of far-reaching significance and deserves to be widely read. The writer aims to define the term "physical defect" as applied to school children and as used in the Elementary Education (Defective and Epileptic) Act of 1899. In this term he would include, not only all deformities and diseases of the bones, joints, and spine, which obviously cripple the child, but also all general defects of physique and chronic illnesses, anything which continuously interferes either with

[1] The Care of Invalid and Crippled Children in School. By R. C. Elmslie, M.S. Lond., F.R.C.S. Eng., Medical Officer (Invalid Schools) London County Council Education Committee. London: The School Hygiene Publishing Co., Limited. Price 1s.

attendance at school or with the ability of the scholar to follow in full the ordinary school routine. The duties of the school medical officer he divides into separating such children, supervising them, whether in ordinary or special schools, both at work and at play, advising their natural guardians when treatment is necessary, and supervising the instruction that may properly be given to them. Much has already been done to provide education under suitable conditions for certain classes of such subjects, but the great need is for the provision of resident hospital and sanatorium schools, where children who require prolonged hospital care (as, for instance, in the case of orthopædic patients or subjects of bone tuberculosis), children during prolonged convalescent treatment, or phthisical children, can have their education carried on simultaneously with proper physical care. Mr. ELMSLIE very cogently points out, in answer to an objection which is sometimes urged, especially in regard to the education of permanently crippled children—viz., that they are of no value to the community, and that by helping and educating them we are enabling them to survive and perpetuate their defects in their children—that they do survive whether we help them or not, and that by training them to make the most of themselves in spite of their limitations we lessen the burden on the community through workhouses and infirmaries; and, secondly, that in most cases such defects are acquired, and in the present state of our knowledge the inheritance of acquired defects is to be regarded as not proved and improbable. The early admittance of children to schools and the careful medical inspection of infant schools would lead to prompt discovery during the remediable stage of many cases of tuberculous bone disease, for these frequently originate before ordinary school life starts, when the vagueness of the accompanying phenomena (which by no means generally include, as is commonly supposed, easily recognisable characters, such as pain and deformity) makes the conditions appear trivial to the parents. Finally, crippled and defective children, more than others, especially need an efficient technical training to minimise their disabilities and enable them to compete with the healthy and well-informed; and the earlier manual instruction is given the more easily is dexterity attained, so that the loss of many initial years in elementary education is an even greater drawback to the defective than to the normal child.

## The After-Care Association.

THE annual meeting of this society was held on Feb. 8th, under the presidency of Mr. H. D. GREENE, K.C., one of the honorary Commissioners in Lunacy—a notable incident, because persons of such delicately and importantly responsible positions do not often preside over esoteric functions. The presence in the chair of a Lunacy Commissioner on this occasion gave the cachet of recognition and authority to an institution founded and maintained in a true philanthropic spirit, and affords us a reason for bringing before our readers in a prominent manner its very valuable design. The association had a very small beginning in the year 1869—though it was not until 1897 that it assumed a corporate form—when the Rev. HENRY HAWKINS, at that time the learned chaplain of the Colney Hatch Asylum, put into active motion an idea he had formed of the advantage, even the necessity, of following up some of the persons discharged as cured with the view of aiding them during the period between the return to home and the capacity for resuming occupation. Mr. HAWKINS'S idea was only slowly taken up, but through dint of his advocacy, aided by the persistent efforts of the great Lord SHAFTESBURY, Lord MEATH, a few medical men, and an energetic band of ladies, the movement attained considerable *vis viva*, and it now is generally recognised as a charity with great scope of usefulness. Owing to the pressure on accommodation in the county asylums it is necessary to discharge "recovered" patients as soon as possible, but there is no doubt that in many instances the "recovery" is not firmly established; it may be technically true, but it does not satisfy the ideas of those who know all about the case and are familiar with the relapses that so frequently occur in those whose convalescence is prematurely interfered with through having to return to work at once without having gone through an annealing process, so as to become tempered to the arduous surroundings of their avocations after leaving the fostering care of the institution. There are many other reasons why "recovery" in these discharged cases is only a comparative term. Patients, with the concurrence of their friends, are anxious to get free from the appanages of restraint, however graciously they may be exercised; they think that the shorter the time they are away from home the less serious will their illness be thought to have been; they know that in their absence the rest of the family is reduced to straits which make it imperative that they should resume at the earliest date the care of those from whom they have been sequestrated. And then again, there is a legal difficulty in detaining in an asylum persons who have technically become well mentally, even though it may be well known that the repair to the breach of continuity is of a very fragile nature and may be easily disrupted unless time is given for its consolidation.

The outside public views with distrust the employment of persons who have just been discharged from asylums; if they knew that a period of probation had elapsed between the time of leaving the institution and that all had gone well in the meantime they would have more confidence in resuming relationships. So cognisant of the advantages of a probationary interval are the authorities of many asylums that they actually do discharge for varying lengths of time, granting money allowances in the meanwhile, many patients who are really free from the symptoms for which they were originally detained, but who are not thought sufficiently recovered to resume work at once; but it must be remembered that during the period of "absence on trial" these people are still considered to be "patients" and remain under the force of their certificates, whereas under the auspices of the After-Care Association they are unfettered and have full sense of responsibility. As an economic factor this association has been of much use in preventing early convalescents from relapsing, thus becoming again chargeable to the rates and going through the misery of

a second attack. In this connexion it might be worth consideration by the Poor-law authorities how far they could expand or adopt the scheme of the After-Care Association, and so form as convalescent homes for their just recovered cases judiciously chosen places where, free from the incubus of certificates, a short time could be spent in perfecting a process barely completed. Private benevolence has often preceded State interference and shown the necessity for it; and under some such plan, though there would be a small extra burden on the rates, a saving would ultimately accrue owing to the diminished number of relapses, whilst the proper care and the support of the family would be ensured on the return home with much greater certainty of permanence than there is at present. These homes would be almost self-supporting, because if aptly chosen (and they need not be large) the smallest amount of supervision would be required and the necessary in- and out-door work would be done by the residents.

A further extension of the sphere of the After-Care Association is that for small weekly sums the bureau nominates houses into which can be received persons whose faculties are not quite up to the average, but yet who are capable of being usefully employed and made comfortable when superintended by people who have had previous experience in this direction. At one of the meetings a member of the association recommended that there should be a fore-care scheme as well as an after-care for persons who were on the verge of an illness which might be made abortive by some timely retreat. Such a scheme is feasible; it would make possible to the poor what is at present almost entirely confined to the well-to-do classes—viz., the privilege of being "voluntary boarders," an arrangement by which numbers of people get well without the formality and the odium of certificates. A boarding-out system has never found great favour in this country, but it has great potentialities, and we look forward with interest to see whether the After-Care Association can act as pioneer in a movement of this description, as it has certainly been in procuring aid for convalescents whose chances of permanent soundness were before imperilled. There are many ways of assisting necessitous people besides grants of money, and one of the salient features of this association is that by personal and particular supervision the individual's needs and powers are thoroughly understood and catered for. Most of the medical superintendents of asylums, than whom none know better the danger of exposing just recovered patients to the worries attending the restarting the machinery of social obligations, are active members of the association and have developed branches in the different counties with which they are chiefly concerned. In the absence of extraneous support of any kind the society is dependent on voluntary contributions and on the precarious amounts contributed by the committees of asylums who avail themselves at times of the resources which have been exploited by this band of charitable workers, but we think that a far greater development of the work is possible. A rich person in search of a movement which for its expansion requires a large donation could not easily find an object fraught with greater advantages to a particularly unfortunate class of people than by giving support to this humanely conceived organisation. The Commissioners in Lunacy have always strongly supported the claims of the association, to which, indeed, they hand on certain moneys, called the Commissioners' Fund, which are at their disposal for purposes similar to those of the association.

# Annotations.

"Ne quid nimis."

## SCHEDULE FOR SCOTTISH CENSUS OF 1911.

BY the courtesy of the Registrar-General for Scotland, we have received a copy of the Census schedule which will be distributed to the householders of Scotland on the appointed day in April next. As we have not yet seen either the English or the Irish schedule we are uncertain to what extent uniformity will be observed respecting the details of information demanded in the three divisions of the United Kingdom. But, from a cursory examination of the document before us, we assume that some modification at any rate will be needed in order to adapt the questions to the local requirements of England and of Ireland. We note that in the Scottish schedule the names of certain occupations are included which are peculiar to Scotland. For example, the terms "United Free Church Minister," "Episcopalian Clergyman," "Crofter fisherman," "Crofter road surfaceman," would hardly appear in an English or an Irish schedule. Again, the attempt to ascertain the proportion of the population speaking Gaelic alone, or Gaelic and English together, would scarcely be made on this side of the Tweed. On one point in particular the Registrar-General deserves congratulation. Under the heading "particulars as to marriage" he has inserted several columns designed to ascertain the degree of fertility among married women. Thus the householder or head of the family is requested to state, with respect to each married woman entered in the schedule: (1) The number of years elapsed since marriage; (2) the number of children born alive; (3) the number still living. If these facts can be ascertained with approximate accuracy it is obvious that material will be available for the investigation of problems regarding fertility and fecundity which will prove of great sanitary as well as economic importance. We trust and believe that similar information will be forthcoming for the other divisions of the United Kingdom. One word by way of criticism. We observe that the whole of one side of the Census sheet is occupied by the schedule itself, and that on the back of the sheet a large number of "instructions" are printed for filling up the columns headed "profession or occupation." After careful perusal of the schedule we confess that we ourselves should have difficulty in filling up certain of its columns, even with the help of the appended instructions; and we doubt whether the majority of working-class householders upon whom the duty is imposed will fully realise their responsibilities in this regard. When Dr. Grimshaw was Registrar-General of Ireland the schedule was directed to be filled up, not by the often illiterate householder, but by the enumerator, who was usually a police officer. It was Dr. Grimshaw's deliberate opinion that the Irish system led to the making of Census returns infinitely more accurate than could be hoped for under either the English or the Scotch system then in vogue, which was that of relying upon the sagacity of the average householder or head of a family. We shall be interested to observe how the difficulty to which we have referred is dealt with in Scotland.

## THE PERAMBULATING ORGAN AND THE DECOY CHILD.

CHILDREN carried upon organs played in the streets are frequently an object of commiseration to passers-by, more particularly in weather as cold as that which has recently prevailed, and pity for the child no doubt often takes the somewhat illogical form of pence bestowed upon the persons in charge, who are presumed to be destitute parents. The practice is one which all must condemn on the child's account, and many will sympathise with the child and the constable referred to in the recent newspaper reports of a prosecution at the Marylebone police court. In this instance it may be that the charge was not rightly framed, but the result appears unfortunate. A constable arrested a man and woman who were playing an organ in the street with their child, aged 21 months, with them, the child being described by the constable as seated in a box and "shaking with cold." Mr. Plowden, before whom the parents were brought at the Marylebone police court, observed that "there are a number of people who derive pleasure from hearing an organ," to which the constable replied by calling attention to the presence of the child, when Mr. Plowden answered, "Well, there is no harm in people having a child with them." The constable: "But it was cold." Mr. Plowden: "We all suffer from that. It is legal to play an organ if no one objects. There is absolutely no reason for charging these people." It may be, as has been suggested, that the charge on which the parents were brought before the magistrate was one which could not be sustained, but it is difficult to agree with the apparent meaning of the magistrate that there is no harm in conduct such as that described. It would also seem to come near to justifying a charge of exposing a child in a manner likely to cause unnecessary suffering or injury to health under the twelfth section of the Children Act, 1908, or, perhaps, under the fourteenth section of the same Act, for that children carried about by organ-players are so treated, as a rule, in order to increase their "earnings" can hardly be questioned. The fourteenth section is as follows:—

(1) If any person causes or procures any child or young person, or having the custody, charge, or care of a child or young person, allows that child or young person to be in any street, premises, or place for the purpose of begging or receiving alms, or of inducing the giving of alms, whether or not there is any pretence of singing, playing, performing, offering anything for sale, or otherwise, that person, shall on summary conviction, be liable to a fine not exceeding twenty-five pounds, or alternatively, or in default of payment of such fine, or in addition thereto, to imprisonment, with or without hard labour, for any term not exceeding three months.

The people who derive pleasure from hearing an organ presumably enjoy the same sensations when the instrument is played by a man unaccompanied by his wife and by an infant "shivering with cold," and when he takes these with him it is not unreasonable to suggest that he does so in order to excite sympathy, or in other words to attract alms. It is possible, however, that the fourteenth section is only intended to apply where the child takes a more active part in inducing the giving of alms than it does when it "sits in a box," and that the pretence of playing must be made by the child itself and not by persons who accompany it.

## PREVENTION OF PAIN AFTER AMPUTATION BY THE INJECTION OF SOLUTION OF QUININE.

THE value of quinine as a local anæsthetic is only beginning to be recognised, and this is strange, for the drug itself has been known 90 years. In the January number of the *American Journal of Surgery* occurs an article by Dr. V. Pleth and Dr. V. W. Pleth of Seguin, Texas, on the value of a solution of quinine for preventing the pain in the stump after amputation. It is used as follows. When the amputation is completed and the vessels tied the solution of quinine is injected into the main nerves and around them, and after the wound is closed about three ounces of the solution are injected into the tissues composing the stump. The patient suffers no post-operative pain. The solution employed consists of a 0·5 per cent. solution of bisulphate of quinine. The treatment appears to have no injurious influence on the tissues. The application of the drug has also been extended to the treatment of fractures. With a strong gold-plated needle the quinine solution is forced in between the fragments of the fracture and several syringefuls are also injected around the fracture, and in about 15 minutes reduction can be made without causing pain. The writers have also used quinine in operations on the rectum for fistula, hæmorrhoids, and fissures. Severe pain following rectal operations is in this way obviated. There are several advantages in using quinine for local anæsthesia; it is non-toxic and therefore can be used freely; it can be sterilised by boiling without losing its efficacy; and, lastly, it is cheap.

## THE INTERNATIONAL HYGIENE EXHIBITION, DRESDEN, 1911.

AN organisation which aims at success must satisfy public opinion in several respects. In the first place the promoters must produce evidence of capability and earnestness. In the second they must deliberate with care, and expend time, energy, and money in casting their mould and in laying their foundations. Next there must be proof of the importance to the public of the undertaking, and, lastly, means must be adopted to inform the public of the details of the scheme. The administration of the International Hygiene Exhibition, Dresden, 1911, has fulfilled all these conditions, and we may safely assert that success is assured. The promoters include the most eminent scientists in the German Empire; each committee (and there are many) is doing real earnest work, carefully planned and maturely developed, and expenditure is not begrudged in accomplishing this work. We have on previous occasions pointed out in THE LANCET the educational and scientific importance of this undertaking to mankind. With regard to publicity also the administration has left nothing to chance. For the past 19 weeks a two-page pamphlet called "Hygieia" has been issued widely, in which the reader is informed of the progress of the exhibition preparations and in which his interest in the various branches of hygiene and public health is awakened and kept awake by skilfully penned popular articles. We have now before us the first issue of a more enterprising publication which is to appear in monthly numbers and which bears the title "Hygiene." The contents of No. 1 are varied, interesting, and instructive, and include a brief historical account of the development of the exhibition; an article on the architecture of the buildings now in the course of erection, which will reflect credit to the 21 skilled architects who are devoting their time and energies to the task; a brief account of some of the congresses which are to be held in connexion with the exhibition, and a number of illuminating essays on subjects which will be dealt with. The publication is well got up and most excellently illustrated. Attention may be directed to the picture of the Russian Government Pavilion which in true national architecture promises to be a great feature of the exhibition. Close to this building the French Government is to erect the French National Pavilion, while the space between—the choicest site of all—is still being reserved for the British Pavilion. It is a deplorable fact that our Government has not accepted as its duty the task of erecting and equipping this building, but thanks to the conspicuous energies of the British National Committee,

and particularly of Sir Thomas Barlow, the chairman, and Lord Ilkeston, the treasurer, there is good prospect that the sum required to carry this project through without the Government will be collected in time. Support has already been received from several corporations, notably those of Glasgow, Manchester, and Liverpool, from several of the City Companies, and from many prominent scientific firms. Much still remains to be done, and there is but little time to do it; but now that nearly one-third of the amount has been secured the officials are confident that the remainder will be forthcoming. The appeal which is being made calls on all to subscribe small or large amounts to uphold the reputation of Great Britain as the pioneer and leader in hygiene and to further feelings of real friendship between England and Germany, which have already been questioned by the German press. Cheques should be made payable to Lord Ilkeston, treasurer of the British Executive Committee, International Hygiene Exhibition, and sent to 47, Victoria-street, London, S.W.

## HÆMOLYTIC JAUNDICE WITH HÆMOGLOBINURIC CRISES.

To the brief series of cases hitherto recorded in which the production of jaundice associated with paroxysms of hæmoglobinuria has been traced to hæmolysis an important addition has been made by Dr. A. A. Hijmans van den Bergh of Rotterdam, and recorded in the *Revue de Médecine* for January. The subject of this observer's investigations was a man aged 47, whose family history was innocent of any similar event and who had never suffered from any serious illness. In 1899 he first consulted a medical man on account of an attack which was pronounced to be a catarrhal jaundice, though the fæces were normal in colour and the urine contained much urobilin but no bilirubin. In 1904 he expectorated blood, but no other evidences of pulmonary disease were manifest. The first bout of hæmoglobinuria occurred in 1905, and since that date the attacks have returned at irregular intervals and with a widely varying intensity. No cause for these attacks could be discovered; they were not confined to cold weather and they did not follow the ingestion of any particular food. They lasted one day in some instances, in others several days. Each attack was accompanied by an aggravation of the anæmia and jaundice, which persisted in some degree even between the attacks, by a sense of oppression in the præcordium, and by pain referred to the hypogastrium during the passage of the hæmoglobinuric urine. For some days after a paroxysm the urine contained albumin and casts. The excretion of urobilin, always supernormal, was also increased during the attack and immediately after it. The spleen was not enlarged. Examination of the blood showed a hæmoglobin content of 50 per cent., an erythrocyte count of 2,970,000 per cubic millimetre, and a corpuscular picture characterised by no changes other than those of a secondary anæmia. In one of the attacks the hæmoglobin stood at 40 per cent. and the red corpuscles at 1,156,000 per cubic millimetre. The patient's corpuscles showed a normal resistance to the ordinary hæmolytic tests, and at the same time the serum was proved to contain no abnormal hæmolysins. Dr. van den Bergh therefore had recourse to certain methods of hæmolysis which he had found useful in the investigation of hæmoglobinuria "a frigore." These experiments yielded results of some interest. The first series of tests showed that the corpuscles of the patient were destroyed by the patient's serum and also by a normal serum at body temperature in the presence of carbon dioxide vapour, but not in the presence of air or at laboratory temperature (except in one test where the normal serum exercised a hæmolytic action at 16° C. in the presence of $CO_2$). Another series of similar tests gave the same result as far as the action of the patient's serum was concerned; but the control serum showed a hæmolytic action in air or in $CO_2$ at 16° C. as well as at 37° C. These experiments prove that for the case under consideration the hæmolytic factor was corpuscular fragility; and they suggest the advisability of further investigations bearing on the activation of this tendency to hæmolysis such as was achieved in Dr. van den Bergh's experiments by the substitution of carbon dioxide for air, and the use of a temperature raised to that of the body.

## A FALLACY ABOUT COFFEE.

IN looking about for an explanation of the recent cases of poisoning at Dalkeith, in which the poison was conveyed through drinking coffee, the suggestion has been made and widely circulated that there is a certain coffee-bean which in given circumstances throws off a deadly poison. This information will come as a surprise to all toxicologists. We know of no such coffee-bean, and we very much doubt its existence. It is a great pity that newspapers cannot guard themselves against such statements. The confidence of the public is thereby seriously disturbed and a needless fear is sown in their minds. Apart from scientific investigation, the evidence of experience is completely opposed to the notion that sometimes coffee beans are met with which give off a deadly poison. If coffee contained a volatile poison at all in the sense that the original disseminator of this scare probably had in his mind, it would be thrown off obviously in the roasting. As is well known, a strong infusion of coffee has proved most useful to counteract the effect of poisons, and its use is particularly enjoined when an overdose of a narcotic—e.g., morphia—has been taken. Coffee, in common with most articles of food, may disagree with some people, who soon find that fact out and take care to exclude it from their dietary. But it is innocent of poison and to a great number of people is an undoubted boon. Such people may continue to enjoy their favourite beverage without the slightest fear that for some mysterious reason Nature makes some of the beans poisonous. The widespread publication of the fallacy has been most unfair to the public, besides constituting an obvious injustice to the coffee trade.

## THE TREATMENT OF INCIPIENT PHTHISIS IN EAST LONDON.

IN a report recently presented to the Public Health Committee of the Borough of Poplar, Mr. F. W. Alexander, the medical officer of health, has suggested a scheme for preventing the spread of tuberculous infection, and benefiting, with the hope of curing, cases of pulmonary tuberculosis in subjects who have work to do and are able to undertake it. He suggests the purchase of two or more large houses in the borough with open spaces in the rear, so that huts may be erected in the grounds, and the rooms of the houses utilised for open-air treatment by adaptation of the windows for such a purpose. The rooms could be fitted with apparatus for keeping the air charged with ozone, and used by persons in the incipient stage of phthisis for sleeping purposes at night, whilst attending their work during the day. A short time ago Mr. Alexander put forward a proposal for the purchase by the local public, as a memorial to the late King Edward, of the City of London Union Infirmary (now disused), a building standing upon five acres of ground, conveniently situated in a main thoroughfare of the East-end of London, immediately upon the borders of the boroughs of Poplar and Stepney and within easy reach of Bethnal Green, Hackney,

Shoreditch, and West Ham, which could be used for such a purpose. It is unfortunate that so eminently practical a proposal has not received the local support necessary to put it on foot, for the building might be used also as a tuberculosis dispensary. A combination of the early notification of phthisis, with in suitable cases its immediate treatment, together with good hygienic sleeping accommodation, each patient under his own medical adviser, seems a promising method of capturing and dealing with incipient phthisis amongst men in full and active employment, whom the hospitals and consumption sanatoriums do not reach.

## THE CLIMATIC ADAPTATION OF THE IMMIGRANT.

RACE adaptation to climate has received at various times considerable attention at the hands of Major Charles E. Woodruff, of the Medical Corps of the United States Army, whose views on the question of the harmfulness of excessive sunlight to blondes have met with much opposition, though he appears to have adduced not a little *primâ-facie* evidence in their support. Probably the truth lies, as usual, midway between two extremes. In the *Eugenics Review* for January, he writes some interesting remarks on "The Eugenics of Migrants." He there points out that a character that is of indispensable value in one environment may be so injurious in another that migrants promptly perish. Nearly every species is limited to a very restricted environment, and those which change residence with the seasons are really more restricted than those able to stay behind and resist the changes of weather. The medical profession, he says, is only just beginning to realise that man himself is governed by the same laws of adaptation, and that each type has developed characters which fit it for residence in the place of origin. Four factors in the past have influenced migration. In the earliest times movement was naturally slow, so that evolution could proceed *pari passu;* then social organisation added its prevention of invasion. Later, however, military organisation caused rapid migrations, which have become greatly increased by the rapidity of modern transportation. Major Woodruff discusses adaptation as shown in alteration of pigmentation and weight, and cites the disappearance of the type of northern invaders from the southern lowlands of Italy—of the men, that is, from the north, who were the real authors of the Italian renaissance, the significance of whose Italianised names is often contradicted by their extant portraits. He alludes also to the experience of America, where the blonde type, of which the women sent over from Northern France almost entirely consisted, has nearly disappeared from the St. Lawrence Valley, and entirely so from New Orleans. The blondes in American cities and lowlands, he says, have a higher death-rate from certain diseases than the rest of the population, and tend to disappear, while those in the mountains remain vigorous after many generations. Nature herself carries on among migrants the expensive eugenic movement of killing off the least adjusted. In the meantime those on the way to extinction are less able to struggle for existence, and so furnish more than their due proportion of social parasites. This is the point that must be considered in all eugenic discussions. Migrants should strive to have their children reared in a climate proper to their racial characteristics, even though they themselves have to live elsewhere—a fact with which Anglo-Indians have become familiar years ago. Major Woodruff suggests an investigation among the "failures," the "submerged tenth," in London and all large cities, not only of Europe, but also of America, Africa, and Australia, to decide their prevailing characteristics in each case—whether tall or short, light or dark, over- or under-weight. This may demonstrate that certain types are locally on the way to a final elimination that cannot be prevented by eugenics. He alone is *eugenes*, well-bred, who is of the type adjusted to the place, and the migration streams must continue until each type finds its proper adjustment. The production of a higher mental type depends probably, at any rate in great degree, on first acquiring a physique perfectly adapted to its climatic environment.

## THE ACTION OF DRUGS.

IN a paper read at the February evening meeting of the Pharmaceutical Society Dr. W. E. Dixon, professor of materia medica and pharmacology at King's College, London, discussed the action of various drugs, the object of the paper being to explain the purpose of the pharmacological notes in the British Pharmaceutical Codex. He said that few drugs had attained more popularity lately than compounds of calcium, but if a calcium effect is really needed the drug must be injected under the skin. Similarly, the specific effects of potassium or ammonium salts could only be produced in this way, since their rates of elimination could more than keep pace with their absorption. The local application of opium or morphine in any form was harmless, though of little value in relieving local pain, since the seat of action of morphine was on the central nervous system. Proceeding, he said that quinine was not in any sense a tonic; it was rather an atonic drug; it was a poison to all protoplasm and diminished metabolism. Referring to the organic compounds with the metals, he said experiments seemed to show that none of the organic compounds of silver were superior to silver nitrate, and that the organic compounds of iron mostly derived from blood must first be broken down and digested before absorption occurred. These are a few of the examples selected by Dr. Dixon to give some idea of the scope of the pharmacological notes included in the monographs—notes for which, in his view, some need was certainly felt by medical practitioners.

## REPORT OF THE DEPARTMENTAL COMMITTEE ON CORONERS.[1]

THIS report, which has just been issued as a Blue-book, contains the evidence of certain witnesses recalled and further examined, together with ten appendices, amongst which are a summary and analysis of replies to questions addressed by the committee to coroners of England and Wales, a memorandum on behalf of the London County Council, a memorandum on behalf of the British Medical Association, and the returns for England and Wales of reported deaths under anæsthetics during 1908. The memorandum on behalf of the British Medical Association, after certain introductory paragraphs, is divided into four parts, dealing respectively with death certification, the procedure of coroners, deaths under anæsthesia, and the question of necessity for inquiry into deaths following surgical operations. The memorandum submits a scheme of death certification providing means whereby a medical certificate of death shall be obtained in most cases not certified by the medical practitioner in attendance, leaving the remainder to be dealt with by the coroners, and points out the defects in the present procedure. Questioned upon this subject, 169 coroners replied that they were satisfied with the present system, and 99 coroners stated

[1] Second Report of the Departmental Committee appointed to inquire into the Law relating to Coroners and Coroners' Inquests, and into the Practice in Coroners' Courts. Part III. Cd. 5492. London: Eyre and Spottiswoode, Limited. Pp. 109.

that there were difficulties and the system did not work satisfactorily. This serious division of opinion among coroners certainly justifies the British Medical Association in its desire for amendment of the laws. In regard to medical evidence as to the cause of death, the memorandum rightly states that it is of two kinds: (1) clinical, and (2) pathological, the former being of especial value in the preliminary inquiry when the coroner has to decide whether he shall order a post-mortem examination, and, if so, who shall be ordered to do this. This is a matter upon which various and conflicting opinions prevail and it has been the cause of much dissatisfaction in particular quarters. The large majority of coroners, 240 out of 275, consider that the selection should be at the entire discretion of the coroner, and of the remainder, 22 are in favour of entrusting the post-mortem examination to an independent expert in all cases (although they do not state that the medical man concerned is not to be called upon to give evidence or to aid inquiry in other ways) and 13 are in favour of employing the medical attendant to perform the post-mortem examination. The suggestion contained in the memorandum that the coroner's inquest is not a suitable form of inquiry into deaths under anæsthesia, but that this should be carried out in private by a medical officer under the general control of the Home Office, is one of serious importance having regard to the number of cases in which a coroner's jury brought in a verdict of "misadventure" or "accidental death," details of which are given in Appendix IV. of the report. The memorandum of the London Council is lengthy and deals with many controversial matters which cannot be briefly commented on, but, together with other matters contained in the report not of such immediate medical interest, it will be reviewed in detail in a forthcoming issue of THE LANCET.

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SIX Hunterian lectures on the Fossil Remains of Man and their Bearing on the Origin of Modern British Types will be delivered in the Theatre of the Royal College of Surgeons of England, in Lincoln's Inn Fields, by Dr. Arthur Keith, Conservator of the Museum, on dates already announced.[1] These lectures are designed to serve as an introduction to the study of the anthropological collection in the Museum of the College, and will be illustrated by means of the epidiascope. The subject will be considered under the following heads:—The fossil human remains found at Galley Hill, Kent; reconstruction of the remains; similar discoveries made at home and abroad; persistence of the type; the Heidelberg mandible; the extent to which a reconstruction of the individual may be effected; pithecanthropus; its discovery, nature, and relationships to human races; the Gibraltar skull; its discovery and bearing on the evolution of man; the Neanderthal race; recent discoveries in France; the bearing of acromegaly on the characters of this race; Huxley's "river-bed" type of ancient Briton; recent and old discoveries of this type; the relationship of the type to ancient and modern forms of Britons; recent discoveries of ancient human remains in Kent, Essex, and Herts; summary of the geological evidence relating to the origin of modern types of man.

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IT is announced that their Royal Highnesses the Prince of Wales and Prince Albert are suffering from measles of a mild form. On the outbreak of the epidemic at the Royal Naval College, Dartmouth, they were isolated in the Commandant's house, and it was hoped that they would escape. They have not done so, but the Princes are at the age of least danger, and the important measure of confinement to bed, to the neglect of which so many complications and sequelæ are frequently due, is being enforced. It is to the complications and sequelæ of the disease, rather than to the disease itself, that the danger principally attaches, and these are very largely to be avoided by a proper appreciation of the risks.

[1] THE LANCET, Jan. 21st, 1911, p. 182.

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THE lectures of the Royal College of Physicians of London for the present year will be delivered at the College, Pall Mall East, on the following Tuesdays and Thursdays, at 5 o'clock. Milroy lectures on March 2nd, 7th, and 9th, by Dr. A. E. Boycott, on Ankylostoma Infection; Goulstonian lectures on March 14th, 16th, and 21st, by Dr. A. F. Hertz, on the Sensibility of the Alimentary Canal in Health and Disease; Lumleian lectures on March 23rd, 28th, and 30th, by Dr. J. Mitchell Bruce, on a Clinical Study of Cardio-vascular Degeneration; Oliver-Sharpey lectures on April 4th and 6th, by Dr. J. Mackenzie, on Heart Failure.

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THE report on the work of the Central Midwives Board for the year ended March 31st, 1910, has been printed as a Parliamentary Paper.

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THE anniversary dinner of the Medical Society of London will take place at the Whitehall Rooms, Hôtel Métropole, on Wednesday, March 8th, at 7.30 P.M.

## MEDICINE AND THE LAW.

*The Liabilities of the Education Authority.*

THE burden of responsibility cast upon county councils by their position as the authorities charged with the elementary education of children does not diminish. Children are admittedly liable to injure themselves by accidents from which the most meticulously careful parents, guardians, and teachers are unable to protect them. If a pupil falls and hurts himself in a school playground the school authorities are likely to find themselves mulcted in damages because the accident was directly caused by some obstruction which they might have removed and over which the child tripped, and various accidents of this character frequently expose them to litigation. In a recent case the question of the council's liability arose thus. A vehicle was provided by the Herefordshire county council under powers given to it by the Education Act, in order that children living more than three miles from a certain school might be conveyed to it. A little girl called Shrimpton, not living at such a distance as would entitle her to ride to and from school but well within it, was allowed by the driver of the vehicle, presumably out of pure good nature, to get in and out because it passed her home. One day when she was alighting the vehicle moved on suddenly and she fell upon her head in the road, sustaining injuries for which a jury awarded her £277 against the county council. The council maintained that the person liable, if any, was the jobmistress from whom they hired the vehicle. In the Court of Appeal Lord Justice Fletcher Moulton and Lord Justice Buckley were of the opinion that the evidence at the trial showed no duty on the part of the defendant council of which there had been any breach or neglect, and reversed the judgment of Mr. Justice Channell in the court below, Lord Justice Vaughan Williams dissenting from their view. On appeal to the House of Lords the Lord Chancellor, Lords Halsbury, Ashbourne, Atkinson, and Shaw were unanimously of opinion that the Court of Appeal was wrong and restored the judgment for £277 damages. In giving judgment the Lord Chancellor said that the county council were not under a statutory obligation to convey the child in question to or from the school, but as they did, in fact, convey her they undertook the duty, as they did towards the other children, of providing a proper vehicle and of taking reasonable care of her. The jury had found that the accident had been caused by negligence; the council did not see that proper care was taken and the appeal must be allowed.

# MEDICAL INSPECTION AND TREATMENT OF LONDON SCHOOL CHILDREN.

*Medical Aspects of the Education Estimates.*

THE Education Committee of the London County Council on Feb. 8th had before it the annual estimates of expenditure for 1911–12. The total was £4,981,110, about half of which represented salaries of teachers. The following individual items may be mentioned: meals for underfed children, £89,545; medical inspection and treatment, £39,960; cleansing children, £2205; open-air schools, £1750; special schools—blind, £9915; deaf, £17,415; mentally defective, £56,950; physically defective, £42,480; epileptic, £2440—total, £129,200. Under the head of provisional sums for expenditure not yet sanctioned by the Council were the following items: further provision for dental treatment, £5000; provision for improving the working of the Council's arrangements with the hospitals, £1000; cleansing of verminous children, £2370. On the receipts side of the maintenance estimates were these entries: cost of meals recovered from parents, £905; ditto medical treatment, £550. The general purposes subcommittee, in its observations, said the estimated increase of £26,400 in the cost of school meals was due to the increased cost in the preparation and service of the meals consequent on the decision of the Council to appoint a number of supervisors. The increase of £20,885 under "medical inspection and treatment" was accounted for by the employment of additional school medical officers, and the treatment of children for eye, ear, and skin ailments. The estimate included a proportion of establishment charges not previously made, so that the actual increase was £12,000, of which £4000 represented the salaries of the increased medical staff. The estimate was based on provision for the treatment of 62,000 eye, ear, nose, and throat cases, and 1200 ringworm cases. The hospitals and medical treatment centres at present included in the Council's scheme could provide treatment for some 32,000 eye, ear, nose, and throat cases, and 1325 ringworm cases. The average cost was 4*s*. 6*d*. a case in respect of eye, ear, nose and throat ailments, and 17*s*. 10*d*. for ringworm cases. Of the provisional items of £5000 for dental treatment the subcommittee said that this was included to provide for "further experimental dental surgeries. This sum will also allow of general provision being made for a small portion of the year for all cases of London children requiring treatment." As to the improvement of the working of the Council's arrangements with hospitals the subcommittee said that at present it was not possible to obtain early information from the hospitals as to the attendance of the children, and many ceased attendance before treatment was completed. It was desirable, therefore, to make provision at the hospitals and medical treatment centres for following up cases, and so avoiding leakage. Regarding the recovery of the cost of treatment it was impossible to give any reliable estimate. From January to December, 1910, £185 were actually recovered from parents, but the children's care subcommittee was considerably in arrear with the assessment of charges. On Feb. 14th the Council approved a supplemental estimate of £23,800 in respect of feeding necessitous children, bringing the allowance under this head to £88,092 for the current financial year.

*New Medical Appointment.*

The Special Schools Subcommittee has presented a report in favour of placing the medical officer (education) formally in charge of the medical arrangements at the Council's special schools of all kinds, the local medical officers being instructed to communicate with him in all serious cases of illness and on medical matters affecting the schools. There was no reason why the scheme of sight-testing in force in ordinary schools should not be applied to schools for the deaf and physically defective, especially in view of the need those two classes had of preserving their eyesight if they were to become self-supporting, and the subcommittee was of opinion that this should be done. Owing to their unreliability under test it would not be desirable to apply the scheme to schools for mentally defective. The question arose of the additional medical staff necessary to carry out the work. The subcommittee calculated that it would be necessary to appoint additional staff to the extent of 189 sessions per annum (nearly one and a half quarter-time medical officers). The Council on Nov. 1st, 1910, has decided that there should be more detailed and frequent examination of children in special schools, and sanctioned the appointment of two additional quarter-time doctors for the work, but as this was the minimum staff required to carry out the wishes of the Council, no part of it could be employed to examine cases for admission. For supervision of medical matters in special schools an additional quarter-time assistant medical officer would be required, but rather than appoint the equivalent of two and a half quarter-time officers the subcommittee thought it would be better to abolish one of the present quarter-time posts and appoint a full-time officer as medical examiner under the Elementary Education (Defective and Epileptic Children) Act, 1899. This post would be of a grade somewhat lower than that of full-time assistant medical officer, but higher than that of a school doctor, and a suitable man could be obtained for a salary of £400 a year, rising by annual increments of £25 to a maximum of £500 a year. The proposal was approved except that "medical officer" was substituted for "medical examiner."

*Difficulties Arising out of the Medical Treatment Scheme.*

The Children's Care Subcommittee, in a long report, dealt with the whole question of the charges to parents in respect of the medical treatment of their children. The experience of the past year, it was stated, showed the scale by which remissions were calculated to be too complicated. (This scale took a "standard family" as consisting of two adults and four children, and went into such detail as to grant remissions varying by a penny or two as between a man having 22*s*. 6*d*. and one having 25*s*. per week.) The administration of this scale had been "a source of considerable difficulty." It had also to be stated that as prior to the arrangements made by the Council necessitous parents were able to obtain free treatment at most of the hospitals, many of them regarded the Council's arrangements as an interference with what they considered to be their rights and privileges. At the present time the work of assessing charges was seriously in arrear—out of 14,000 cases treated only 7000 had been assessed. Care committees objected to having to go through the trouble of assessing and presenting claims to parents where there was no intention to recover. Some care committees had declined to undertake the work at all. From the point of view of the hospitals it was contended that the fact that the Council made a charge to parents was likely to have a prejudicial effect upon subscriptions. Many subscribers contributed to the funds of a hospital because they were desirous of assisting poor people to obtain treatment. Many hospitals were constituted as institutions to provide "free treatment for the sick poor," and this had prevented certain of them from coming within the Council's scheme, and was understood to be the chief consideration which influenced the authorities of St. George's Hospital to withdraw from the scheme. Another difficulty arose in connexion with the Hospital Saturday Fund, 75 per cent. of which was obtained as the result of small sums contributed by employees in workshops and factories. Since the adoption of the Council's scheme certain of the hospitals—a relatively small number—had declined to accept in some instances Hospital Saturday Fund letters from children and had required a Council voucher instead. The supply of this voucher involved a charge to the parents by the Council. Parents who were subscribers to the fund considered that they made two contributions for the treatment received under the arrangements made by the Council.

Having regard to these considerations, the subcommittee thought the existing arrangements in respect of charges for medical treatment should be discontinued. It was not prepared to substitute a classification suggested by the Finance Committee on the following lines: (1) parents able to do so to pay the full amount; (2) parents able to pay only part of the cost, to pay a definite fixed amount; and (3) parents unable to pay anything to be exempted. This scale to apply to dental treatment, 1*s*. being charged where parents were only able to pay part of the cost. Such a system would not obviate detailed inquiries into the circumstances of parents or lessen to any appreciable extent the work of the care committees or obviate the other difficulties to which attention had been drawn. The subcommittee proposed that a uniform charge of 1*s*. should be adopted for the complete treatment

both of medical and dental cases, no charge to be made in necessitous cases or in cases where after careful inquiry it was ascertained that the parent had been accustomed to subscribe to the Hospital Saturday Fund or had any other legitimate claim to free hospital treatment.

The recommendations were approved, but a proposal to remit all existing arrears in order to relieve the care committees of the work of assessment was withdrawn by the chairman of the subcommittee.

*Open-air Schools and Playground Classes.*

The committee decided, subject to the approval of the Board of Education, to continue the open-air schools held in London for the last three years and also the playground classes begun last year. The Day Schools Subcommittee stated that the reports on the playground classes were extremely favourable. The medical officer (education), Dr. Kerr, dealing with a class at Bethnal Green said the children selected were representative of the lowest stratum in that part of London. Without necessarily presenting signs of organic disease they were ill-nourished, ill-clad, pallid, and inert. The very first medical examination three weeks after the inception of the class left no doubt as to the highly beneficial effect of the régime out of doors upon the children. The school doctor, said Dr. Kerr, stated that in many cases he felt doubtful for a moment whether the children were the ones he originally selected, the difference was so great. Instead of a habitual condition of apathy and dulness the children displayed an interest in their work and a readiness to respond. Their demeanour was unmistakably more alert and spirited. The health of the children in no case suffered, while colds were almost entirely absent. The subcommittee mentioned, in regard to open-air schools, that the report upon last year's working was not yet ready, but there was no doubt it would be similar to those presented in 1909 and 1908. There were two hindrances to their extension—it had been found impossible to secure suitable sites in those parts of London where they were most needed, and the administration was costly, the average per head being about £20 per annum.

# ANNUAL REPORT FOR 1909 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

## III.[1]

*Diphtheria.—Enteric Fever.*

AMONG the diseases the spread of which is believed to have relation to the aggregation of children in schools, a prominent place in these reports is always accorded to diphtheria. In the year under notice the proportion of reported cases of this disease (including membranous croup) was the same as it had been in 1905—namely, 1·4 per 1000 of the population at all ages, which is the lowest rate hitherto recorded in London. The disease, however, appears to have assumed a somewhat more fatal type, for the case-mortality among the reported cases was above the average in the four years immediately preceding More than four-fifths of the cases known to the sanitary authorities are now treated in the hospitals of the Metropolitan Asylums Board; and we are concerned to note that among the cases medically certified to be diphtheritic, and admitted as such to the wards, the proportion of instances of mistaken diagnosis in the year under notice was as high as 16·8 per cent. In three of the metropolitan boroughs—viz., Lambeth, Greenwich, and Stoke Newington—the medical officers of health are supplied with antitoxic serum for use by medical practitioners. The experience of the Metropolitan Asylums Board, gained in the Board's hospitals, is emphatic as to the importance of making antitoxic serum available for use without delay. Among hospital cases treated with this serum in 1908 the mortality is reported to have been as follows: In cases where the treatment was begun on the first day of illness, 3·0 per cent.; on the second day of illness, 6·5 per cent.; on the third day, 10·6 per cent.; on the fourth day, 12·9 per cent.; and on the fifth day and later, 14·8 per cent. The metropolitan boroughs showing the lowest proportions of attack by diphtheria were Hampstead, where the rate was equal to 0·50 per 1000 living, and Stoke Newington, where it was 0·52 per 1000. The boroughs with the highest rates were Woolwich, 2·01 per 1000, and Lewisham, 2·42 per 1000.

Enteric fever was less prevalent than usual in 1909. The distribution of the disease in London was exceptional, the usual autumnal rise being absent. The rate of attack by enteric fever was the lowest on record, and so likewise was the rate of mortality. In many who were medically certified to be suffering from enteric fever the diagnosis was not subsequently confirmed. Among the several sanitary areas the attack rate of enteric fever was highest (0·45 per 1000) in Shoreditch; it was lowest (0·09 per 1000) in Woolwich, and 0·11 per 1000 in Lewisham. In proportion to the living the attacks were most numerous in both sexes at ages from 10 to 15, whilst the death-rate was highest at ages 25 to 35 among males, and at ages 15 to 20 and 25 to 35 among females.

*Pulmonary Tuberculosis.*

To the behaviour of pulmonary tuberculosis in London considerable prominence is given in the present report. A new as well as an instructive diagram is presented showing the corrected rate of mortality from tuberculous phthisis in relation to the mean rate of the period 1851–1909. The diagram shows a marked decline of phthisis mortality in both sexes, and a greater incidence of that mortality in the male sex. It further indicates that until the last seven years the decline has been more manifest in females than in males. Sir Shirley Murphy is, however, careful to point out that this alteration in the relative decline in the death-rate of the sexes in recent years may be apparent only, inasmuch as it would be explicable in the event of the relative proportion of the sexes having changed since the last Census. The tendency to decrease in the mortality from phthisis has been general; among the metropolitan boroughs there are only three in which that mortality has not fallen since the five-year period 1904–08.

In an interesting table the mortality from phthisis in groups of districts is shown in relation to overcrowding as a measure of social condition. From this table it appears that if the phthisis mortality of the whole of London be represented by 1000, the mortality of the districts where overcrowding does not exceed 7·5 per cent. is represented by 709, whilst that of the districts where the overcrowding amounts to 27·5 per cent. the comparative mortality figure is 1394. Equally conspicuous is the close relationship between social condition and phthisis mortality, as indicated by similar tables in the reports of recent previous years. In the group of most overcrowded districts the phthisis mortality is, usually and approximately, twice that in the least overcrowded districts.

With the object of more fully illustrating the effect on phthisis mortality of social condition, as measured by the proportion of children scheduled for education purposes, a second diagram has been constructed in which the death-rates of both sexes at several age-groups are compared, after exclusion of the deaths in public institutions of persons whose last known residence was a common lodging-house. For the use of those who prefer the ordinary form of statistics a table has been prepared, from which it appears that the male phthisis death-rate is greatest at the age of 45, but that the female rate, whilst greatest at that age in the three most favoured district groups, is greatest at the age of 35 in the two least favoured groups; and this fact holds good whether the deaths among inmates of lodging-houses are, or are not, excluded. From this we see that, as between age 35 and age 45, the female rates of phthisis mortality show a tendency to greater incidence at the earlier ages as social conditions become less favourable. This tendency is not shown by the male rates. And here it deserves notice that the more general employment of servants in the better-class districts is a factor probably contributing to this result. In so far as young women suffering from phthisis would die, not at the houses in which they were employed, but in their own homes, this circumstance would tend to diminish the incidence of phthisis mortality in the more favoured, and to increase it in the less favoured districts.

*Phthisis Deaths in Workhouses and in Other Institutions.*

From figures quoted on the Registrar-General's authority we learn that almost half the deaths of males, and

[1] Previous notices of this report have appeared in THE LANCET of Jan. 14th (p. 110) and Feb. 4th (p. 322) and 11th (p. 393).

nearly one-third of the deaths of females, occurred in workhouses. The intimate association of phthisis with poverty is strikingly shown by these figures; and from the same source it may be gathered that many more men than women die in workhouses, probably because destitution especially supervenes when the husband fails in health. If the districts are grouped on the basis of social condition of the inhabitants, practically identical proportions will be observed. Thus it appears, from a further table, that whilst in the most favoured districts 39·8 per cent. of the males die from phthisis in workhouses, in the least favoured districts the percentage is 52·5. On the other hand, the female deaths in workhouses in the best and the worst districts differ by less than 3 per cent.

*Administrative Control of Pulmonary Tuberculosis.*

As regards the administrative action taken in London for the suppression of pulmonary tuberculosis, very full particulars are given in this report. The county medical officer of health, with the help of his staff, has made careful inquiry concerning the preventive measures taken in each metropolitan sanitary area respecting cases of this disease coming to the knowledge of the sanitary authorities. At the present time voluntary notification of pulmonary tuberculosis obtains in most of the sanitary districts, and this system has been recently supplemented by an Order of the Local Government Board requiring the notification to the medical officer of health of all cases of this disease occurring in Poor-law practice, and empowering local authorities to adopt measures for the prevention thereof. This Order provides for pulmonary tuberculosis to be dealt with as an infectious disease, and this view, together with the steps necessary for the suppression of the disease, is set forth in a Memorandum by the Board's medical officer. The Order in question enables a sanitary authority to exercise wide powers in aid of the most necessitous class of the community. It would appear to authorise the provision of hospital and sanatorium accommodation for cases of phthisis, and in suitable cases to ensure that a separate sleeping room should be provided for the patient. The result of the Tuberculosis Order has already been that the number of cases notified has been more than doubled, but even this number must, of course, fall short of the total actually occurring. "It may therefore be considered," says Sir Shirley Murphy, in a weighty sentence, "whether obligatory notification of patients in all classes of the population would produce very different results." In a few provincial towns voluntary notification has been followed by compulsory notification, and the local medical officers of health have communicated to Sir Shirley Murphy the results of their work. As a result of comparing the experiences of the officers referred to, it appears (*a*) that voluntary notification may fail to bring to the knowledge of the medical officer of health as many cases of pulmonary tuberculosis as there are deaths from this disease; (*b*) that when voluntary notification is supplemented by obligatory notification of cases occurring in Poor-law practice, the number of notifications is materially increased, but that it does not bring to knowledge more than a proportion of the clinically recognisable cases; and (*c*) that compulsory notification of phthisis, whether in Poor-law or other practice, brings to the knowledge of the medical officer of health a number of cases in excess of the number of deaths, but this number is still obviously less than the number of clinically recognisable cases. Appended to this report is a statement relating to each sanitary district, showing the steps that are taken locally, in the interest of the patient and of those with whom he is associated, on the medical officer receiving notice of the occurrence of a case of phthisis. In some few cases the house is visited by the medical officer of health personally, but usually by a sanitary inspector or health visitor, and advice is given on important points. In some districts, moreover, the services of a local health society are available. Adequate provision is apparently made in some cases for the supervision of the patient at home. In others the steps taken can hardly be described as satisfactory. Especially it should be noted that the steps taken do not include the medical examination of other members of the family. This is an important omission, for we know that the early detection of incipient cases and the provision of appropriate treatment for the patient are the most promising of the prophylactic measures that can be adopted.

In reviewing the facts at his disposal the county medical officer deliberately states the conviction that "at present it cannot be said that in London, as a whole, any material effort has been made to deal with this disease. Especially is effort wanting to detect early cases of phthisis, and to provide for their subsequent treatment. It needs to be noted that in Paddington, as the result of philanthropic effort, a dispensary has been instituted which is rendering useful service in these directions, and that in one or two other districts the provision of such an institution is being undertaken; but in the districts generally, little has been done to exercise the powers conferred by the Order of the Local Government Board."

*Milk-supply and Tuberculosis.*

In addition to the Dairies and Milkshops Order of 1899, which provides that the milk of cows certified by a veterinary surgeon to be suffering from tuberculosis of the udder shall not be sold or used for human food, the London County Council obtained powers in 1904 to remove from a dairy any cow suspected to be suffering from tuberculosis of the udder. Since that date the cows in the London cowsheds have been periodically examined by the Council's veterinary inspectors, and in this way 28 cows suffering from tuberculous diseases of the udder have been removed and slaughtered.

Under the General Powers Act of 1907 the Council officers are empowered to take for analysis samples of milk at the London railway termini consigned to dealers in London. In the year under notice 2325 samples of milk were taken by the Council's inspectors and conveyed to the Lister Institute for bacteriological examination. The result is that out of 1966 completed examinations of samples taken from churns consigned to London dealers 205, or 10·4 per cent., proved to be tuberculous. In the previous annual report it was stated that out of 528 examples examined in 1908, 11·6 per cent. were found to be tuberculous.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### THE HUNTERIAN FESTIVAL.

THE delivery of the biennial Hunterian Oration at the Royal College of Surgeons of England on Tuesday last, Feb. 14th, was followed in the evening by a banquet given by the President and Council of the College to a distinguished group of visitors, the principal guest being the Lord Mayor of London, Sir Thomas Vesey Strong, while among others present may be mentioned the Bishop of Bristol, Sir Herbert Maxwell, Mr. Walter Long, M.P., Lord Ilkeston, Lord Sandhurst, Lord Goschen, Sir Ernest Waterlow, Sir James Linton, Sir James Porter (Medical Director-General of the Navy), Surgeon-General Gubbins (Director-General of the Army Medical Service), Mr. Rider Haggard, Sir. E. Ray Lankester, Sir Alfred Cripps, and Sir Squire Bancroft.

After dinner and the Royal toasts, "The Memory of John Hunter" was drunk in silence, and immediately thereon the President, Mr. H. T. BUTLIN, proposed the health of the visitors, coupling the toast with the name of the Lord Mayor of London, and taking the opportunity to point out publicly that the Hunterian Museum in the custody of the College was in reality a State Museum. After alluding to the many distinguished guests who were present, the President said that it was some years since the College had entertained the Lord Mayor and Sheriffs, but they liked to do so from time to time in recognition of the hospitalities which were accorded by the City of London to the representative of the College, and also to remind the College of its origin in a City Corporation. When the surgeons separated from the barbers it was to form the Corporation of Surgeons, with its Master and Court of Assistants, and their dwelling-place was in the Old Bailey. He thought their City guests, particularly the masters of the City corporations who honoured the College with their presence, would like to know whether the College maintained the traditions of the corporations: in fact, how the College disposed of its revenues. The College rarely appeared in lists of donations or subscriptions. It had been suggested to him that the Council of the College spent money on themselves, and that he, the President, received an income of £5000

a year! He only wished it was so. But he was sorry to say that no salary was attached to the offices of President, Vice-President, or member of the Council. There were no pensions or sinecure offices, no almshouses for decayed Members of the Council, no schools for the education of their children. Even the hospitalities of the College were very limited: a dinner once a year at the most, sometimes only one dinner in two years. But the Council were going to show their guests to-night the way in which they spent their income. The museum had been specially lighted for the purpose. It had been in their possession for about 110 years, and it had been computed by those who compiled the guide-book for the British Medical Association last summer that it had cost the College more than £500,000. He could not say certainly if this were so because, although the accounts of the museum were separately kept, no charge had been made on it towards the secretarial department and general upkeep of the College. But he knew that the College had spent out of its own money more than £100,000 for buildings alone, and he thought the estimate was probably not exaggerated. It might be said that, after all, the museum was the property of the College, and it was not a matter of interest to the outside world whether it cost much or little. That was not the case. The museum did not belong to the College. It was a national museum, and he doubted whether there was any similar instance of a national museum being kept and paid for by a private body like the College of Surgeons. The history of the museum was that it had been collected in the course of 30 or more years by Mr. Hunter, who declared that he had spent £70,000 upon the 13,000 specimens of which it consisted. At his death, in 1793, it was the only property he left to his widow and her two children. It was offered to the nation, but Mr. Pitt was advised not to purchase it, as it was not of national interest. Six years later, just as it was on the point of being dispersed and sold bit by bit, Lord Auckland and some other distinguished persons persuaded the Government to buy it for £16,000. When they had done so Mr. Pitt did not know what to do with it, and offered it on trust to the Corporation of Surgeons. On their acceptance of the trust a sum of £15,000 was provided by the Government to house it. In the last 110 years the Government has furnished altogether just over £57,000 for assistance in building fresh accommodation. But the College has provided nearly twice as much for that object and has maintained and enlarged the museum entirely at its own expense. Yet it still remains a national museum, guarded by 31 Hunterian trustees, many of whom are trustees by virtue of their office, as the Lord Chancellor, the Prime Minister, the Speaker of the House of Commons, the Ministers of the Navy and the Army, and others. The trustees meet regularly every three months and visit the Museum when they will. The Council of the College is only represented among the trustees by the President. So strict are the regulations that we are not permitted to destroy or remove a single Hunterian specimen without the approval of the trustees. In spite of this, there is nothing connected with the College in which the Council takes greater pride, or on which it more willingly spends time and money than the Museum. It now consists of a vast number of specimens, and is undoubtedly by far the most splendid museum of its kind in the world. Only last year one collection of more than 5000 specimens was added to it by the Royal Society of Medicine (the Odontological Section). The President hoped their guests would be pleased to enjoy their cigars in the Museum, as His Majesty the late King had done on more than one occasion, adding that the Museum is largely used, for there are over 1000 attendances every month.

The LORD MAYOR, in his reply, confessed his pride, as the representative of the City of London, in the development of the old City Guild into a powerful and scientific corporation.

Lord ILKESTON proposed the health of the Hunterian orator, and Mr. EDMUND OWEN replied in a happy manner.

The company then finished a thoroughly interesting and entertaining evening in the Hunterian Museum, which was brilliantly lighted up for the occasion.

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### MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Feb. 9th, Mr. BUTLIN, the President, being in the chair.

The PRESIDENT reported the death on Jan. 18th last at the age of 80 of Mr. Henry Power, past Vice-President and past member of the Council. It was resolved that—

> The Council do hereby record their deep regret at the death of Mr. Henry Power, who for 11 years was a member of the Council and devoted to the service of the College. He was highly esteemed, not only for his professional attainments, but for his personal qualities, which won for him the respect and affection of all who knew him.
>
> The Council also desires to express their very sincere sympathy with Mrs. Power and the members of his family in the loss which they have sustained.

It was resolved to issue Diplomas of Membership to 74 candidates found qualified.

It was resolved, on the recommendation of the Court of Examiners, that Clause 2, Subsection 2, and Clause 5, Subsection 3 of Section 3 of the regulations for the Diploma of Fellow should be altered so as to read—

> Dissections during the regular vacations will be accepted provided the certificate shows that they have been performed under the superintendence of an authorised teacher in a medical school.

It was resolved that jointly with the Royal College of Physicians Diplomas in Public Health should be granted to 21 successful candidates.

On the recommendation of the Committee of Management it was resolved:—

> That a Diploma in Diseases and Hygiene of the Tropics be granted by the Royal Colleges after an examination conducted under the superintendence of the Conjoint Board, and that one Examiner in Bacteriology and one Examiner in the Diseases and Hygiene of the Tropics including Surgery be appointed by each of the Royal Colleges.

A syllabus of the subjects of the examination has been drawn up and was approved.

Mr. C. H. Golding-Bird was reappointed as the Representative of the College on the Central Midwives Board.

The PRESIDENT reported the delivery of Hunterian Lectures by Dr. F. W. Edridge-Green on Colour Vision and Colour Blindness, and by Dr. W. d'Este Emery on the Immunity Reaction in Diagnosis, especially in Tuberculosis and Syphilis.

The PRESIDENT reported that in pursuance of the provisions of the Bradshaw Bequest he had chosen Mr. R. Clement Lucas as Bradshaw Lecturer for the ensuing collegiate year.

A letter was read from the Secretary of the Royal Society of Medicine stating that at the last meeting of the Council of this society it was unanimously resolved to present to the Royal College of Surgeons the Osteological Collection formerly belonging to the Obstetrical Society and at present stored in the basement of the College.—The best thanks of the Council were given to the Royal Society of Medicine.

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## THE HEALTH OF THE NAVY IN 1909.

THE Statistical Report on the Health of the Royal Navy for 1909, issued late last year, and noticed briefly in THE LANCET on Feb. 4th, merits detailed notice. The report continues to show a general improvement in the health of the premier service. It deals with a total force of 112,700, a large majority of whom—viz., 76,330—were serving at home. In March, 1909, the command previously known as the Channel Fleet was absorbed into the Home Fleet. This amalgamation brings back the number of separate commands to ten, as was the case previous to 1908, when the Home Station was split up into Home Station and Home Fleet.

*Statistics.*

In all statistical respects the health returns are satisfactory, the ratios of cases of sickness and injury admitted, for invaliding, for mortality, and for average loss of service, being all lower than the average of the previous five years. The total number of cases of disease and injury that occurred was 72,540; this gives a ratio of 643·65 per 1000, showing a decrease of 75·34 on the quinquennial average. The average sick-rate was 26·75 per 1000, being 2·84 per 1000 less than during the preceding quinquennium. The average loss of service was 9·76 days for each person, or 1·04 less than the five-year average. The highest ratio of men sick daily occurred, as usual, in the Irregular List, among the crews of vessels on passage to or from foreign stations, or employed on the west coast of North America, amounting to 45·76 per 1000; next to this comes the Home Station, with 35·42 per 1000; China and the East Indies were also slightly above the mean, but all the other commands were below the mean, the healthiest being Cape of

Good Hope, with 20·14. It is to be noted that the men of the Home Fleet had only 23·19 per 1000 sick every day on an average, being much healthier than those of the Home Station, which consists of depôt and training ships, the home hospitals, and the Royal Naval College at Greenwich. The deaths in the whole navy numbered 362, or 3·21 per 1000, and the invalidings 1764, or 15·65 per 1000; the ratios for the preceding quinquennium were 3·75 and 16·51 respectively.

Taking the statistics of the navy as a whole, and examining into the relative importance of the different causes of inefficiency through sickness we may compare the admissions and the number daily sick under each heading, as stated in ratios per 1000 of strength. For all causes the admission ratio was 643·65 and the number sick every day 26·75; of these, venereal affections accounted for 119 admissions and 7·9 constantly sick; the group of digestive diseases caused 103 admissions per 1000 and 2·9 constantly sick; diseases of the skin and connective tissue come next with 73 and 2 per 1000; and then respiratory diseases with 69 and 1·6 per 1000 ratios. Influenza is always prevalent in the navy and, though less so this year than has been the case recently, accounted for 20 per 1000 admissions to hospital. Local injuries are also an important cause of admission, amounting to 131 per 1000, the average number constantly sick being 4·36 per 1000, a higher ratio than for any other single disability. But in all these instances (except the first named) the number of individual cases and the total amount of sickness, as shown by the average ratio per 1000 daily sick, were less than in the preceding quinquennium. With regard to venereal diseases taken as a whole, there was no improvement; the admissions per 1000 were 119·5, compared with 120 in the five years preceding, and the average sick-rate was 7·9, compared with 8·2; there does not seem to have been any diminution in the severity of the affections, nor acceleration of recovery by the improved methods of treatment adopted. The total disability from this cause amounted to an average of 892 men in hospital every day throughout the year. The most fatal of the causes of disease was, as in the previous year, pneumonia (37 deaths, 0·32 per 1000); enteric fever caused 28 deaths (0·24 per 1000), and tuberculosis 22 deaths (0·19 per 1000). The chief causes of invaliding were tuberculosis (209 cases, 1·85 per 1000), nervous diseases (also 209 cases, 1·85 per 1000), heart disease (149 cases, 1·32 per 1000), and diseases of the digestive system (274 cases, 2·43 per 1000), defective teeth and hernia (operation refused) being the principal items in this last category; only 23 cases of hernia, however, were invalided, while 519 were operated on for radical cure with excellent results in all but three or four instances.

A comparison of the statistics of the different commands shows that the East Indies Station suffered most, having a case-rate of 959, a death-rate of 9·04, and 25·53 per 1000 invalided; 5 out of the total of 17 deaths were due to beriberi. Malaria admissions were at the rate of 145 per 1000, while pyrexia caused 97 per 1000; the other chief causes of sickness were affections of the digestive system and of the connective tissue and skin. The healthiest commands were the Home Fleet (560 per 1000 admissions and 2·73 deaths), and that of the Cape with 570 admissions per 1000 and no death.

### *Prevalence of Chief Diseases.*

The most important diseases may now be shortly considered in regard to their prevalence and distribution. The admissions for *influenza* numbered 2280, of which 4 were fatal; cases occurred in all the commands; as it led to no necessity for invaliding men out of the service it was nowhere of a severe type; three of the deaths were due to pneumonia, and one to heart failure, all occurring at home. 35 cases of *diphtheria* occurred, 22 being on the Home Station, and 10 of these on the *Impregnable* training-ship for boys. In the Home Fleet cases of acute infectious disease, such as measles, scarlet fever, mumps, &c., were frequently introduced into crowded ships; but there was rarely any spread of the disease, which speaks well for the promptitude of recognition and adequacy of preventive measures.

*Enteric fever* caused 150 admissions and 28 deaths; 31 of the cases were admitted on the Home Station, most being thought to have contracted infection while on leave, or staying at their homes. In only one case is a cause suggested, the eating of cockles. 46 cases occurred in the Home Fleet, in regard to 3 of which it was "almost conclusively proved that shellfish were the cause"; and 4 cases in other ships were ascribed to the same source of infection; at Queenstown two officers partook of oysters and developed enteric, one case being fatal. One case on the *Prince of Wales* in the Atlantic Fleet is said to have been due to eating cockles at Portsmouth. On the Mediterranean station 30 cases occurred; in the outbreak on the *Swiftsure* there were 12 cases, to which number should be added 9 further cases occurring in 1910; the movements of the men are carefully detailed in the report, and the conclusion is reached that probably infection was due to contaminated food at Suda Bay and Phalerum or the Piræus, though contact infection could hardly be excluded. Shore infection at Bermuda is thought to have been the cause of 5 cases on the North American station; it is also suggested that the germs might have been carried by flies, which existed in swarms at the time. On the irregular list 7 cases are recorded, 2 of which appear to have been infected at Hong-Kong; 2 others occurred shortly after leaving England for Australia, one of whom had eaten oysters at Portsmouth a fortnight previously. *Pyrexia* of uncertain origin caused numerous admissions in the Mediterranean, most being trivial cases; a series of 12 on the *Bacchante*, with an average duration of 18 days, of slight severity and favourable termination, are attributed to infection at the Piræus, and were probably cases of phlebotomus fever due to sandfly infection. On the China station a few cases occurred of the so-called "Yangtse river fever," which are returned under this heading. In the appendix is given a clinical description of the cases. The pyrexia is of an intermittent type, reaching 102° to 103°, lasting some 10 to 14 days, and accompanied by an urticarial rash; sometimes also there may be dyspnœa, dysphagia, or diarrhœa. It is thought that the urticaria "may affect any part of the body inside or out." The disease seems to be infective and to be in some way connected with freshly turned soil.

*Pneumonia* was an important cause of sickness, accounting for 4·18 admissions per 1000 of strength. This shows a slight decrease on the average for the preceding five years, but on the home station there was an actual increase, the ratio being 8·31 per 1000, compared with the previous average of 6·23. The cases numbered 218 and there were 17 deaths; 48 cases were admitted on the *Vivid* (general depôt ship). It is stated that the disease "could not be traced to any insanitary condition, and was most prevalent in the early summer." Pneumonia was also the most fatal disease, 37 deaths being due to this cause, giving a ratio of 0·32 per 1000.

*Malaria* was somewhat more prevalent in 1909, the case-rate being 5·42 per 1000, compared with a ratio of 5·09 for the quinquennium. On the East Indies Station the case ratio was 145·21 per 1000, a considerable increase on the quinquennial average of 118·47, though much less than the admission rate in 1908, which was 252·9. The majority (135) of the cases this year, as last, were admitted on the *Perseus*, lying in the dockyard, Bombay; in 1908 the men lived at the Sailors' Home in Bombay; this year nearly all the seamen ratings and marines went up to Deolali; the engineer and stoker ratings and a few seamen, signalmen, and marines lived in the Sailors' Home, Bombay. At Deolali it was quite healthy—very few mosquitoes and very little fever. At Bombay the men worked on board in the dockyard from 8 till 2 all through the rainy season. Every man had a mosquito net and was made to use it, and 10 grains of quinine were given to each thrice weekly. The mosquitoes swarmed on board, and bit as much in the day as at night. Citronella oil, smeared on exposed parts, kept off their attacks to some extent. The type of fever was not so severe as in 1908.

*Tuberculosis* caused 320 admissions, and was the most important cause for invaliding, 209 men having to leave the service on this account; both case and invaliding ratios, however, are lower than the quinquennial average, and the death-rate (0·19 per 1000) is only half that of the preceding five-year period (0·38). The case ratio for the whole navy was 2·83 per 1000; for ships' stewards it was 12·9; for sick-berth staff, 8 84; and for cooks, 8 61; for seaman ratings it was 2 46.

The *venereal* statistics, as already mentioned, show little improvement, but it is to be noted that "the system which

now obtains of invaliding cooks and domestics and similar ratings who are rendered entirely unfit for the performance of their duties by the presence of venereal disease, if they are unlikely to recover completely within a reasonable period, tends to increase the number of cases invalided." The case and invaliding ratios were 119·53 and 1·35 per 1000 respectively.

*Rheumatic fever* shows a serious increase, there having been an admission ratio of 7·22 per 1000, more than double that of the preceding five-year period, which was 3·46; it is also an increase over the admissions in 1908, which were 6·51 per 1000, and a great advance on the average for the five years 1903–07, which was only 2·68 per 1000. The increase has been notable in all commands except the Australian, and in the Home Station and in the Home Fleet. The report states that "as in 1908, the case ratio shows a decided increase (3·76), which is possibly in part dependent on the concentration of the fleet in the cold and stormy home waters, but to some extent is perhaps due to more careful classification" (p. 7). The admission ratio has been more than doubled; the term "decided" is not adequate to express an increase of 108 per cent. (or if the five years, 1903–07 be compared, of 169 per cent.); it is conceivably partly to be explained by the concentration suggested; but *all* the stations except the Australian show a similar increased prevalence. (Later on we find a reduction under diseases of the organs of locomotion from a quinquennial average of 22·13 to 13·58 per 1000; "joint inflammation" is probably, therefore, now more correctly returned as rheumatic fever.) Whatever was comprehended under this heading, the mortality ratio was low, only 3 cases having been fatal out of 814.

Only 115 cases of *alcoholism* occurred in the whole force of 112,700 men; Dr. Tobias Smollett would have wondered. There were four deaths, one due to gastro-enteritis, "the patient being entirely unaccustomed to alcohol."

Of *poisoning* there were 111 cases, more than half being due to ptomaines (57); most of these came from eating tinned provisions, such as tinned fish. There were 22 cases of "beri-beri," all occurring amongst native ratings (lascars) in the Persian Gulf Division of the East Indies Station. Staff-Surgeon A. J. Laurie gives a careful account of the outbreak in a special paper in the appendix to this report. He states that the rice was undoubtedly good and well cured, but that the copper cooking vessels were not properly tinned; indeed, they were not tinned at all for eight or ten months; he considers, therefore, that the "beri-beri" was due to copper poisoning, not to any faulty condition of the rice. Purulent gingivitis was present in 8 out of 11 cases specially observed, and the pus in some instances gave the reaction of copper. There is, however, no detailed clinical description of the symptoms, and a doubt arises as to the real nature of the disease.

Of the *local diseases*, those of the nervous system show a reduction in point of number, the cases having been 6·92 per 1000, compared with the quinquennial average of 8·38.[1] Circulatory diseases caused a larger number of deaths than any other group, except pneumonia, but were not more severe or numerous than usual. Respiratory diseases were numerous, but not fatal; and diseases of the digestive system furnished far more admissions to hospital than any other group (except venereal), showing, however, some decrease on the quinquennial average. Sore-throat and tonsillitis are included under this heading, though often independent of any condition connected with digestion. No outbreaks, however, are recorded attributable to any insanitary conditions. We are not able to gather from the figures presented what are the present dental conditions in the Royal Navy, how they compare with those in young adults in civil life, or whether they are improving, or the reverse. With the increased care that is now being taken of the teeth in school children there should soon result an improvement in the dental conditions of young adults in the public services. There is a large reduction in the admissions for diseases of the connective tissue and skin, which now stand at 73·36 per 1000, compared with 101·36 for the five years 1904–08. It is considered that the withdrawal of so many men from tropical service during late years has largely accounted for this; in the East Indies Command the ratio is still 153 and in China 119·9; while both in the Home Station and in the Home Fleet it is only 60. General *injuries* are slightly below the average (2·52 as compared with 2·63 per 1000). There were actually 285 cases with 80 deaths. The unfortunate sinking of Submarine "C 11," with a loss of 13, and the running down of the pinnace of the *Encounter* in Sydney Harbour, with a loss of 15, were the most important accidents that occurred during the year.

[1] A misprint in the figure for invaliding ratio on p. 95 has unfortunately led to an error in the text of the report on p. 8, where 2·17 should be read instead of 3·17.

*Appendix.*

In the appendix notes are furnished of five cases of *caisson illness* during the year 1909, which are interesting and of practical value to naval officers. A little more care might have been given by the editor. In the account of Case 2 it is said that the patient had a sub-normal temperature "until July 25th"; but as the date of the occurrence is not mentioned this gives no real information. Fleet-Surgeon W. W. Pryn contributes an admirably clear and interesting exposition of the various methods of *colour vision testing*, with especial reference to that employed at the Admiralty; he sums up that (1) an examiner should himself have normal colour vision; (2) as required for sea service it is best tested by means of a lamp; (3) of these the Edridge-Green is the best form; (4) the practice of requiring the coloured lights to be matched with wools is to be recommended; (5) the Holmgren test is useful as an auxiliary. Another useful paper is that of Fleet-Surgeon A. G. Wildey on the Vision of Men under Training at the Gunnery School. Of 676 examined, 15·82 per cent. were found to be defective, chiefly owing to astigmatism; but the ametropic errors were small. He believes, however, that inability to read Snellen's types at normal distances, unless it be due to organic disease, does not materially affect the accuracy of shooting in the gunlayers. He very reasonably points out that it is no detriment to men of the stoker class, who have to read gauge-glasses, engine-room thermometers, &c., to be unable to read the types at six metres; among the older men of these ratings the slightly myopic have indeed the advantage. In a report on the eyesight-testing of gunlayers and others at Whale Island, Fleet-Surgeon W. A. Whitelegge notes that astigmatism is relatively common. Out of 83 cases of visual defect 32 were due to this cause; the men, however, were able to correct the errors by very slight adjustment of the telescope, and made excellent shooting at the battery. He has no doubt that eye-strain in the service is increasing, owing to the powerful telescopes now in use, and the glare of the sea. Staff-Surgeon Oswald Rees, whose very interesting observations on body temperature and the cause of heat-stroke appeared in last year's report, returns to the subject in the present issue. Fleet-Surgeon F. H. A. Clayton and Staff-Surgeon C. H. J. Robinson also contribute notes of the cases of cramp due to high temperature in the China Seas. We heartily welcome these contributions to professional literature in the Naval Medical Report, which we are glad to see is much fuller (nearly 90 more pages) than last year. The fuller notes this year on the causation of disease in the various commands are also very welcome; but, like Oliver, we ask for more: more extended accounts of professional work, preventive and curative, under the great variety of conditions in which the Royal Navy serves in all parts of the world.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7890 births and 5255 deaths were registered during the week ending Feb. 4th. The annual rate of mortality in these towns, which had been equal to 15·5, 16·4, and 16·1 per 1000 in the three preceding weeks, declined to 16·0 in the week under notice. During the first five weeks of the current quarter the recorded death-rate in these towns averaged 15·7 per 1000. In London the mean death-rate during the same period was equal to 15·8 per 1000. The annual death-rates in the 77 towns during the week ranged from 5·1 in Hornsey, 8·7 in Wolverhampton, 9·0 in Aston Manor, and 9·1 in Handsworth (Staffs), to 21·6 in Oldham, 23·5 in Middlesbrough, 24·1 in Swansea, and 24·5 in Bury. The 5255 deaths from all causes in the 77 towns in the week under notice showed a decline of 56 from the number returned in the previous week, and included 477 which were referred to the principal epidemic diseases, against 448, 455, and 461 in the three preceding weeks; of these 477 deaths from epidemic

diseases, 230 resulted from measles, 116 from whooping-cough, 52 from diphtheria, 47 (of infants under two years of age) from diarrhœa, 21 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The fatal cases of measles, which had increased in the four preceding weeks from 160 to 208, further rose to 230, and caused the highest annual rates of 1·9 in Tottenham, in West Ham, in Coventry, and in Stockton-on-Tees, 3·5 in Grimsby and in Sheffield, and 5·4 in Rotherham. The deaths attributed to whooping-cough, which had been 87, 85, and 113 in the three preceding weeks, rose again to 116; the highest rates from this disease were 2·3 in Rotherham, 3·3 in Norwich, and 3·6 in Willesden. The 52 deaths from diphtheria showed an increase of 4 upon the number in the previous week, and included 12 in London, 7 in Leeds, 4 in Birmingham, 4 in Liverpool, and 3 in Salford. The deaths of infants under two years of age attributed to diarrhœa and enteritis, which had been 68 and 58 in the two preceding weeks, further declined to 47. The fatal cases of scarlet fever, which had declined from 31 to 17 in the three previous weeks, rose to 21; 6 deaths occurred in London, 3 in Birmingham, and 2 each in Leyton and in Liverpool. The 11 deaths referred to enteric fever showed a decline of 6 from the number in the previous week; 2 were recorded in West Ham and 2 in Wigan. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the 12 preceding weeks from 1882 to 1311, had further fallen to 1264 on Feb. 4th last; 130 new cases of this disease were admitted to these hospitals during the week under notice, against 135, 126, and 129 in the three preceding weeks. These hospitals also contained on Feb. 4th 861 cases of diphtheria, 328 of measles, 145 of whooping-cough, and 63 of enteric fever. The 1518 deaths from all causes in London in the week ending Feb. 4th (showing a decline of 20 from the number in the previous week) included 366 which were referred to diseases of the respiratory system, against numbers increasing in the five preceding weeks from 263 to 374. In the 77 towns 178 deaths resulted from different forms of violence, against 169 and 159 in the two previous weeks; and 412 inquest cases were registered. The causes of 34, or 0·6 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and in each of its eight suburban districts, in Leeds, Bristol, Bradford, Newcastle-on-Tyne, Hull, Nottingham, and in 44 smaller towns; the 41 uncertified causes of death in the 77 towns in the week under notice included 7 in Birmingham, 4 in Sheffield, and 3 each in Liverpool and in Warrington.

In 77 of the largest English towns 8394 births and 5783 deaths were registered during the week ending Feb. 11th. The annual rate of mortality in these towns, which had been equal to 16·4, 16·1, and 16·0 per 1000 in the three preceding weeks, rose to 17·6 in the week under notice. During the first six weeks of the current quarter the recorded death-rate in these towns averaged 16·0 per 1000, and corresponded to the recorded rate during the same period in London. The annual death-rates in the 77 towns during last week ranged from 7·7 in Hornsey, 8·9 in Kings Norton, 9·9 in Walthamstow, and 10·5 in Handsworth (Staffs.), to 24·3 in Stoke-on-Trent, 25·2 in Coventry, 25·4 in Dewsbury, and 29·0 in Stockton-on-Tees. The 5783 deaths from all causes in the 77 towns showed an increase of 528 upon the number returned in the previous week, and included 525 which were referred to the principal epidemic diseases, against 455, 461, and 477 in the three preceding weeks; of these 525 deaths, 249 resulted from measles, 123 from whooping-cough, 58 from diphtheria, 55 (of infants under two years of age) from diarrhœa, 21 from scarlet fever, and 19 from enteric fever, but not one from small-pox. The fatal cases of measles, which had steadily increased during the first five weeks of the current year from 160 to 230, further rose last week to 249, and caused the highest annual rates of 2·2 in Newcastle-on-Tyne, 2·3 in Gateshead, 2·5 in Coventry, 2·9 in Rhondda, 4·8 in St. Helens, and 5·7 in Sheffield. The deaths from whooping-cough, which had been 85, 113, and 116 in the three previous weeks, further rose to 123 in the week under notice; the highest rates from this disease were 1·6 in Bradford, 2·4 in Middlesbrough, 2·9 in Stockton-on-Tees, 3·3 in Norwich, and 3·5 in Warrington. The 58 fatal cases of diphtheria showed an increase of 6 upon the number returned in the previous week and included 23 in London and its suburban dirtricts, 5 in Leeds, 4 in Stoke-on-Trent, and 3 in Liverpool. The deaths of infants under two years of age attributed to diarrhœa which had been 68, 58, and 47 in the three previous weeks, rose again last week to 55. The 21 fatal cases of scarlet fever were equal to the number returned in the previous week; 3 deaths occurred in Portsmouth, 3 in Huddersfield, and 3 in Leeds. The 19 deaths from enteric fever showed a slight increase upon the recent weekly numbers, and included 2 each in London, Croydon, Wigan, Manchester, and Sheffield. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the 13 preceding weeks from 1882 to 1264, had further fallen to 1257 on Saturday last; 147 new cases of this disease were admitted to these hospitals during last week, against 126, 129, and 130 in the three preceding weeks. These hospitals also contained on Saturday last 847 cases of diptheria, 371 of measles, 171 of whooping-cough, and 54 of enteric fever. The 1630 deaths from all causes in London last week (showing an increase of 113 upon the number in the previous week) included 404 which were referred to diseases of the respiratory system, against 366, 374, and 365 in the three preceding weeks. In the 77 towns 187 deaths resulted from different forms of violence, against 159 and 178 in the two preceding weeks, and 407 inquest cases were registered. The causes of 50, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Leicester, and in 48 smaller towns; the 50 uncertified causes of death in the 77 towns last week included 9 in Birmingham, 8 in Liverpool, 4 in Sheffield, and 3 each in St. Helens and in Hull.

## HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 768 births and 670 deaths were registered during the week ending Feb. 4th. The annual rate of mortality in these towns, which had been equal to 14·8 and 15·7 per 1000 in the two preceding weeks, rose to 18·2 in the week under notice. During the first five weeks of the current quarter the death-rate in these towns averaged 15·9 per 1000, and was 0·2 above the mean rate during the same period in the 77 English towns. The annual death-rates during the week in the eight Scotch towns ranged from 12·1 and 12·7 in Aberdeen and Greenock to 19·8 in Glasgow and 24·4 in Dundee. The 670 deaths from all causes in the eight towns in the week under notice showed an increase of 94 on the number returned in the previous week, and included 63 which were referred to the principal epidemic diseases, against 51, 43, and 46 in the three preceding weeks; these 63 deaths were equal to an annual rate of 1·7 per 1000, the highest epidemic rates being 2·1 in Greenock and 2·4 in Dundee. Of these 63 deaths from the principal epidemic diseases, 22 resulted from whooping-cough, 18 from diarrhœa, 9 from diphtheria, 8 from scarlet fever, 4 from measles, and 2 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 20 and 14 in the two previous weeks, rose to 22, of which 16 occurred in Glasgow, and 2 in Edinburgh. The 18 deaths attributed to diarrhœa (of which 14 were of infants under two years of age) exceeded by 4 the number in the previous week; 8 deaths were registered in Glasgow, 3 each in Dundee and in Aberdeen, and 2 each in Edinburgh and in Greenock. The 9 deaths from diphtheria showed but slight variation from the recent weekly numbers, and included 4 in Glasgow and 2 in Edinburgh. The 8 fatal cases of scarlet fever exceeded the number in the previous week by 2; 5 deaths were recorded in Glasgow, 2 in Dundee, and 1 in Edinburgh. The 4 deaths from measles occurred in Edinburgh. Of the 2 deaths from enteric fever, 1 was registered in Glasgow and 1 in Dundee. The deaths in the eight towns referred to diseases of the respiratory system, which had been 130, 121, and 117 in the three preceding weeks, rose to 138 in the week under notice, but were 12 below the number returned in the corresponding week of last year. The deaths resulting from different forms of violence in the eight towns, which had been 15 and 20 in the two previous weeks, increased again to 27; and 197,

or 29 per cent., of the deaths occurred in public institutions. The causes of 22, or 3·3 per cent., of the deaths in the eight towns were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death did not exceed 0·6 per cent.

In eight of the principal Scotch towns 866 births and 728 deaths were registered during the week ending Feb. 11th. The annual rate of mortality in these towns, which had been 15·7 and 18 2 per 1000 in the two preceding weeks, further rose to 19·8 in the week under notice. During the first six weeks of the current quarter the death-rate in these towns averaged 16·6 per 1000, and was 0·6 above the mean rate during the same period in the 77 English towns. The annual death-rates during last week in the eight Scotch towns ranged from 15·3 and 16·8 in Paisley and Aberdeen to 22·3 in Dundee and 23·9 in Greenock. The 728 deaths from all causes in the eight towns last week showed an increase of 58 upon the number returned in the previous week, and included 69 which were referred to the principal epidemic diseases, against 43, 46, and 63 in the preceding three weeks; these 69 deaths were equal to an annual rate of 1·9 per 1000, the highest epidemic rates being 2·8 in Perth and 4·2 in Leith. Of these 69 deaths from the principal epidemic diseases, 33 resulted from whooping-cough, 13 from diarrhœa, 11 from diphtheria, 6 from scarlet fever, 5 from measles, and 1 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 14 and 22 in the two previous weeks, further rose to 33 last week, of which 24 occurred in Glasgow, 5 in Leith, and 3 in Edinburgh. The 11 deaths attributed to diphtheria showed a slight increase upon recent weekly numbers, and included 4 in Glasgow, 3 in Edinburgh, and 2 in Leith. The deaths from diarrhœa, which had been 14 and 18 in the two preceding weeks, declined to 13 last week, of which 9 were of children under two years of age. The 6 fatal cases of scarlet fever showed a decrease of 2 from the number in the previous week; 3 deaths were registered in Glasgow, 2 in Greenock, and 1 in Paisley. Of the 5 deaths from measles, 4 occurred in Edinburgh and 1 in Glasgow; the fatal case of enteric fever was recorded in Glasgow. The deaths in the eight towns referred to diseases of the respiratory system, which had been 121, 117, and 138 in the three previous weeks, rose to 161 last week, and were 51 above the number returned in the corresponding week of last year. The deaths resulting from different forms of violence, which had been 20 and 27 in the two preceding weeks, rose again to 28 last week; and 221, or 30 per cent., of the deaths occurred in public institutions. The causes of 19, or 2·6 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 largest English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 614 births and 437 deaths were registered during the week ending Feb. 4th. The annual rate of mortality in these towns, which had been equal to 19·3 and 21·3 per 1000 in the two preceding weeks, declined to 19·6 in the week under notice. During the first five weeks of the current quarter the death-rate in these towns averaged 19·9 per 1000, whereas in the 77 largest English towns during the same period the death-rate did not exceed 15·7, and in the eight principal Scotch towns the rate was 15·9 per 1000. The annual death-rate in the week under notice was equal to 24·1 in Dublin, 16·8 in Belfast, 20·5 in Cork, 14·3 in Londonderry, 20·5 in Limerick, and 19·5 in Waterford; in the 16 smallest of the Irish town districts the annual death-rate averaged 16·7 per 1000. The 437 deaths from all causes in the 22 towns showed a decrease of 39 upon the number returned in the previous week, and included 30 which were referred to the principal epidemic diseases, against 25 in each of the two preceding weeks; these 30 deaths were equal to an annual rate of 1·3 per 1000, which was 0·4 below the corresponding rate during the same period in the principal Scotch towns. Of these 30 deaths from the principal epidemic diseases, 9 resulted from whooping-cough, 9 from diphtheria, 5 from enteric fever, 5 from diarrhœa, and 2 from measles, but not one from small-pox or from scarlet fever. The fatal cases of whooping-cough, which had been 9, 11, and 18 in the three preceding weeks, declined to 9 in the week under notice, of which 4 occurred in Dublin and 3 in Londonderry. The deaths attributed to diphtheria, which had been 2, 7, and 3 in the three previous weeks, rose to 9, and included 5 in Dublin and 3 in Dundalk. Of the 5 fatal cases of enteric fever 3 belonged to Dublin and 2 to Limerick. The 5 deaths recorded from diarrhœa and the 2 deaths from measles were registered in Dublin. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 105 and 113 in the two preceding weeks, declined in the week under notice to 107. The 437 deaths from all causes included 148, or 34 per cent., which occurred in public institutions. The causes of 13, or 3 per cent., of the deaths in the 22 towns were not certified either by a registered medical practitioner or by a coroner; the proportion of uncertified causes last week did not exceed 0·6 per cent. in the 77 English towns, and was equal to 3·3 per cent. in the principal Scotch towns.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 623 births and 538 deaths were registered during the week ending Feb. 11th. The annual rate of mortality in these towns, which had been equal to 21·3 and 19·6 per 1000 in the two preceding weeks, rose to 24·1 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these towns averaged 20·6 per 1000, whereas in the 77 largest English towns during the same period the death-rate did not exceed 16·0, and in the eight principal Scotch towns the rate was 16·6 per 1000. The annual death-rate last week was equal to 27·4 in Dublin, 19·1 in Belfast, 27·4 in Cork, 20·2 in Londonderry, 24·6 in Limerick, and 33·1 in Waterford; in the 16 smallest of the Irish town districts the annual death-rate last week averaged 26·6 per 1000. The 538 deaths from all causes in the 22 towns last week showed an increased of 101 upon the number returned in the previous week, and included 26 which were referred to the principal epidemic diseases, against 29 and 30 in the two preceding weeks; these 26 deaths were equal to an annual rate of 1·2 per 1000, or 0·7 less than the corresponding rate from the same diseases in the principal Scotch towns. Of these 26 deaths from the principal epidemic diseases 8 resulted from whooping-cough, 7 from scarlet fever, 5 from diarrhœa, 2 from enteric fever, 2 from measles, and 2 from diphtheria, but not one from small-pox. The fatal cases of whooping-cough, which had been 11, 18, and 9 in the three preceding weeks, further declined to 8 last week, of which 4 occurred in Londonderry and 3 in Dublin. The deaths attributed to scarlet fever, which had been 1, 1, and 0 in the three previous weeks, rose to 7 last week, 4 of which were registered in Dublin. The 5 deaths from diarrhœa were equal to the number recorded in the previous week; in addition to these deaths, 9 others of infants under two years of age were recorded from enteritis. Of the 2 deaths from diphtheria, which were 7 less than the number returned in the previous week, 1 was recorded in Dublin and 1 in Armagh. The fatal cases of enteric fever and of measles were registered in Dublin. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 113 and 107 in the two preceding weeks, rose to 141 in the week under notice. The 538 deaths from all causes last week included 174, or 32 per cent., which occurred in public institutions. The causes of 13 or 2·4 per cent. of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner; the proportion of uncertified causes last week did not exceed 0·9 per cent. in the 77 English towns, and was equal to 2·6 per cent. in the principal Scotch towns.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon E. R. D. Fasken to the *Terrible* and for group of ships of Fourth Division, Home Fleet. Staff-Surgeon: K. H. Jones to the *Magnificent*, and to the *Irresistible* on commissioning. Surgeons: P. M. Rivaz to the *Pomone*, lent temporarily for Dartmouth Cadets' Sick Quarters; T. D. Liddle to the *Edgar* for voyage out, and to the *Torch* on

commissioning; and D. A. Mitchell to the *Terrible* and for group of ships of Fourth Division, Home Fleet.

### ARMY MEDICAL SERVICE.

Colonel Douglas Wardrop, C.V.O., is placed on retired pay (dated Feb. 11th, 1911).

Lieutenant-Colonel Robert I. D. Hackett, from the Royal Army Medical Corps, to be Colonel, vice D. Wardrop, C.V.O. (dated Feb. 11th, 1911).

### ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors (dated Jan. 28th, 1911):—James G. Gill, Thomas C. Lauder, Duncan E. Curme, Herbert S. Taylor, Francis J. Brakenridge, Nathaniel J. C. Rutherford, Gilbert J. A. Ormsby, Horace K. Palmer, Francis J. Palmer, Vincent J. Crawford, Arthur L. A. Webb, Howard Ensor, D.S.O.

Lieutenant-Colonel Samuel Townsend retires on retired pay (dated Feb. 8th, 1911).

The undermentioned Lieutenants are confirmed in their rank:—Wilfred W. Treves, Charles H. H. Harold, Eric L. Fyffe, Robert F. Bridges, Thomas J. Hallinan, John D. Bowie, Charles H. Stringer, Guy O. Chambers, John K. Gaunt, Leslie F. K. Way.

Lieutenant-Colonel A. E. Morris, on return from Kamptee (India), has been posted to the Cork District and appointed in charge of the Military Hospital at Cork in succession to Lieutenant-Colonel T. E. Noding, transferred to Hilsea. Lieutenant-Colonel G. Cree, from Madras, has taken up duty in the London District. Lieutenant-Colonel J. H. Daly has been transferred from Tipperary to Limerick. Lieutenant-Colonel C. Birt, from Dublin, has joined at the Curragh. Lieutenant-Colonel C. W. Johnson, from Gibraltar, has been appointed for duty in the Southern Command. Major D. Harvey, Specialist in the Prevention of Disease Eighth (Lucknow) Division, has been granted six months' leave of absence home from India. Major F. Smith, D.S.O., Sanitary Officer, Second (Rawal Pindi) Division, has been transferred from Murree to Rawal Pindi. Major G. B. Riddick, from Rangoon, has joined for duty at Maymyo. Major S. J. C. P. Perry, from Dover, has arrived in India. Major S. L. Cummins has been placed on special duty at the Royal Army Medical College, Grosvenor-road. Major A. H. Waring, on completion of a tour of service in India, has been posted to Portland. Major J. C. Jameson, from Khartoum, has taken up duty at Cairo. Major G. B. Carter has been placed under orders to embark for India on March 3rd for service with the Northern Army. Major R. J. Blackham, sanitary officer of the First (Peshawar) Division, has been placed on special duty for three months in connexion with the St. John Ambulance Association (Indian Branch). Major W. G. Beyts and Major W. H. Nickerson, V.C., have embarked for a tour of service in India on the transport *Dongola* from Southampton. Major J. H. Campbell, D.S.O., from Mauritius, has taken up duty as Recruiting Medical Officer in the London District. Major F. R. Buswell, from the London District, has been posted to the Station Hospital at Jubbulpore. Captain J. A. Douglas, at present serving in the Dublin District, has been placed under orders for a tour of service on the West Coast of Africa (Sierra Leone). Captain L. L. G. Thorpe has been transferred from the Royal Victoria Hospital, Netley, to Tidworth Park. Captain M. B. H. Ritchie, from Murree, has taken up duty at the station hospital, Rawal Pindi. Captain A. W. Gater, on return from India, has been posted to the Cork District. Captain S. M. Adye-Curran has been appointed in charge of the Brigade Research Laboratory at Sialkot. Captain J. T. McEntire has been transferred from Newcastle for duty in the Irish Command. Captain F. C. Sampson, from Bloemfontein, has been appointed to the military hospital at Potchefstroom. Captain F. W. Dawson, at present serving at Dundalk, has been placed under orders to embark for India on March 3rd next for duty with the Southern Army. Captain E. G. R. Lithgow, on return from Aden, has been appointed to the Eastern Command. Captain W. F. H. Vaughan, on return to duty from leave of absence, has been posted to Cosham. Captain J. M. H. Conway has been transferred from Kilbride to Dublin. Lieutenant G. S. Parkinson, Lieutenant W. Mathieson, Lieutenant J. James, and Lieutenant A. M. Pollard have embarked for a tour of service in South Africa. Lieutenant M. J. Williamson has been transferred from Tidworth Camp to Cardiff.

### INDIAN MEDICAL SERVICE.

The King has approved of the admission of the undermentioned gentlemen to the Indian Medical Service:—To be Lieutenants (dated July 30th, 1910): Phirozshah Byramji Bharucha, Richard William George Hingston, John Bailey Tackaberry, Charles Newton-Davis, Reginald Charles Clifford, Clive Newcomb, Henry Edward Shortt, Thomas Arthur Hughes, Latafat Husain Khan, Robert de Stretton Berkeley Herrick, Hargobind Lal Batra, Murray Purvis, Walter Oliphant Walker, Duncan McNab Taylor, and Vincent Philip Norman. To be Lieutenants on probation (dated Jan. 28th, 1911): John Scott, Alister Ralph Speirs Alexander, Frederick William Hay, "Kanwar" Indarjit Singh, Sidney Milverton Hepworth, Harry Slater Cormack, George Tate, George Selby Brock, Edward Slade Goss, John Frederick Henry Morgan, Krishnan Gopinath Pandalai, Jyoti Lal Sen, Charles Albert Wood, and Percival Sandys Connellan.

The King has approved of the retirement of Lieutenant-Colonel Hastings Norman Victor Harington (dated Nov. 28th, 1910), and of Major Charles Thomson (dated Jan. 30th, 1911).

Lieutenant-Colonel A. Street has been granted six months' extension of furlough on medical certificate by the Secretary of State for India. Lieutenant-Colonel C. H. L. Meyer has been appointed to officiate as Principal of the Grant Medical College at Bombay in succession to Lieutenant-Colonel H. P. Dimmock. Major J. H. McDonald has taken up duty as Presidency Surgeon, Bombay (Second District) in succession to Lieutenant-Colonel J. Crimmin, V.C., C.I.E. Major J. G. Murray has been appointed to officiate as Professor of Materia Medica at the Medical College, Calcutta, vice Lieutenant-Colonel J. T. Calvert. Captain M. I. Quirke has returned to India from leave. Captain A. W. Tuke has been appointed by H.E. the Governor of Bombay to be a Civil Surgeon of the Second class and to officiate as Resident Surgeon to St. George's Hospital in Bombay. The services of Captain C. L. Dunn, assistant plague medical officer at Jullundur, have been placed at the disposal of the United Provinces of Oudh and Rohilkhand. Captain L. P. Brassey has been appointed to officiate as Civil Surgeon at Meiktila during the absence on leave of Captain H. A. Dougan. Captain A. F. Baboneau, assistant plague medical officer at Amritsar, has been appointed District Plague Medical Officer at Ferozepore. The special leave of absence granted to Captain N. S. Wells, civil surgeon, United Provinces, has been commuted to furlough on medical certificate and extended by six months.

### SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

The under-mentioned to be Lieutenants (on probation): Robert McCheyne Linnell (dated Jan. 6th, 1911); William Crymble (dated Jan. 13th, 1911); and Charles Alfred Bignold (dated Jan. 17th, 1911).

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

2nd East Lancashire Field Ambulance, Royal Army Medical Corps: William James Purves to be Lieutenant (dated Dec. 21st, 1910).

2nd South Midland Field Ambulance, Royal Army Medical Corps: Lieutenant-Colonel Charles T. Griffiths reverts at his own request to the rank of Major (dated Feb. 15th, 1911). Major Charles T. Griffiths resigns his commission (dated Feb. 15th, 1911).

*Attached to Units other than Medical Units.*—Major Alfred C. Tunstall is retired, under the conditions of paragraph 116, Territorial Force Regulations, and is granted permission to retain his rank and to wear the prescribed uniform (dated Feb. 15th, 1911).

*For attachment to Units other than Medical Units.*—William Lang Hodge to be Lieutenant (dated Dec. 15th, 1910). Dudley Raymond Harris to be Lieutenant (dated Jan. 7th, 1911).

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THE annual dinner of the West London Medico-Chirurgical Society will take place at the Wharncliffe Rooms, Hotel Great Central, Marylebone-road, W., on Feb. 22nd, at 7.30 P.M.

# Correspondence.

"Audi alteram partem."

## CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

*To the Editor of* THE LANCET.

SIR,—In his address on Sir Charles Bell published in THE LANCET of Feb. 4th, p. 290, Professor Arthur Keith repeats the ordinary statement that Sir Charles Bell discovered that the anterior root of a spinal nerve is motor, the posterior root sensory. For his facts he relies on authorities no further back than 1867, and although he makes mention of the privately printed pamphlet of 1811 entitled, "Idea of a New Anatomy of the Brain," he does not appear to have consulted that pamphlet in the original. I took occasion to do so 20 years ago when preparing a text-book of physiology. After a careful examination of the original pamphlet of 1811, as well as of Bell's first paper on the nerves in the Philosophical Transactions of 1821, 1830, and 1836, and of the reprint in 1824, I came to the conclusion that Bell had missed making the discovery. I wrote the following passage with original publications of Bell and of Magendie at my elbow: "These facts [i.e., anterior root motor, posterior sensory], inclusive of those dependent on recurrent sensory fibres, were discovered by Magendie (1822). Charles Bell (1811), to whom they are commonly ascribed, observed motion on excitation of the anterior roots of a recently killed animal and inferred that the anterior or 'cerebral' roots are motor and sensory, and that the posterior or 'cerebellar' roots serve to govern vital actions."[1]

I am, Sir, yours faithfully,

A. D. WALLER.

Physiological Laboratory, University of London, S.W.

## TRANSPERITONEAL CYSTOTOMY FOR TUMOUR OF THE BLADDER.

*To the Editor of* THE LANCET.

SIR,—When reading the interesting paper under this title which appeared in THE LANCET of Jan. 28th, p. 214, from the pen of Mr. Seton Pringle, I remembered a case of epithelioma of the bladder operated upon by this method by Mr. Rutherford Morison during the time that I acted as his house surgeon. On referring to the hospital notes I find the date was so long ago as Oct. 17th, 1899, but as the case has never been published Mr. Pringle could not have been aware of its performance.

The patient was a woman of 48, and the growth, of the size of a florin, lay just above the left ureteral orifice. The peritoneum was freely opened, enabling the growth to be widely excised and the bladder repaired by immediate suture. Recovery was uninterrupted, and when the patient left the hospital on Nov. 2nd she was able to hold urine for three hours, and by February she did not require to get up at night. A year after the operation a definite recurrence was noticed in the pelvic glands, and when last seen, in March, 1901, although there were widespread deposits in the abdomen and left side of the neck, the patient had no bladder trouble whatever.

Since the time that I had the privilege of assisting Mr. Morison with this operation I have always kept the advantages of transperitoneal cystotomy before me, but it was not until January, 1909, that a suitable case came into my own hands. At that time I removed a large epithelioma from the bladder of a nurse, together with some enlarged glands from the right iliac artery, and so far she remains well and without signs of recurrence. Since then I have twice deliberately opened the peritoneum under similar circumstances—once in performing total removal of the male bladder for cancer, and once in assisting me to close an old-standing suprapubic fistula.

I think it may be a distinct advantage when operating for malignant bladder growths to make the opening of the peritoneum the first step in order that the condition of the glands and the abdominal aspect of the growth may be examined. As a result, it may be deemed unwise to proceed in the hope of a radical operation, or the glands may be safely dealt with and the area packed off before danger of contamination from the opened viscus.

I am, Sir, yours faithfully,

Newcastle-upon-Tyne, Jan. 31st, 1911. G. GREY TURNER.

## A METHOD OF SERUM DIAGNOSIS FOR TUBERCLE.

*To the Editor of* THE LANCET.

SIR,—I quite understand that Dr. d'Este Emery was unable to go into full details in his letter of Jan. 7th, and I appreciated very much the kindliness of his criticisms. In reply to his letter of Jan. 21st it is clear that his method gives very different results to mine. I cannot by my procedure detect the presence of antibodies in normal sera, or in the sera of patients who have recovered from tubercle.

Dr. Emery, as far as I can judge, finds sufficient immune bodies in the sera of apparently healthy people to deviate complement in 30 minutes. He therefore from his point of view insists that an accurate standardisation of the tubercle emulsion is necessary. It must be obvious that if neglect of this point had affected my results I would also have resorted to this measure. I find that ten times the quantity of the emulsion (equal to 1·6 per cent. of bacillary substance) that I ordinarily use fails to deflect complement in my serum, even after 12 hours' contact at 60° F. A further proof of this is that equal parts of the emulsion and my serum incubated for two hours are unable to cause the phagocytosis of tubercle bacilli, but it will do so when mixed with an equal part of heated serum.

Each sample of dried tubercle bacilli is tested against a normal and a tuberculous serum, as the efficacy of the various samples varies. Generally, a sample which gives good opsonic differences gives also good complement fixation results. I estimated three of the emulsions used during the last four weeks, and found that after 15 minutes in a very fast electric centrifuge there was a deposit of bacilli equal to 1·6 per cent. of the total bulk of fluid in each case. I keep a standard emulsion made up with 1 per cent. salt and 0·5 per cent. carbolic, and approximate each newly made emulsion to this standard. I find that centrifuging for 30 minutes fails to precipitate all the bacteria. The bacteria I employ are fresh, and are killed by steaming at 100° C. for one hour; they are then dried at a low temperature. The emulsion is neutral, and deposits a very little in 24 hours. It is made freshly every second day, and is never heated. With each test two or three normals are put up.

I find that immune bodies soon disappear from the sera of tuberculous patients on recovery—e.g., two cases of tubercle of joints and two of lung which lost the reaction in six weeks with improved health. When the disease is slight or the lesion quiescent exercise and massage are necessary to obtain a reaction. When the disease is acute and the opsonic index above normal, 1-200 000th milligramme of tuberculin, inoculated, is able to nullify the reaction. This suggests that the quantity of immune bodies may be extremely minute. The special advantage of this complement fixation test is that a decided positive determination is obtained, frequently impossible by other methods. When there is only a reduction of hæmolysis the experiment is repeated with 20 cubic millimetres of emulsion. If there is still a trace of hæmolysis I read the result negative. If the result is negative after two or three examinations and the physical signs show active disease I consider that tubercle can be excluded. Further observations will also demonstrate, I believe, that this fixation test can be relied upon as an indication of the cure of tubercle.

As regards hæmolysis, I find that abnormal sera have greater destructive power on sheep's corpuscles than normal sera, unless the disease is severe and the condition of the patient bad. As regards the opsonic index, I believe that this is only another method of demonstrating the Bordet-Gengou reaction. The same factors which influence hæmolysis also appear to influence phagocytosis. When the quantity of complement is constant an increase of specific

[1] An Introduction to Human Physiology, third edition, pp. 485–6. Bibliography at p. 619, first edition.

immune body increases the phagocytosis. In the absence of either immune body or complement the phenomenon ceases. An excess of immune body deflects complement in the presence of the specific bacillus.

Hæmolytic observations show that a subnormal opsonic index in a patient suffering from tubercle is frequently accompanied by a high degree of immunity, and may be regarded as a favourable sign, this contrary result being due to fixation of the complement in the opsoniser. I think that a supernormal index is due to the presence of immune bodies, but not sufficient in quantity to fix the majority of the complement. This condition is therefore more unfavourable than a normal or a subnormal index. A natural fall of the index to normal may be regarded as a favourable sign, as showing an increase of the immune bodies. The sudden fall of a supernormal index after inoculation I think is due to the neutralisation of the immune bodies, and the rise of a subnormal after an intravenous inoculation to a reduction of the immune bodies.

Some of the experiments demonstrating these points are as follows: 1. Antigen of heart muscle greatly reduces (on previous incubation) the phagocytosis of staphylococci with syphilitic sera, but not with normal sera. 2. If a serum with a constant subnormal index—e.g., 0·5—be heated to 52° C. for 15 minutes and then mixed with an equal part of tubercle emulsion and left for two hours at room temperature (60° F.), this, when incubated with an equal part of de-immunised serum and corpuscles, will give a phagocytic count from two to three times as great as normal serum. 3. If 4 parts of heated and 1 part of unheated serum be incubated with tubercle emulsion (60° F., two hours) and then 1 volume of this be incubated for 15 minutes with 1 volume of staphylococci and 1 volume of leucocytes, a normal serum shows three to four times more phagocytosis (T.B.) than the tuberculous. The staphylococci are employed to further reduce the complement.

As regards hæmolytic observations by Hecht's method, its convenience is its advantage, and as heated serum is employed the amboceptor difficulty is decreased. In case of difficulty, or when the serum is old, I use my own fresh serum and the patient's heated serum.

Since sending my article for publication I have altered the technique on a few points: (1) The serum is heated for 15 minutes at 125° F. (52° C. nearly) in place of 56° C. for ten minutes; (2) the fixation reaction is allowed to take place at room temperature (60° F.) in place of 98° F.; (3) the tubercle emulsion is added last, after the serum has been diluted with hypotonic salt made with tap-water; and (4) two hours' old serum can be used.

I am, Sir, yours faithfully,

Ealing, Feb. 11th, 1911. V. NESFIELD.

## NOTIFICATION OF MEASLES.

*To the Editor of* THE LANCET.

SIR,—I am instructed by the executive council of this league to inform you that at its meeting held on Friday last the following resolution was unanimously passed:—

That in view of the widespread incidence and considerable mortality amongst the children of the poor, and having regard to the very serious consequences of measles, that disease ought to be compulsorily notifiable.

We should be much obliged if you would notice this resolution in an early issue of your journal.

I am, Sir, yours faithfully,

J. HALFORD,
Secretary, National League for Physical Education and Improvement.

Tavistock-square, W.C., Feb. 13th, 1911.

CHICHESTER INFIRMARY.—At the annual meeting of the supporters of the Chichester Infirmary and Dispensary on Feb. 9th plans were adopted for reconstructing the old building, which is 85 years old, as a memorial to King Edward, who so frequently visited it during his stays at Chichester. The plans provide for bringing the building thoroughly up-to-date in every way, but at the same time the old character of the building will be strictly preserved. The cost of the scheme is roughly put at £14,000, towards which Mr. William James, of West Dean Park, King Edward's frequent host at Chichester, has given £10,000.

# BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

### *Bristol Eye Hospital.*

THE 100th annual meeting of the subscribers to the Bristol Eye Hospital was held on Feb. 6th under the presidency of Sir Charles Cave. The medical report stated that for the year ended September, 1910, 474 in-patients were admitted and 7061 out-patients were treated. The financial statement showed the institution to be free from debt. The income from invested funds was about £500 per annum, and the committee states that in order to carry out the work of the charity satisfactorily the subscription lists should be raised to a sum of £1000 annually. The profits of the fête which was held last year amounted to over £1600, and enabled the deficit balance which existed against the hospital to be wiped out and also to establish a small nurses' home situated close to the hospital, where the nurses will have more convenient quarters, and the rooms which had been previously occupied by them can now be used for the accommodation of patients.

### *University Lectures on Social Subjects.*

A series of evening lectures on social questions is being given by various speakers at the University of Bristol. The third of these, on public health, was recently delivered by Dr. D. S. Davies, the medical officer of health, who is also the lecturer on public health in the University. He gave a very interesting account of the health of Bristol in the Middle Ages, alluding to the devastating plague of 1349, which killed half the city, and to the three leper hospitals which are known to have existed in the fourteenth century. Even so recently as 1849, cholera claimed 2000 victims in Bristol. The death-rate, which in 1910 was 11·8, was 22·7 70 years ago. He hoped that the University would soon undertake the instruction and registration of women who would combine a practical knowledge of nursing with a knowledge of administrative work and hygiene. The fourth lecture, on the treatment of the feeble-minded, was given by Mrs. Hume Pinsent, a member of the recent Royal Commission.

### *A Hospital Nurse's Brave Conduct.*

The committee of the Bristol General Hospital at a recent meeting congratulated one of the nurses on the remarkable bravery which she showed in dealing with a delirious patient. About 4 A.M. the man in question, a burly dock-labourer suffering from pneumonia, suddenly and without warning became delirious and jumped on the window-sill. The nurse, who was just coming into the ward, seized him, but he broke a pane of glass and climbed out on a sloping roof which lies just outside the window. The nurse followed him through the broken window and struggled with him on the roof, which is 10 feet wide and protected from a sheer drop of 30 feet by a parapet which is about a foot high. In the struggle he broke a skylight and fell through it to a verandah 16 feet below, breaking several ribs. The nurse fortunately escaped, and though the patient died his condition was so bad that he could not have recovered even if there had been no accident.

### *The Lord Mayor's Hospital Sunday Fund in Bristol.*

The collections devoted to this fund and handed in by Feb. 10th have amounted to £1201 0*s.* 9*d.*, as compared with £1084 0*s.* 5*d.* received last year by the same date. There are about 200 collections yet to come in, 327 having been received so far.

### *Clifton Dispensary.*

At the annual meeting of the friends of this charity, held on Feb. 6th, it was stated that the admissions to treatment during 1910 included 2420 medical, 312 surgical, and 71 midwifery cases. In spite of an increase of £20 from subscriptions, donations, and collections, there was an adverse balance of £8 8*s.* 4*d.* at the end of the year.

### *The Importation of Diseased Beef in Bristol.*

Dr. D. S. Davies has reported to the health committee of the city of Bristol the discovery by one of his food inspectors of disease in consignments of beef arriving in the port of Bristol from Australia. Similar observations had been made

in the port of London. Nodular masses were found embedded in the meat which consisted of aggregations of a parasitic worm, spiroptera reticulata. Although the ingestion of this dead worm would not infect human beings, yet such meat is clearly unfit for food, and steps are being taken in Australia to prevent exportation of diseased portions. The Bristol investigations applied to 500 forequarters, 306 of which were affected, and 500 hindquarters, 64 being affected.

*Backward Children.*

At a meeting of the Bristol branch of the Parents' National Education Union held on Feb. 9th at Clifton College, under the presidency of Mr. J. E. King, headmaster of the College, an interesting lecture was given by Dr. G. H. Savage on Backward Children.

*Taunton and Somerset Hospital.*

The annual meeting of the subscribers to the Taunton and Somerset Hospital was held at Taunton on Feb. 9th under the presidency of the Hon. E. B. Portman. The medical report was satisfactory, but the financial statement showed a deficit of £1710 against the institution. It was decided that in the summer a strong effort should be made to celebrate the centenary of the hospital by the establishment of an endowment fund. It is proposed to try to raise £30,000.

*The Water-supply of Chard (Somerset).*

At the last meeting of the Chard town council it was decided to purchase land for the proposed new water scheme for the town. The water-supply will be obtained by a gravitation scheme, and the cost of the undertaking will be about £8000.

*The Care of the Feeble-minded.*

The Taunton board of guardians has recently proposed a scheme whereby all the pauper idiots, imbeciles, and epileptics in the various workhouses in Somerset should be placed in one institution in that county. A meeting, at which representatives from every union in Somerset were present, was held at Taunton last week. After a considerable discussion it was unanimously decided to approach each board of guardians in the county and ascertain whether one of these bodies could allow a workhouse or a portion of such an institution to be used for the proposed scheme.

*Peter Pearson Johnson, M.B., Ch.B. Edin.*

Dr. P. P. Johnson died at his residence, Henley Lodge, Yatton, Somerset, on Jan. 29th, in his fifty-eighth year. Dr. Johnson graduated M.B., Ch.B. of Edinburgh in 1877, and shortly afterwards went to Yatton, where he soon acquired an extensive practice. He was district medical officer for Yatton, surgeon to the employees of the Great Western Railway and the post office, and also certifying factory surgeon. Dr. Johnson took a great interest in all local matters, and was formerly chairman of the Yatton parish council. He was a prominent Freemason and a strong churchman. He was very popular in Yatton, and much sympathy is felt there for his widow and children. The funeral took place on Feb. 1st and was largely attended, many Freemasons being present, including Colonel W. Long (Provincial Grand Master of Somerset). Representatives of the Yatton parish council, the Oddfellows, the Church of England Men's Society were also present, as well as the Dean of Bristol (Dr. Pigou) and a large number of local members of the medical profession.

*The Research Defence Society.*

A local branch of the Research Defence Society for the "Three Towns" has been formed at Plymouth.

*Medical Officer of Health of Cornwall.*

At a meeting of the Cornwall county council held on Feb. 8th three candidates were interviewed in connexion with the appointment of medical officer of health for the county. Mr. Robert Burnet, M.Sc., M.B., Ch.B. Vict. and Liverp., D.P.H. Birm., was eventually appointed, securing 41 votes against 25 and 3 obtained by the other applicants respectively. The salary of the post is £500 per annum, increasing by annual increments of £20 to £600, in addition to travelling expenses. Dr. Burnet is at present medical officer of health of Bury, medical officer to the education authority, and medical superintendent of the Bury and District Joint Hospital Board fever and small-pox hospitals.

Feb. 14th.

# WALES.

**(FROM OUR OWN CORRESPONDENT.)**

*Medical Officers of Health for Brecknockshire and Cardiganshire.*

THE Brecknockshire county council has elected Mr. J. C. Bridge, medical officer of the Dunfermline Trust, as medical officer of health and school medical officer of the county of Brecknock at an annual salary of £500 in addition to travelling and office expenses. When the election took place on Jan. 27th exception was taken by some members of the council to the fact that among the six candidates who had been selected by a committee to appear before the council not one could speak Welsh. A member of the committee thereupon expressed regret that the salary offered was so small, and stated that if it had been higher a Welsh-speaking official might have been appointed. For the position of medical officer of health and school medical officer of Cardiganshire there were only five applicants, the salary, which includes travelling expenses, being £450 per annum. Two of the candidates withdrew their applications, and at the meeting of the council on Feb. 9th Mr. R. W. Rees, who was at one time medical officer of health of the Llandilofawr urban and rural district councils, was elected.

*Pollution of the River Wye.*

The water-supply of the city of Hereford is drawn from the river Wye, into which the untreated sewage of the town of Hay is discharged about 30 miles above the Hereford intake. After trying in vain to induce the Hay district council to take suitable steps to prevent the pollution the Hereford corporation has at length decided to take definite action, in conjunction with the county council, with a view of compelling the Hay authority to undertake the necessary remedial measures.

*Cardiff Infirmary: Scheme for Payment by Patients.*

The board of management of the Cardiff Infirmary has decided to carry out experimentally for one year a scheme under which each patient will be expected to contribute to the funds of the institution unless obviously too poor to do so. It is proposed that each in-patient should pay sixpence per day and each out-patient threepence per week. At the festival dinner of the infirmary held on Jan. 25th the sum of £2800 was subscribed towards the funds of the institution. Lord Tredegar, who presided, pointed out how absolutely essential it was to have a medical school attached to a large infirmary. He referred also to the necessity for adequate accommodation for research work.

*Aberystwith Infirmary.*

The Aberystwith Infirmary and Cardiganshire General Hospital was established in the year 1821 as a dispensary. It has now accommodation for 27 patients. During 1910 there were treated in the wards 161 patients, and 1004 persons attended the out-patient department. The expenditure amounted to £919 and the income received was £752. The subscription list of £161 seems a meagre one; indeed, if it were not for the assistance rendered from a special trust fund, which contributed over £500 in 1910, it would be impossible to carry on the institution. Sir John Williams has recently been appointed consulting physician to the infirmary.

*Pontypridd Workhouse.*

The Pontypridd Union is a large one, including as it does not only the town of Pontypridd but also the adjoining Rhondda urban district. The workhouse is situated in the centre of Pontypridd, and in recent years there has been established a secondary workhouse for old people in the Rhondda, while in another direction the children are housed in cottage homes. The nursing accommodation at the older workhouse is quite inadequate for the needs of the institution. In a special report upon the matter, Mr. Howard Davies, the workhouse medical officer, has urged very strongly the necessity for remedying the existing conditions. There is a lack of accommodation for the nurses when they are on duty, and the only sitting-room provided for them is badly ventilated, dingy, cheerless, and altogether uncomfortable. The bathrooms and annexes are quite out of date, so that the ward utensils have to be cleansed in the same sink with plates, mugs, cups, &c. A subcommittee of the board of guardians

has recommended that a separate building should be provided for the nurses and that the bathrooms and annexes should be reconstructed.

*Housing in Monmouthshire.*

In a report presented to the Local Government Board in 1905 Dr. W. W. E. Fletcher referred to the unsatisfactory condition of many of the houses in the urban district of Nantyglo and Blaina in the Monmouthshire colliery district. Many of the circumstances which he described appear to be still in existence and are referred to in a report which has recently been made by the medical officer of health of the district, Mr. H. C. Bevan. Of 960 houses in one particular locality there are 442 with no through ventilation, and 187 have no system of drainage. Instances are given in the report of back-to-earth cellar dwellings which are occupied by families consisting of from five to eight persons, and one case in which a two-roomed cellar dwelling was occupied by two adults and seven children.

Feb. 13th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Liverpool School of Tropical Medicine: Plague in China; Sleeping Sickness; Another Expedition to Rhodesia.*

AT a meeting of the School of Tropical Medicine held recently, Mr. W. H. Lever (the chairman) presiding, it was unanimously resolved to send the following telegram through the Chinese Minister to the Chinese Government, in view of the great ravages caused in Manchuria at present by the plague, viz. :—

The President and Committee of the Liverpool School of Tropical Medicine offer to the Chinese Government the services of an experienced commissioner to proceed to Manchuria and assist in combating the outbreak of plague. Would be much obliged if your Excellency would communicate the offer to the proper quarters and advise the school whether offer accepted.

The following telegram has been received in reply :—

Secretary Milne, Tropical School, Liverpool,—Many thanks for your telegram and your kind offer. Question under urgent consideration with British Government, who will associate themselves with the measures to be taken. CHINESE MINISTER.

It will be of melancholy interest to note that the devoted and self-sacrificing missionary, Dr. A. F. Jackson, who has just fallen a victim to the plague in his endeavours to assist, by his skilled knowledge, the terrified inhabitants of Manchuria, was quite recently a student at the Liverpool School of Tropical Medicine. The other two martyrs of the school were Dr. Walter Myers and Dr. J. Everett Dutton.

The British South Africa Company has decided upon the despatch of a special commission with the object of investigating sleeping sickness in Rhodesia. The commission will consist of Dr. Aylmer W. May, principal medical officer of Northern Rhodesia; Dr. A. Kinghorn, of the Liverpool School of Tropical Medicine; Mr. H. Leach, of Northern Rhodesian Medical Service; Mr. O. Silverlock, entomologist; and Mr. Jollyman, bacteriologist. All the commissioners, with the exception of Dr. May and Dr. Kinghorn, are already in Africa. Dr. Kinghorn will sail from England on Feb. 18th, and will be followed later by Dr. May. An expedition sent out by the Liverpool School of Tropical Medicine is already on its way to the Congo, under Professor J. L. Todd, well known in connexion with sleeping-sickness research, and two assistants; and it is proposed that a further Commission shall go from this country to conduct separate investigations in another part of the Congo. Dr. May informs the Press Association that sleeping sickness in the Luangwe Valley of North-east Rhodesia, where the Chartered Company's commission is about to work, is of an entirely different type from that of ordinary sleeping sickness, inasmuch as it is evident that it is not transmitted by the glossina palpalis. This insect does not exist within 200 miles of the Valley, and the majority of those attacked have never been in the palpalis area. It is suggested that this disease is carried by the morsitans fly, an insect which, unlike the palpalis, is not confined to well-defined limited areas in the neighbourhood of water, but is distributed over large areas. It does not seem to follow, however, that because the morsitans is a disease-carrier at one altitude it is necessarily equally dangerous under other climatic conditions. Five Europeans have been stricken with this form of sleeping sickness, of whom three are dead and two are under treatment. Dr. May expresses the opinion that if the conditions agreed to by the conference which has just been held at the Foreign Office are carried out there is not much danger of the disease spreading from the Congo southwards with the extension of the railway. With proper precautions there is no cause for alarm, as the conditions in Northern Rhodesia are entirely unsuitable to the spread of the malady. Dr. Kinghorn is one of the most distinguished workers in the Liverpool School of Tropical Medicine, with which he has been associated during the last five years. He has been on two previous expeditions in Africa for the purpose of investigating the causes of sleeping sickness. His investigations have been varied and extensive.

*Death of Dr. A. F. Jackson.*

The death of Dr. A. F. Jackson on Jan. 26th, from plague, at Mukden in Manchuria, came as a great shock to his numerous friends in Liverpool. Dr. Jackson left this country last autumn to begin work as a medical missionary in Manchuria, where he arrived in November last, so that he died on the very threshold of a life's work which was full of promise. He was born in Oxton, Cheshire, 26 years ago, and was educated at Merchant Taylors' School and at the University of Cambridge. He had a brilliant career at Cambridge, and afterwards studied medicine at the University of Liverpool, where he graduated as M.B., C.M. He also received the Diploma of Tropical Medicine.

Feb. 14th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Carnegie Trust.*

THE ninth annual meeting of the Carnegie Trust was held on Feb. 7th at the Westminster Palace Hotel, London, the Earl of Elgin presiding. The ninth annual report for the year 1909–10 submitted by the executive committee showed that the success of the research scheme of the Trust was being well maintained. The sum of £6824 had been expended upon fellowships, scholarships, and grants, and £2454 upon the laboratory, towards which latter the Royal College of Physicians of Edinburgh and the Royal College of Surgeons of Edinburgh together contributed £1025. The class fees paid during the year amounted to £48,540 2*s*., an increase of £1184 6*s*. 6*d*. as compared with the preceding year. The beneficiaries in the winter session 1909–10 numbered 3676 and in the summer session 1353. The average amount paid per beneficiary was £12 12*s*. 9*d*. Certain other beneficiaries had received fees for classes taken outwith the academic year and others for the summer vacation courses in Edinburgh. The executive committee called the attention of the Trust to the fact that the increasing expenditure on class fees made it possible, if not probable, that there would be a deficit against the transactions under Clause B. The committee considered that as they could not protect themselves against the occurrence of a deficit in future years under the present system it ought to be amended without delay. They must in the first place announce that they could not continue to pay the fees in full. Secondly, the system of paying for separate classes must be abandoned. If the system of composite fees were adopted by the universities it might be possible for the Trust to pay such a proportion of those fees as their funds permitted. If the universities did not succeed in making such an arrangement it might be necessary for them to determine a scale of fees on the same principle for themselves. It seemed reasonable that the interests of beneficiaries already on the roll should be protected as far as possible. Thirdly, the amount they could afford to pay would be more easily determined if some scheme could be adopted for enrolling the names of applicants in advance. Fourthly, it could cause no hardship to require students who had already been receiving payment to inform them before the end of the summer session whether they intended to apply again in October or to require new applicants to give a similarly early notice. Fifthly, it did not in the least follow that if these suggestions were adopted the scale of

their allowances would become unsettled or would vary from year to year, or that the discussion in the future of further changes would be precluded. The main objects of these proposals were (1) to prevent any chance of the fund becoming bankrupt for a longer period than the year now current; and (2) to adopt a machinery that might be made effective for more than one occasion if need be. The committee referred to allegations which had been made that the payment of fees was accepted by students whose private means were sufficient to defray their expenses. In several cases where gross abuse had been alleged inquiry had shown an amount of misrepresentation and exaggeration which had rendered any action inadvisable. The committee called attention to the fact that up to Sept. 30th, 1910, 75 beneficiaries had voluntarily refunded the class fees paid by the trust on their behalf, the sum amounting in all to £1689 1*s*. 4*d*. It was not to be expected that in the early years of the trust beneficiaries would be in a position to avail themselves of this privilege; and the fact that in the past year fees to the amount of £549 had been repaid—more than double the amount paid in any previous year—was an undoubted proof that the system could, and did, encourage honourable sentiments. Lord Elgin, in moving the adoption of the annual report, drew attention to the satisfactory nature of the reports relating to research. Referring to the payment of fees, he was confident that it was not true that general or flagrant abuses or misappropriation of the fund had prevailed, while the gratifying increase in the amount of fees repaid showed that students were not unwilling to avail themselves of opportunities to discharge honourable obligations. He pointed out that the increase of beneficiaries was practically the same as the increase in matriculated students in the last nine years; this might be merely a coincidence, but the increase might be due to the development of the secondary schools, and these students might be well qualified for assistance. The motion of the Chairman was seconded by Mr. Haldane, who referred especially to the importance of the work of the Carnegie Trust in stimulating research. Sir Arthur Rücker then spoke in appreciation of the work done by the Trust. Lord Balfour of Burleigh moved a vote of thanks to the Chairman, which was seconded by Lord Reay. Principal Sir William Turner referred to the enormous benefits conferred on the Scottish universities by the munificent benefaction of Mr. Carnegie and referred in complimentary terms to the work of the executive committee.

*Complimentary Dinner to Dr. William Craig of Edinburgh.*

On Feb. 8th the Fellows of the Edinburgh Obstetrical Society entertained Dr. William Craig to dinner at the Caledonian Station Hotel on his retirement from the treasurership of the society, a post that he had held for 35 years. About 40 Fellows were present, and the President of the society, Dr. F. W. N. Haultain, occupied the chair. The toast of the evening was proposed by Sir A. R. Simpson, who, in presenting Dr. Craig with a silver tea and coffee service, referred to the great services he had rendered to the society.

*Reconstruction of Hospitals in Glasgow.*

For many years the hospital accommodation in Glasgow has been felt to be inadequate, and with the ever-increasing demand for beds the difficulty in dealing with cases requiring and deserving hospital treatment has become greater in the last five years. That the governing boards of the various hospitals have risen to the situation is evident when one considers that within the last three years the Maternity Hospital has been rebuilt on a very large scale, the Cancer Hospital has been practically rebuilt, the Royal Samaritan Hospital for Women has been enlarged, the Western Infirmary has added a new block to its buildings, the Royal Infirmary is being entirely rebuilt on the same site, and the Royal Hospital for Sick Children is to be rebuilt immediately on a better site and with more than double its present accommodation. In the plans for the new Sick Children's Hospital arrangements have been made for a 300 cot hospital on a fine site extending over ten acres, but in the meantime it is intended to erect accommodation for about 200 cots. That means that it will be possible to treat 3000 children in the institution per annum as compared with 1000 in former years. The estimated cost, £120,000, will be exceeded, but the directors now have £102,000 in hand. The Royal Infirmary also is in process of reconstruction. The operations began in 1905, and in April, 1907, His Majesty King George, who was then Prince of Wales, laid the foundation stone. Since that time great progress has been made with the undertaking, but the new work is so much surrounded by the existing buildings, which have been retained as far as possible so that the bed accommodation may not be restricted during the present operations, that the passer-by gets only the vaguest idea of its nature and extent. The block at present being built is that for special diseases, together with the third section of the surgical block which will then be complete and will contain 290 beds. The new pathological block is also nearly completed, and it is the intention of the directors to proceed at an early date with the erection of a portion of the new medical block, which embraces nearly one-half of the main frontage upon Cathedral-square, together with the east wing which connects the Cathedral-square block with the central or special diseases block.

*Aberdeen Royal Infirmary and Lunatic Asylum.*

The annual general meeting of the corporation of the Royal Infirmary and Lunatic Asylum of Aberdeen was held in the infirmary hall on Feb. 8th, Lord Provost Wilson presiding. Mr. Peterkin, chairman of directors, in moving the adoption of the annual report, referred to the question of hospital abuse. He pointed out that those who improperly took advantage of the infirmary were not only unfairly taking gratuitous services from the physicians and surgeons, but were dishonestly using funds not subscribed for their benefit. A proposal to increase the infirmary directorate from 9 to 11, in order to allow of the inclusion of more working-class representatives, was defeated by a large majority.

*Open-air Recovery Schools: Aberdeen Medical Officer's Report.*

At a meeting of the school administration committee of the Aberdeen school board held on Feb. 6th a report by the medical officer, Dr. G. Rose, on open-air recovery schools was considered. Dr. Rose remarked that although theoretically such schools form an alluring and fascinating picture to the educationist, the philanthropist, and the school medical officer, when the scheme comes to be considered as part of the educational system difficulties arise. Such questions as—What class of children require treatment in open air, and what number, say, in a place like Aberdeen? What are the possibilities of providing such a school in a proper place? Is transit to the school possible and satisfactory? Would the cases most in need of treatment stand the fatigue of transit? Would the climatic conditions allow such schools to be conducted with benefit and success? Might not better results be got by different methods at a less cost? How may the relative value of the different factors acting on the child in the open air be estimated? May not a greatly diminished curriculum, an increase in number of meals, better quality of food, and mid-day sleep be factors as important as the massive stimulation of country air?—all these must be settled before a satisfactory answer can be given to the possibility of providing such a school. Dr. Rose treats the matter at greater length. With regard to suitable cases, cases of tuberculous lung disease are at once excluded on the ground of danger to the others; even those in the pre-tuberculous stage, though suitable for treatment, will not be available on account of the clinical impossibility of selecting them. If the same class were sent to the schools as are sent in Germany—namely, the backward children, who are physically debilitated, anæmic, &c.—and if the proportion of such children was the same in Aberdeen, sooner or later Aberdeen would have to provide for the outdoor education of 2500 or 3000 children. Site, buildings, transit, school-hours and food, education, cost, are all fully considered in the report.

*Elgin County Council and the Medical Inspection Question.*

The Elgin county council met on Feb. 6th, when there was submitted a minute of the joint meeting of the subcommittees of the county council and the secondary education committee, with regard to the terms they proposed for the joint appointment of a medical officer for the county and the inspection of schools. It may be stated that the county council proposes to pay £205, and the secondary education committee £245, the sum of £205 by the county council to include all expenses. After some discussion the recommendations of the subcommittees were adopted.

Feb. 14th.

# IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Infective Disease in Dublin.*

INFECTIVE disease in Dublin is arousing anxiety and putting a strain on hospital accommodation. Measles, whooping-cough, diphtheria, scarlet fever, and enteric fever are all present and increasing. Some six cases of each of the three last named are notified daily, while many cases apparently go without notification. Measles and whooping-cough are not notifiable in Dublin. Sir Charles Cameron, medical officer of health, has suggested milk as the distributer of typhoid and scarlatinal infection. On his advice most of the primary schools in the city have been closed. Should the outbreak continue steps will be necessary to provide hospital accommodation.

*Bequests to Dublin Hospitals.*

Last week the executors of the late Miss Augusta Magan applied to the Master of the Rolls for permission to hand over one-third part of her estate, some £20,000 to Sir Patrick Dun's Hospital and one-third to the Adelaide Hospital. This proposal was approved. The executors wished to apply the remaining third to the maintenance of a district nurse at Enfield, in the county Meath, or to devote it to the Meath Hospital, Dublin. The first alternative was declined, the consideration of the second postponed.

*Royal College of Surgeons Dinner.*

The annual dinner of the Royal College of Surgeons in Ireland was held on Feb. 11th in the hall of the College, Mr. R. H. Woods, the President, presided, and His Excellency the Lord Lieutenant of Ireland was the principal guest. The heads of the various colleges and professional bodies were also present in honour of the 127th anniversary of the granting of the College Charter. His Excellency, in his speech, referring to the death-rate from tuberculosis last year, said that in the Dublin registration area there had been a further drop of 0·1 since 1909—viz., from 3·8 per 1000 in 1909 to 3·7 in 1910, which he hoped indicated a permanent tendency to decrease. The decrease had been in the deaths from pulmonary tuberculosis. He urged the provision of some scheme to provide for children with surgical tuberculosis the advantages of sea air and good food.

*Public Health in Kingstown.*

The urban council of Kingstown has decided not to appoint a successor to the lately deceased superintendent medical officer of health, leaving to the dispensary medical officers the entire responsibility in future. A residential seaside district of 17,622, with a death-rate of 26·6 per 1000, seems to require more rather than less sanitary supervision.

*Outbreak of Enteric Fever in Lurgan.*

At the monthly meeting of the Lurgan urban council on Feb. 6th Dr. Samuel Agnew, medical officer of health, referred to a severe outbreak of enteric fever, between 30 and 40 cases having been transferred to the local hospital and two deaths having occurred, and intimated that the dissemination had occurred through a milk-supply contaminated, it was strongly suspected, by a typhoid carrier. The outbreak emphasised the necessity that existed for sanitary authorities enforcing strictly the regulations necessary for safeguarding milk-supplies. Dr. Agnew pointed out that as a large proportion of the milk-supply of Lurgan was brought in from the adjoining districts it behoved them not only to maintain a strict surveillance within their own district, but also to take cognisance of the manner in which the Dairies Order was carried out in their immediate neighbourhood. It appears the only power the urban council had over rural councils was to implore them to see after this work; and if they refused, to appeal to the Local Government Board, which could give them power over the dairies outside the town boundary, but that was a course they rarely appeared anxious to adopt. The clerk of the Lurgan urban council was instructed to ask the clerks of the Moira and Lurgan rural councils to enforce strenuously the power invested in them under the Dairies' Order and the Public Health Acts.

*Royal Sanitary Institute Congress.*

In connexion with the Congress of the Royal Sanitary Institute, which is to meet in Belfast from July 24th to 29th, under the patronage of the Lord Lieutenant, with Lord Dunleath as President, there are to be two sections: (1) Sanitary Science and Preventive Medicine, with Sir Lauder Brunton, Bart., as President; and (2) Engineering and Architecture, with Mr. W. K. Parry as President. The Lord Mayor of Belfast will preside over the conference of municipal representatives, and the Lady Mayoress over the conference of women on hygiene. The chairman of the public health committee, Dr. R. Thomson, will preside over the conference of port sanitary authorities; Sir Charles A. Cameron, C.B., over that of medical officers of health; Mr. P. C. Cowan, D.Sc., over that of engineers and surveyors; Mr. David Rutherford over that of sanitary inspectors; and Sir John Byers over that on the hygiene of childhood.

*A Novel Offer.*

On Feb. 11th, at the weekly meeting of the Coleraine board of guardians, a letter was read from Dr. James Steel, medical officer of Articlave dispensary district, proposing to appoint a trained general nurse altogether at his own expense, so that he should have the absolute control of her duties as well as the responsibility.

Feb. 14th.

# PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Technique of the Hypogastric Route.*

AT a meeting of the Society of Paris Surgeons, Dr. Paul Delbet presented a study in detail of the technique of the hypogastric route. He pointed out the disadvantages from his own point of view that attend inflation of the rectum, and showed the advantages of distension of the bladder with air and the importance of thus limiting the area of peritoneum in the field of operation. He recommended the practice of suturing the bladder wall to the skin from the very outset, so as to avoid infection of the space of Retzius. As to drainage, he always used Freyer's method. M. Delaunay said that to prevent the escape of liquid into the pre-vesical space he fixed the bladder with Kocher's forceps, thus at the same time limiting the extent of the incision. He allowed the bladder to empty itself through the urethra before incising it. M. Thévenard said that he employed a sound in the bladder to cut down upon, making it appear just above the pubes; he then seized the bladder walls with a couple of Doyen's mouse-toothed forceps, the fatty layers and the peritoneal *cul-de-sac* were then folded back and the walls incised layer by layer; the point of the sound being held in place immediately above the pubes and not pushed forward, it served as a guide.

*A Syndicate of Patients.*

In Ferté-Macé there has just been established a "syndicate of patients." The medical practitioners of this place recently raised their scale of fees. The patients, not recognising in the general rise of the cost of living any justification for the raising of medical fees, protested. The profession, however, took no notice of their protest, so the inhabitants formed a syndicate and decided to bring into Ferté-Macé one or more medical men who should agree to treat their patients at the old rate.

*Students of Dental Surgery.*

The students in dental surgery in Paris have appeared before the Chamber of Deputies with a petition setting forth the demands of their body. They claim, in view of the five years of study imposed, of the courses in the hospital and the dissecting-room, and the complete and difficult examinations they have to undergo for their diplomas, that they are entitled to the right of competing for State positions directly involving their specialty, and particularly for the post of surgeon-dentist of the hospitals. It is not a priority that they demand but an equality in their specialty with the medical men who alone at present are admitted to compete for the post of surgeon-dentist at the hospitals. Further, they demand that in the army surgeon-dentists shall have the relative rank of major and have the care of the mouths of the soldiers, in place of being the drudges of the service.

*Malta Fever and Mediterranean Fever.*

The Governor of Malta has complained to his Government regarding the name "Malta fever," the condition called by

this name being, he avers, wrongly so-called, for it implies that Malta is the only focus of the disease, and thus keeps up commercially a prejudice against the island. He requests that the name may be changed to "Mediterranean fever." The British Government communicated with the French Government on the matter, and the latter referred the question to the Academy of Medicine, which appointed a commission of investigation. The commission, through the report of M. Widal, by way of giving satisfaction to the Governor of Malta, makes the following observations: (1) The term "Malta fever" was given originally out of respect for the physicians of the island, who were the first to describe and study the disease; (2) the term "Mediterranean fever" would appear to be equally inapplicable, since the disease does not prevail throughout the Mediterranean.

*The Plague in China.*

A French physician, Dr. Menier, who was in charge of the Chinese Medical School at Tien-Tsin, being asked by the Chinese Government to undertake the fight against plague at Fondziadian, devoted himself to the task with entire self-abnegation. The disease, however, attacked him on the first day, and in spite of all the efforts of the Russian physicians, he died two days later, without allowing them to take his temperature for fear of transmitting the disease. Dr. Meslier, a deputy, is about to set out for Harbin to study the epidemic. Finally, Dr. Broquet, surgeon-major of the colonial troops, left Paris on Feb. 11th for the Far East. He is charged by the French Government with a double mission in the regions devastated by plague. He will first go to Tien-Tsin to institute all the sanitary measures possible for the safety of the French army of occupation, which numbers about a thousand at Tien-Tsin and at Peking. He will take with him 15,000 doses of the antiplague vaccine made by the Pasteur Institute, which has given excellent results in Indo-China. He will afterwards proceed to Manchuria to study the plague situation there.

*The Medical Orchestra.*

A few months ago there was established in Paris an association of physicians who are performers on various musical instruments. They form an orchestra of about 80 and meet several times a month for practice. Following on a first concert given last December, which was highly successful, they consented to give a second for the benefit of a medical foundation, the Maison du Médecin. The hall was too small to hold all the medical personages and the rest of the assembly that came to attend a function at once artistic and charitable. The concert consisted exclusively of pieces executed by doctors of medicine. The vocal part was rendered by a wife and a daughter of medical men, and the harp was played by a medical man's daughter who has already gained the first prize at the Conservatoire. Finally, Dr. Paul Mounet, an Associate of the Comédie Française, recited some beautiful verses by Dr. Montoya, while kinematographic pictures of the stomach and of frisky treponemata enlivened the interludes. The musical compositions of the President and Vice-President of the medical orchestra were warmly applauded.

Feb. 13th.

MEMORIAL TO THE LATE DR. J. M. RHODES.—It is not very often that a medical practitioner has his memory perpetuated by the building of a clock tower, but one erected as a memorial of the late Dr. John Milson Rhodes was unveiled at Didsbury about a fortnight ago. It stands in front of the railway station and bears an inscription, "A Friend of Humanity." He was known to the country at large as a pioneer of Poor-law reform, and his efforts in that direction extended over a period of 30 years. He did his work quietly, but with sound judgment and perfect mastery not only of the great principles but of the details of his subject. The Lord Mayor was invited to take over the memorial on behalf of the citizens of Manchester, and in the course of his remarks said that Dr. Rhodes would "be remembered ..... as the man who had brought about the reform of the workhouse dietary and the establishment of trained nursing service in the Poor-law" establishments. The sorrow at the death of Dr. Rhodes, which was felt in Didsbury, was widespread and genuine, for his sterling qualities had endeared him to the people.

# Obituary.

## ALFRED WILLIAM FREDERICK STREET, D.S.O.,

LIEUTENANT-COLONEL, I.M.S. (RETIRED).

THE news of the death, after only a few hours' illness, of Lieutenant-Colonel Street, D.S.O., will have come as a shock to a wide circle of friends both in India and in England. This event, which was due to cerebral hæmorrhage, occurring as it did without any premonition at the comparatively early age of 58, at his residence, Norsey Manor, Billericay, Essex, was wholly unexpected, as the deceased, a robust man, had always enjoyed good health. He had, in fact, been present in the hunting field on the Saturday preceding his death, which occurred on the morning of Monday, Jan. 30th.

Born in 1852, the eldest son of the late Rev. B. Street, vicar of Barnetby-le-Wold, Lincolnshire, Lieutenant-Colonel Street began his medical curriculum at St. George's Hospital in 1872. Here he succeeded in carrying off the Brackenbury prize of his year, and, qualifying in due course, he held for some little time a resident appointment at the Royal Free Hospital, Gray's Inn-road. Entering the Indian Medical Service in October, 1877, he served with distinction in the Afghan war of 1878–80, being present at the action of the Helmund on July 14th, 1880, the battle of Maiwand, defence of Kandahar, and the battle of Sept. 1st. For these he was mentioned in despatches and received the medal and clasp. In 1886–87 he took a very active part in the Burmese expedition, being again mentioned in despatches and receiving the Distinguished Service Order as well as the medal and clasp. The greater portion of his career in the Indian Medical Service was, however, passed in civil employ. In this he showed the same zeal and devotion to duty as was characteristic of him in his military work. From 1887 until his retirement with the rank of Lieutenant-Colonel in 1902, he held the position of Deputy Sanitary Commissioner under the Government of Bombay, in which he did very valuable service, both in the sanitary control of a very wide area and in the suppression of plague in Bombay itself.

Of a genial temperament, physically strong and active, a good horseman and fond of field sports, Lieutenant-Colonel Street made many friends. Modest and retiring, with a good deal of natural reserve, for he did not wear his heart on his sleeve, probably only those who knew him intimately really appreciated the depth and nobility of his character. A very high sense of duty actuated all his doings, and anything mean or petty was repugnant to him. The warmth of his affections, those who are privileged to speak knew well, as well as the strong undercurrent of religious belief which betrayed itself in his life.

Lieutenant-Colonel Street married in 1884 Helen, only daughter of the late Rev. E. M. Weigall, Vicar of Frodingham, Lincolnshire, for whom, as for his children (a son and three daughters), the greatest sympathy will be felt. The funeral took place at Barnetby, Lincolnshire, on Feb. 2nd, where the remains of the deceased were laid beside his father and mother near his old home. A memorial service held at the same hour at the parish church, Billericay, Essex, was largely attended, the fact testifying to the esteem with which he was regarded in the neighbourhood in which he had made his home for some years.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Sigmund Lustgarten of New York, who was formerly associated with Professor Kaposi, the eminent Vienna dermatologist. Dr. Lustgarten's name will be remembered in connexion with the supposed discovery of the bacillus of syphilis.—Dr. Alberto Severi, professor of forensic medicine in Genoa.—Dr. Kelsch, inspecting medical officer of the French army and member of the Paris Academy of Medicine.—Dr. Richard Stern, extraordinary professor of medicine and director of the Medical Department of the Polyclinic in Breslau. He refused the chair of medicine in the University of Greifswald. His chief work was "The Traumatic Origin of Internal Diseases." His death was due to influenza. He was 45 years of age.—Dr. Carl Parrot, an eminent Munich gynæcologist. He was a great authority on birds and was president of the Bavarian

Ornithological Society.—Dr. F. Fuchs, formerly extraordinary professor of electrotherapy in the University of Bonn.—Dr. Claude Martin of Lyons, corresponding member of the Paris Academy of Medicine.

# Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London on Jan. 26th, and of the Council of the Royal College of Surgeons of England on Feb. 9th, diplomas of L.R.C.P. and M.R.C.S. were conferred respectively on the following candidates (including one lady, Miss Pearl Jane Sproule, M.B., of Toronto University) who have passed the Final Examination in Medicine, Surgery, and Midwifery, of the Conjoint Examining Board in England, and have conformed to the bye-laws:—

Joseph Bamforth, Liverpool University; Albert Malcolm Barlow, London Hospital; Henry Cuthbert Bazett, B.A. Oxon., Oxford University and St. Thomas's Hospital; Thomas Beaton, University College, Cardiff, and Charing Cross Hospital; James Jamison Black, M.B., B.S. Melb., Melbourne University and Middlesex Hospital; William Percy Bonner, London Hospital; Thomas Rufus Bowen, University College, Cardiff, and London Hospital; George Francis Bradley, London Hospital; Thomas Wafer Byrne, Liverpool University; Wilfrid Thomas Chaning-Pearce, B.A. Cantab., Cambridge University and Guy's Hospital; Thomas Cock, Charing Cross Hospital; William Lewis Cowardin, St. Mary's Hospital; Heerajee Jehangir Manockjee Cursetjee, L.M.S. Bombay, Bombay and Cambridge Universities and London Hospital; Guy de Hoghton Dawson, Middlesex Hospital; Harold Dearden, B.A. Cantab., Cambridge and Manchester Universities and London Hospital; John Evan Dewar, M.D., C.M. McGill, McGill University, Middlesex Hospital, and Edinburgh; William James Edgar, St. Thomas's Hospital; Cyril Douglas Faulkner, St. Mary's Hospital; Hugo Flecker, M.B., Ch.M. Sydney, Sydney University and King's College Hospital; Arthur Duncan Gardner, B.A. Oxon., Oxford University and St. Thomas's Hospital; Alan Cecil Gemmell, M.A., LL.B. Cantab., Cambridge University and St. Thomas's Hospital; Leopold Sylvester Morrice Habich, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Alan Ashton Henderson, University College Hospital; Thomas Brooke Hickley, Westminster Hospital; Guy Reginald Hind, Guy's Hospital; Gwilym James, B.A. Cantab., Cambridge University and University College Hospital; Heber Carss Jamieson, M.B. Toronto, Toronto University and London Hospital; Arthur Carveth Johnson, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Thomas William James Johnson, M.B., Ch.B. Otago, Otago University and Middlesex Hospital; Robert Francis Jones, St. George's Hospital; George Arthur Edward Kelman, King's College and Westminster Hospital; Randal Young Kenny, M.B. Toronto, Toronto University, St. George's and St. Bartholomew's Hospitals; Charles Gordon Kirkpatrick, M.B. Toronto, Toronto University and Middlesex Hospital; William Balfour Laird, St. Thomas's Hospital; Harold Victor Lamb, Leeds University and Middlesex Hospital; Harold Drew Lander, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Peregrine Stephen Brackenbury Langton, Middlesex Hospital; Alexander Carson Clarke Lawrence, B.A. Cantab., Cambridge University and Middlesex Hospital; Basil Hugh Campbell Lea-Wilson, Cambridge University and St. Bartholomew's Hospital; Lewis Francis Gurslave Lewis, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Rhodes Liddell, Sheffield University; Samuel Marle, Bristol University; Octavius de Burgh Marsh, B.A. Cantab., Cambridge University and London Hospital; Ernest Percy Martin, St. Thomas's Hospital; Kalka Prasad Mathur, Punjab University and London Hospital; James William Edwin Mendis, L.M.S. Ceylon, Ceylon Medical College and Middlesex Hospital; John Morley, M.B., Ch.B. Manch., Manchester University; Michael Wellwood Morrison, Bristol University, Middlesex, St. Thomas's, and University College Hospitals; Nathan Mutch, B.A., B.C. Cantab., Cambridge University and Guy's Hospital; Alfred Philip Nicolle, London Hospital; Henry Locke Paddon, B.A. Oxon., Oxford University and St. Thomas's Hospital; Krishnan Gopinath Pandalai, M.B., M.S. Madras, Madras University and Middlesex Hospital; Hubert Charles George Pedler, University College Hospital; Cassius Affeleck Pereira, L.M.S. Ceylon, Ceylon Medical College and London Hospital; Albert Pfeiffer, L.D.S. Eng., Middlesex Hospital; Dudley Denham Pinnock, M.B., B.S. Melb., Melbourne University and Middlesex Hospital; James Powell, University College, Cardiff, and St. Mary's Hospital; Edward Prall, St. Thomas's Hospital; Thillustanum Sesha Soundara Rajan, Madras University and Middlesex Hospital; Henry Martin Rashbrook, London Hospital; William Alfred Reynolds, Bristol University; William Scarisbrick, B.Sc. Lond., Liverpool University; David Scurlock, St. Mary's Hospital; Francis Robert Bradley Skrimshire, St. Thomas's Hospital; Vere Edward Somerset, King's College Hospital; Pearl Jane Sproule (Miss), M.B. Toronto, Toronto University and Royal Free Hospital; Gerald Nicholson Stathers, Cambridge University and St. Bartholomew's Hospital; Berthold Somerville Taylor, M.A. Cantab., Cambridge University and St. George's Hospital; David Chester Thompson, M.D. Manitoba, Manitoba University and Middlesex Hospital; Alan Herapath Todd, B.Sc. Lond., Guy's Hospital; Stanley Van Someren Boyd, London Hospital; John Ernest Price Watts, Westminster Hospital; Frank Wells, St. Mary's Hospital; Esmond Tetley Willans, Cambridge and Leeds Universities; and Reginald Joseph Wooster, St. Mary's Hospital.

Diplomas in Public Health were conferred upon the following candidates (including two ladies, Miss C. A. King and Miss M. Thomson):—

Scott Campbell Adam, M.B., Ch.B. Glasg., Glasgow and Durham Universities; Claude John Eddowes Bennett, L.R.C.P., M.R.C.S., Westminster Hospital and King's College; Harold Boulton (Major I.M.S.), M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University, St. Bartholomew's Hospital, and Royal Army Medical College; Herbert Maughan Brown, M.D., Ch.B. Edin., Edinburgh University and Royal Institute of Public Health; Percy Norman Cave, M.B., B.Ch. Oxon., Oxford University, St. George's and St. Mary's Hospitals; Roderic Arthur Clapham, M.D., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; Alexander Dawson (Captain R.A.M.C.), M.B., Ch.B. Aberd., Aberdeen University and Royal Army Medical College; Kali Charan Dube, L.M.S. Punjab, Punjab University and University College; John Henry Jones, L.R.C.P., M.R.C.S., Guy's, Haslar, and King's College Hospitals; Charlotte Alice King (Miss), M.B., B.S. Lond., Royal Free and Middlesex Hospitals; James Fitzgerald Martin (Captain R.A.M.C.), M.B., Ch.B. Edin., Edinburgh University and Royal Army Medical College; Lawrence Pick, L.R.C.P., M.R.C.S., St. George's Hospital and Royal Institute of Public Health; Arthur Meurig Pryce, M.B., Ch.B. Edin., Edinburgh University and University College; Thomas Edwin Pryce, M.D., B.S. Lond., University College; Norman Emil Henry Scott (Captain I.M.S.), M.B., Ch.B. Glasg., Glasgow University and University College; Sidney Francis St. Germain Steadman, L.R.C.P., M.R.C.S., Charing Cross Hospital and University College; Sidney John Steward, M.D., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University, St. Thomas's Hospital, and University College; Charles Henry Straton (Captain R.A.M.C.), L.R.C.P., M.R.C.S., St. Mary's Hospital and Royal Army Medical College; May Thomson (Miss), L.R.C.P. & S. Edin., L.F.P. & S. Glasg., Edinburgh School of Medicine for Women; Sydney Arthur Tucker, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital and University College; and Charles Wilfred Vining, M.B., B.S. Lond., St. Mary's and St. George's Hospitals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The Council on Feb. 9th conferred the following diplomas upon the undermentioned gentlemen, who have now complied with the by-laws:—

*F.R.C.S.*—Charles Henry Shorney Webb., M.B., B.S. Lond., M.R.C.S. L.R.C.P., Middlesex Hospital.

*L.D.S.*—Herbert Ferris Barge, Guy's Hospital; George Frederick Fawn, Bristol University; and Gordon Johnson, Charing Cross and Royal Dental Hospitals.

APOTHECARIES' HALL OF IRELAND.—At the Final Examination held recently the following candidates were successful:—

*Midwifery.*—J. L. Bocarrow, L. N. Denslow, H. Hutchinson, F. Muller-Fonseca, and Mrs. M. Neary.

*Medicine.*—Miss M. L. Batho, J. L. Bocarrow, Miss A. M. Headwards, and J. B. O'Donoghue.

*Surgery.*—Miss M. L. Batho, J. L. Bocarrow, Miss G. Ghosh, Miss A. M. Headwards, H. Hutchinson, G. M. Mayberry, and F. Muller-Fonseca.

*Completed Examination.*—Miss M. L. Batho, J. L. Bocarrow, Miss G. Ghosh, Miss A. M. Headwards, G. M. Mayberry, and F. Muller-Fonseca.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, CITY-ROAD, E.C.—The Lord Mayor presided at this hospital on Feb. 9th at the annual general meeting of the governors. The report submitted and adopted referred to the provision during the past year of 11 new bedrooms for the accommodation of the nursing staff, and also to other alterations, including the erection of an outside fire-escape staircase. The income for the year had been £4642 and the expenditure £6972. There was therefore a very considerable need for an increase of contributions. King Edward's Fund had given £100 towards the ordinary work and £400 towards the structural alterations. It was felt that this was quite inadequate in view of the amount and value of the work done.

THE AFTER-CARE ASSOCIATION FOR THE RECOVERED INSANE.—The annual meeting of the After-Care Association for poor persons discharged recovered from asylums for the insane was held on Feb. 8th by the kind permission of Sir Victor and Lady Horsley, at 25, Cavendish-square, W., Mr. H. D. Greene, K.C., presiding over a large audience. The report, read by Mr. Roxby, stated that applications were received during 1910 on behalf of 379 cases, and the total income amounted to £1199 12*s.* 6*d.* The adoption of the report was moved by the Bishop of Barking, seconded by Dr. G. H. Savage, supported by the Master of the Temple and Dr. Robert Jones (Claybury Asylum). The re-election of vice-presidents, council, &c., was proposed by the Rev. H. R. Gamble, vicar of Holy Trinity, Chelsea, seconded by Dr. C. H. Bond (Long Grove Asylum) and supported by Dr. W. H. B. Stoddart (Bethlem Royal Hospital).

A vote of thanks to Sir Victor and Lady Horsley and to the chairman, proposed by Admiral de Courcy Hamilton and seconded by Dr. R. Percy Smith, to which the chairman suitably responded, terminated a most successful meeting.

ROYAL INSTITUTION OF GREAT BRITAIN.—The Friday evening discourse of Feb. 24th will be delivered by Professor Jean Perrin, at 9 o'clock at Albemarle-street, Piccadilly, W. The subject is Mouvement Brownien et Réalité Moléculaire (in French). On Tuesday, Feb. 21st, at 3 P.M., Dr. F. W. Mott, F.R.S., will deliver his sixth lecture on Heredity.

SURGICAL CONGRESS (BRUSSELS).—The Third Congress of the International Society of Surgery will take place at Brussels from Sept. 26th to 30th. The sessions of the society will be public, but only actual members will be able to take part in the discussions. Three main subjects will be considered—viz., Pleuro-pulmonary Surgery, reported by MM. Garré (Bonn), Gaudier (Lille), Girard (Geneva), Lenormand (Paris), Ferguson (Chicago), Van Stockum (Rotterdam), Sauerbruch (Marburg), Friedrich (Marburg); Colitis, reported by MM. Sonnenburg (Berlin), Segond (Paris), Gibson (New York), D'Arcy Power (London); Pancreatitis, reported by MM. Michel (Nancy), Korte (Berlin), Giordano (Venice). Full particulars may be obtained by addressing the Secretary-General of the Congress, M. le Professeur Depage, 75, Avenue Louise, Brussels.

DEATH OF MR. GERALD GEORGE HODGSON.—Deep regret was expressed at Brighton early in this month at the news of the death of Mr. Gerald George Hodgson, who, until a few years ago, was a well-known practitioner there. Latterly he had resided at Reigate, but did not have good health. He had been troubled with insomnia, and with the object of inducing sleep tired himself by taking a long walk to Hillingdon in Middlesex. Here he put up at a hotel and requested that he should not be called early. Next morning he was found dead, having succumbed to an overdose of morphine. At the inquest a verdict was returned that Mr. Hodgson died by misadventure. On the evening that Mr. Hodgson died his sister received a letter from him saying he was starting for Devonshire to recruit his health. Mr. Hodgson received his medical training at King's College Hospital and took the M.R.C.S. Eng. and L.S.A. diplomas in 1884.

THIRD INTERNATIONAL LARYNGO-RHINOLOGICAL CONGRESS, BERLIN.—This congress is announced to take place in Berlin from August 30th to Sept. 2nd under the presidency of Herr Geheimrat B. Fränkel. The following are the chief subjects for consideration: (1) The Relations of Experimental Phonetics to Laryngology, reported by Herr Gutzmann of Berlin and Herr Struyken of Breda; (2) Bronchoscopy and Œsophagoscopy, their Indications and Contra-indications, reported by Herr Killian of Freiburg, Herr Kahler of Vienna, and Dr. Jackson of Pittsburg; (3) The Lymphatic System of the Nose and of the Naso-pharynx, reported by Herr Broeckaert of Ghent, Sig. Poli of Genoa, and Mr. Logan Turner of Edinburgh; (4) The So-called Fibrous Naso-pharyngeal Polypus, reported by M. Jacques of Nancy and M. Hellat of St. Petersburg. Further particulars may be obtained from the secretary of the congress, Herr Professor Rosenberg, Schiffbauerdamm, 26, Berlin, N.W.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:* Mr. R. Cope, M.R.C.S. Eng., M.R.C.P. Lond., D.T.M. Liverp., medical officer, Gold Coast, has resigned his appointment; and Mr. E. J. Kelleher, L.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., medical officer, Southern Nigeria, has retired temporarily on pension. The following gentlemen have been selected for appointment to the staff: Mr. A. J. Smith, M.B., Ch.B. Birm., Mr. W. G. Watt, M.B., Ch.B. Aberd., Mr. J. Donnelly, M.B., B.Ch. R.U.I., Mr. H. F. Hamilton, M.B., Ch.B. Edin., D.T.M. Liverp., Mr. P. D. Oakley, M.R.C.S. Eng., L.R.C.P. Lond., D.T.M. Liverp., and Mr. W. A. Ryan, L.R.C.P., L.R.C.S. (Gold Coast); Mr. G. Rollason, L.M.S.S.A. Lond. (Sierra Leone); Mr. E. L. Sieger, M.B., Ch.B. Glasg., D.T.M. Liverp., Mr. A. Hipwell, L.R.C.S., L.R.C.P. Irel., D.P.H. Liverp., D.T.M. Liverp.; and Mr. L. H. Booth, M.R.C.S. Eng., L.R.C.P. Lond. (Southern Nigeria). *Other Colonies and Protectorates:* Mr. F. L. Boag, M.B., Ch.B. Vict., has been selected for appointment as medical officer in the Gilbert and Ellice Islands Protectorate, and Mr. G. C. M. Davies, L.S.A. Lond., L.R.C.P. Edin., has been selected for appointment as a medical officer in the British Solomon Islands Protectorate.

LONDON COUNTY COUNCIL.—The London County Council has decided to extend the period of compulsory notification of cerebro-spinal meningitis for a further period of 12 months from March 13th, 1911. The first notification order came into force on March 12th, 1907. The Public Health Committee stated that considerable attention had been given to this disease in recent years in the principal cities of Europe and America, and it was important that in London the continuity of statistical information should be preserved.

PRESENTATIONS TO MEDICAL MEN.—Mr. Augustus William Dalby, L.R.C.P., L.R.C.S. Edin., of Frome, Somerset, has been presented with a cheque for £300 by the inhabitants of that town as a mark of respect and esteem, on the occasion of his leaving the district through ill-health.—On Feb. 4th at Winsford Mr. George Francis Sydenham, M.R.C.S. Eng., L.S.A., was presented with a cheque for £120 towards the cost of the purchase of a motor-car, together with an illuminated address. The presentation was given in commemoration of Mr. Sydenham's fiftieth birthday, and of his 25 years' service as medical officer for the first district and workhouse of the Dulverton (Somerset) Union.

SCHOOL CHILDREN'S HEALTH.—In his annual report Dr. J. W. Talent, the medical officer to the Ashton-under-Lyne education committee, gives some interesting information respecting the health of the elementary school children. During the year 2990 children were examined, of whom 592 suffered from various defects. At five years of age 40 per cent. had perfectly sound teeth, but there was a grievous falling off in the next few years, for at the age of 12 only 6 per cent. of the children had sound teeth. No doubt the quality of the food they are brought up on is one of the chief causes of this serious defect. Then, too, as to height and weight, these children of our factory system were found decidedly below normal. It should be noted, moreover, that this state of things existed, although nearly 60,000 free meals were provided at the school canteen for 800 children, at an average cost of 1·62 of a penny.

## BOOKS, ETC., RECEIVED.

LEWIS, H. K., London.
The Practitioner's Medical Dictionary. Based on Recent Medical Literature. By George M. Gould, A.M., M.D. Second edition. Illustrated. 1911. Price 18*s.* net.

SCHMATOLLA, OTTO, Xantenerstrasse, 9, Berlin-Wilmersdorf.
Um Wahrheit und Recht. I. Serfe. Schattenbilder aus der Arzneimittel-Industrie. Von Otto Schmatolla, Apotheker. Price not stated.

SPRINGER, JULIUS, Berlin.
Die Therapie der Syphilis. Ihre Entwicklung und ihr gegenwärtiger Stand. Von Dr. Paul Mulzer in Berlin. Mit einem Vorwort von Geh. Reg.-Rat Prof. Dr. P. Uhlenhuth. Price, paper, M.2.80; bound, M.3.60.

STAUDE, ELWIN (Inh. ERICH STAUDE), Steglitzerstrasse, 11, Berlin. W. 35.
Annalen für das gesamte Hebammenwesen des In- und Auslandes, Band I. Heft 4. Jahrgang, 1910. Preis für den Jahresband (4 Hefte), M.10.

STEINKOPFF, THEODOR, Verlag von, Dresden.
Hereditäre Syphilis, deren Prophylaxe und Therapie. Von Professor Alfred Fournier, Mitglied der Académie de Médecine (Paris). Autorisierte Deutsche Übersetzung. Von Dr. Med. Edgar Neumann (Wien). Mit. 18 Abbildungen und einem Nachwort über Ehrlich-Hata, 606. Price M.2.50.

SWAN SONNENSCHEIN AND CO., LIMITED, London.
The Ethical Library. Darwin and the Humanities. By James Mark Baldwin, D.Sc., LL.D. Second edition. Price 3*s.*

SWEDENBORG SOCIETY, 1, Bloomsbury-street, London.
Transactions of the International Swedenborg Congress held in Connection with the Celebration of the Swedenborg Society's Centenary, London, July 4th to 8th, 1910. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.
Golden Rules of Ophthalmic Practice. By Gustavus Hartridge, F.R.C.S. Fifth Edition. Price 1*s.*
Golden Rules for Diseases of Infants and Children. By George Carpenter, M.D. Fourth edition. Revised and partly rewritten by E. Bellingham Smith, M.D., B.S. Price 1*s.*

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*The New Parliament.*

THE new Parliament assembled on Jan. 31st, but certain time-honoured formalities had to be transacted before it could proceed with the business of the session. The Speaker had to be elected by the House of Commons and the oath had to be administered to Members. Then came the gracious speech from the Throne outlining the principal measures which the Government intends to submit to Parliament during the session. The motion for an address in reply to His Majesty's speech has afforded to the House of Commons the usual opportunity to pass in review the policy of the Cabinet. For these matters three weeks of Parliamentary time have been required. All the indications point to a session in large part devoted to the discussion of the controversial issues which have agitated recently the political life of the country. The Government will take for its business the time usually allotted to private members up to Easter. This will preclude the advancement in the early period of the session of all Bills not introduced by Ministers. Another effect of the Parliamentary situation may be to delay the introduction of departmental measures which have been expected for a long time. If any of them are introduced it is unlikely that reasonably rapid progress will be made with them.

*Departmental Reports.*

During the first few days of the session several reports of a departmental or statutory character have been presented to Parliament. The report on the work of the Central Midwives Board for the year ended March 31st, 1910, has been laid on the table of the House of Lords. A copy of the seventy-second Annual Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales has been presented to the House of Commons. The ordinances of the Universities of Edinburgh and Glasgow in regard to the regulations for degrees in medicine have also been laid in compliance with statute. The Order made by the Local Government Board for Ireland agreeing to the institution of the office of dental surgeon to the workhouse of the Belfast Union has been notified in a similar manner.

*Asylum Officers (Employment, Pensions and Superannuation) Bill.*

A Bill "to limit the hours of employment of officers and servants in asylums, and to amend the Asylum Officers' Superannuation Act," has been introduced into the House of Commons by Viscount WOLMER and read a first time. In bringing it forward he has the support of Mr. SWIFT, Mr. KESWICK, Mr. POLLOCK, and Major STANLEY.

## HOUSE OF COMMONS.

WEDNESDAY, FEB. 8TH.

*The Use of Ehrlich's Preparation in the Army.*

Mr. GOLDMAN asked the Secretary of State for War whether the attention of the War Office had been drawn to the cures effected by the use of Professor Ehrlich's preparation "606"; and whether any steps had been taken to employ this preparation in suitable cases in the British army at home and abroad.—Mr. HALDANE forwarded the following written answer: Yes, sir. If the hon. Member will kindly refer to the *Journal of the Army Medical Corps* for November, 1910, and February, 1911, he will find accounts of cases in which the remedy has been tried.

THURSDAY, FEB. 9TH.

*The Irish Poor Law.*

Mr. LONSDALE asked the Chief Secretary to the Lord Lieutenant for Ireland when he intended to introduce his promised measure for the reform of the Irish Poor-law.—Mr. BIRRELL replied: I am afraid there is no chance of my introducing any such measure this session.

*Irish Butter Legislation.*

Mr. H. BARRIE asked the Chief Secretary to the Lord Lieutenant for Ireland when it was proposed to introduce the Butter Bill promoted by the Agricultural and Technical Department.—Mr. BIRRELL said in reply: I am afraid that there will be no room for a Butter Bill in this session.

*Irish Medical Practitioners and the Motor Spirit Duty.*

Mr. GINNELL asked the Secretary to the Treasury why the rebate of motor spirit duty to which medical practitioners were entitled under the Finance (1909-10) Act, 1910, had not yet been paid in Ireland in respect of 1909 or 1910 in cases in which the claim had been duly made, accompanied by vouchers; whether to entitle them to the rebate medical practitioners were required to prove that manufacturer and dealer had also paid the duty, and furnished with power to obtain this information; and when would the rebate due in respect of the last two years be paid to those gentlemen.—Mr. HOBHOUSE replied: If the honourable gentleman will furnish the Commissioners of Customs and Excise with the names and addresses of any medical practitioners in Ireland who have claimed but have not been paid the rebate inquiry will be made into the circumstances in each instance. Medical practitioners and other claimants for rebate are not required to prove that manufacturers of and dealers in motor spirit have paid the duty. The inquiries as to the validity of the vouchers or certificates attached to the claims are made by officers of Customs and Excise.

MONDAY, FEB. 13TH.

*The Plague and Chinese Pork.*

Mr. FELL asked the President of the Local Government Board whether during the continuance of the virulent plague in China he could totally prohibit the introduction of Chinese pork into this country, having regard to the reports of the disposal of the dead bodies there and the reported habits of the Chinese pigs.—Mr. BURNS replied: The districts in China which are affected with plague are remote from the districts from which pigs have been imported to this country. No circumstances have arisen necessitating the taking of other measures than those of adequate inspection of imported meat, and this is in operation.

*Imports of Chinese Pork.*

Mr. FELL asked the President of the Local Government Board whether the shipments of Chinese pork were increasing to this country; whether over 24,000 carcasses arrived at Liverpool from China last year; whether every one of these carcasses was examined; and how many were passed as free from disease and how many were rejected.—Mr. BURNS answered: Fewer carcasses were imported during 1909 than during 1910, but, as the importations of Chinese pork did not commence until July of the former year, I should hesitate to say whether the shipments are increasing. I understand that 23,246 carcasses were received at Liverpool during last year, and that the whole of these were examined. Of this number 343 were condemned on account of unsoundness which developed in transit and 352 on account of disease or abnormal condition.

*The Poisons and Pharmacy Act.*

Captain CRAIG asked the Secretary of State for the Home Department whether by-laws had yet been made by the Pharmaceutical Society under the Poisons and Pharmacy Act, 1908, Section 4 (b).—Mr. CHURCHILL replied: I am informed that before formulating any by-laws under Section 4 (b) of the Poisons and Pharmacy Act, 1908, the Pharmaceutical Society of Great Britain has to dispose of certain preliminary questions connected with the educational curriculum of pharmaceutical chemists and of chemists and druggists, and that the society is now actively engaged on these questions.

*European Medical Men in the Plague Area.*

Mr. ALLAN BAKER asked the Under-Secretary of State for Foreign Affairs whether he could say what precautions were being taken by the Chinese Government to ensure the safety of European medical men working in the plague district of Harbin.—Mr. MCKINNON WOOD wrote in reply: His Majesty's Minister at Pekin reports that all the medical men have been inoculated with Haffkine's vaccine. They are comfortably installed in a railway car, with the exception of one who is living with the British Consul. The Chinese Government has done its utmost for the personal comfort of the medical men, whose private letters show appreciation of their considerate treatment. They wear masks, oilskin boots, and complete overalls when dealing with cases of plague. The French doctor, Mesny, who was not inoculated, became infected owing to a patient coughing in his face while examining him unmasked. Dr. Jackson, the British medical man, died after continuous hard work among a crowd of infected coolies. It is believed that he was too exhausted to maintain proper precautions. The heroism of the doctors, Sir John Jordan reports, is beyond praise.

*The Medical Inspection of School Children.*

In the course of the debate on the Address when an amendment having reference to the burdens on local rates was under discussion,

Mr. RUNCIMAN (President of the Board of Education) said: I come to the purely administrative case in which the Government is charged with having been unjust to the Local Government ratepayers. As to the Act passed for the feeding of school children, I think it will be agreed, except by a very small majority, that it has not imposed a very heavy burden. The Act providing for the medical inspection of school children has no doubt involved London in a very large expenditure. We have been overhauling the method by which the London County Council has provided for the medical inspection of school children, and we could not pronounce it efficient. When an honourable Member refers to this medical treatment and suggests that we have tried to convert what is an optional into a compulsory measure, I reply that we have done nothing of the kind. We have made it perfectly clear that the Act is optional and that we are only carrying out our statutory duty to see that the arrangements which are made are sanctioned by the Board of Education. We cannot sanction schemes of medical treatment which are not efficient and do not cover the ground, but in many cases leave the whole question of the medical inspection of school children in a worse position for the future than it has been in the past.

TUESDAY, FEB. 14TH.

*The Adulteration of Bread.*

Mr. BOTTOMLEY asked the President of the Local Government Board whether his attention had been called to the adulteration of bread by means of the treatment of flour with acid phosphate of calcium, derived from the action of sulphuric acid on bones; and, if so, whether he would consider the desirableness of taking measures to stop the practice.—Mr. BURNS replied: My attention has been called to this matter and some time ago I directed an inquiry to be made regarding it. The report on this inquiry is now in preparation.

Mr. GOLDMAN asked whether in the light of the recent agitation for a standard in bread he proposed any legislative standards for bread and other foodstuffs.—Mr. BURNS said in reply: The question of the comparative nutritive values of bread made from various classes of flour is now being investigated by the Foods Department of the Local Government Board, and at present I am not prepared to express an opinion on the question of standards.

*Rats and the Plague.*

Captain CLAY asked the President of the Local Government Board whether the Government was prepared to introduce legislation authorising local authorities to take such measures as might be necessary within their area for the destruction of rats in order to minimise the danger of an epidemic of plague.—Mr. BURNS answered: In November of last year I issued an Order directing the local authority of any district in which rats were infected or threatened with plague, or in which there was an unusual mortality among rats, to take measures for the destruction of rats and for preventing their entrance into buildings. Further legislation for this purpose does not at present appear to be required.

*Milk Legislation.*

Mr. GOLDMAN asked the President of the Local Government Board whether the Government proposed to introduce the Dairies Bill this session as a first-class measure.—Mr. BURNS replied: I am not at present in a position to make any announcement on this subject.

WEDNESDAY, FEB. 15TH.

*The Ingredients of Patent Medicines.*

Mr. STEPHEN COLLINS asked the Secretary of State for the Home Department whether he was prepared to give effect to the view

favoured by his predecessor at the Home Office and appoint a Select Committee to consider the advisability of issuing regulations making it compulsory upon all manufacturers of medicines liable to patent medicine duty to print on the label of the bottle or other vessel in which such was sold the full ingredients of such bottles or vessels, as well as the diseases which they purported to cure.—Mr. CHURCHILL wrote in reply: I am making inquiries and will inform my honourable friend in due course.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

AWDRY, ARTHUR JOHN, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the Berkeley (Gloucestershire) Hospital.

AWDRY, WALTER ROBERT, M.B. Durh., M.R.C.S., has been appointed Honorary Medical Officer to the Berkeley (Gloucestershire) Hospital.

BANKS, J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dunoon District of the county of Argyll.

BRODRICK, CHARLES CUMBERLAND, L.R.C.P., L.R.C.S., L.M. Edin., has been appointed Medical Officer for the Whitchurch and South Lydford District of the Tavistock (Devon) Board of Guardians.

BURNET, ROBERT, M.Sc., M.B., B.Ch. Vict., M.Sc., M.B., B.Ch. Liverp., D.P.H. Birm., has been appointed Medical Officer of Health for the County of Cornwall.

BYWATER, E. F. W., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for Withington, Manchester.

COOPER, CHARLES EDWARD, M.B., B.C. Cantab., has been appointed Medical Officer of Health for the Ivybridge (Devon) Urban District Council.

DOWSETT, ERNEST B., M.R.C.S., L.R.C.P. Lond., L.D.S., has been appointed Assistant Dental Surgeon to Guy's Hospital.

GARMAN, W. C., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wednesbury District of the county of Stafford.

HALL, I. WALKER, M.D. Vict., Professor of Pathology in the University of Bristol, has been appointed External Examiner in that subject at the University of Manchester.

MOISER, L. H., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Crediton District of the county of Devon.

PATTISON, C. R. M., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ballyward District of the county of Down.

PEARCE, FRANK J., L.D.S. R.C.S., has been appointed Assistant Dental Surgeon to Guy's Hospital.

RUTHERFOORD, H. E., M.D., B.Ch. Dub., has been appointed Honorary Assistant Physician to the Chester General Infirmary.

WATSON, ANNE M., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Morningfield Hospital, Aberdeen.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ASHTON-UNDER-LYNE UNION WORKHOUSE.—Assistant Medical Officer. Salary £150 per annum, with rations, laundry, and residence.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £90 per annum, with apartments, board, and attendance.

BOOTLE BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and laundry.

BRISTOL, UNIVERSITY OF.—Demonstrator of Physiology. Salary £180 per annum.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

CLAPHAM MATERNITY HOSPITAL, Jeffreys-road.—Two House Surgeons (females) for six months.

CROYDON, COUNTY BOROUGH OF.—Assistant Medical Officer. Salary £250 per annum.

DUMFRIES, COUNTY AND BURGHS OF.—Medical Assistant to Medical Officer of Health and School Medical Officer. Salary £250 per annum.

EDINBURGH ROYAL INFIRMARY.—Superintendent. Salary £600 per annum, with house, coal, and light.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Physician for six months. Salary at rate of £60 per annum, with board, residence, and washing.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, fire, &c. Also Honorary Dental Surgeon.

GATESHEAD UNION WORKHOUSE.—Resident Medical Officer. Salary £250 per annum, with apartments, rations, and washing.

GLOUCESTER COUNTY ASYLUMS, Wotton, Gloucester.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, board, washing, &c.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITALS.—Surgeon to Out-patients.

HORNSEY, BOROUGH OF.—Assistant Medical Officer of Health, Assistant to Medical Superintendent of Borough Isolation Hospital, and Assistant School Medical Officer, unmarried. Salary £225 a year, with rooms and board.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Anæsthetist. Salary £15 15s. per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Vacancy on Honorary Medical Staff.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Three House Surgeons for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Surgeons and Two House Physicians for six months. Salary at rate of £60 per annum, with board and residence.

LLANYBYTHER, CARMARTHENSHIRE, WEST WALES SANATORIUM.—Medical Superintendent. Salary £250 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, near Manchester.—Resident Medical Officer, unmarried. Salary £90 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST, Hardman-street.—Assistant Medical Officer and Pathologist. Salary £60 per annum.

MANCHESTER ROYAL INFIRMARY.—House Physicians and House Surgeons, unmarried, for six months. Board and residence provided.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician and Two House Surgeons. Salaries at rate of £60 per annum. Also Assistant House Physician, and Two Assistant House Surgeons. Salaries at rate of £40 per annum. Board and washing in each case. All for six months.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Lecturer on Public Health.

NEW HOSPITAL FOR WOMEN, Euston-road.—Senior Assistant (female) in Out-patient Department.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, and attendance.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Honorary Anæsthetist.

RANSOM SANATORIUM FOR CONSUMPTIVES, Sherwood Forest, near Mansfield, Notts.—Resident Medical Officer (female). Salary £100 per annum, with board, residence, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board and washing.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Anatomy. Salary at rate of £350 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence, attendance, and midwifery fees.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

SHREWSBURY, SALOP INFIRMARY.—House Physician. Salary at rate of £70 per annum, with board and apartments.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

TOWER HAMLETS DISPENSARY, Whitehorse-street, Stepney, E.—Resident Medical Officer. Salary £100 per annum, with apartments, washing, light, and attendance.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £140 per annum, with apartments, board, washing, and attendance.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Glasgow, in the county of Lanark.

# Births, Marriages, and Deaths.

## BIRTHS.

BEATH.—On Feb. 7th, at Barnard House, Bath, the wife of David Leslie Beath, M.R.C.S., L.R.C.P., of a daughter.

CARMODY.—On Feb. 8th, at "Mayaro," Tilehurst, Berks, the wife of Ernest P. Carmody, M.R.C.S., L.R.C.P., of a son.

DRUITT.—On Feb. 10th, at Parkfields, Alvaston, the wife of Claud Francis Druitt, M.R.C.S., L.R.C.P., of a daughter.

## DEATHS.

CRAWFORD.—On Feb. 7th, at 40, Rodney-street, Liverpool, in his 75th year, Joseph Dawson Crawford, M.D., F.R.C.S. Edin., formerly Senior Surgeon to the Liverpool Hospital for Cancer and Skin Diseases. Interred at Smithdown-road Cemetery, Liverpool, on Feb. 11th. (Friends will kindly accept this, the only, intimation.)

HORLEY.—On Feb. 7th, at St. Catherine's-terrace, Hove, William Lewis Horley, M.R.C.S., L.S.A., in his 85th year.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## ENCEINTE.

*To the Editor of* THE LANCET.

SIR,—In reply to Dr. Cordes, I quite recognise that we must always hold in due reverence the opinions of established authorities, but at the same time it is possible while doing so to retain a certain amount of healthy doubt about some of their rulings, otherwise errors and imperfections would remain and advance be rendered impossible. There have been many disputed etymologies, and what passed muster a century ago in this respect will not do so to-day always. Ménage died in 1692, which is a long time ago. Scheler only died in 1890. Littré died in 1881, and was succeeded by Brachet, whose work is well known and highly appreciated. Of the old etymologists it could be said of more than one of their explanations, "*Se non è vero, è ben trovato.*" Dr. Meissner, in his "Philology of the French Language," said that Ménage deliberately invented certain words which never existed in order to explain some of his etymology. I will cite Bescherelle upon the word "*Enceindre.*" He says, "étymologie, lat., in, *dans*; cingere, *ceindre, entourer*," and he says that "Enceint, enceinte," are "part. pass. du verbe Enceindre. S'empl. adjectiv. Entouré," and immediately following he gives as an example "*Femme enceinte.*" The past participle cannot surely differ in etymology from the infinitive of the verb. Bescherelle did not have a high opinion of some of the authorities quoted by Dr. Cordes, which fact he states in his preface. It will be noted that Bescherelle considered the Latin "In" in this connexion to mean "Dans." The example usually given of the opposite is the French word "ennemi" from the Latin *inimicus*, but "en" in French nearly always means "in" or "away." The latter sense is seen in "envoyer" from old French "entvoyer," Low Latin, *inde-viare*. The privative Latin "In" is nearly always "In" in French.

The Latin had the following words for "ungirt" or "loosely attired"—viz., "Discinctus" and "Recinctus." From the first named was derived the French "Dessanglé," meaning "ungirt." The English language also has "Ingirt" and "Engirt," but we do not accept the prefixes "in" and "en" as being privative. We use the word "Ungirt," the "Un" being the strong privative prefix used with participles.

Regarding the objection by Dr. Cordes that "it is not the lady who is cloistered but the child," I purposely said in my previous letter, "If we had retained and *shortened* the old expression." To illustrate this better I will quote the following expression from Spenser's "Faerie Queene," viz., "Me then he left enwombed of this child." In oblique narration, "She was then left enwombed of that child by him," and as cloister was a synonym for "womb" it could have been said, "She was then left encloistered" (or "cloistered"), the words "of the child" being understood. These old expressions are sometimes puzzling. For instance, the expression "she was delivered of a child" could be taken in two senses, but one is guided by common knowledge in interpreting what is meant. There is a striking line in the Bible which says, "A woman shall compass a man" ("encompass" in the Revised Version). This is stated by authorities to mean, "A virgin shall conceive a male child." The word compass here is surely used in the sense of "*entourer*," to enclose, or surround. The French is "La femme environnera l'homme" and the Spanish "El hembra rodeará al varon." There is a Spanish word for pregnant which is significant. It is "embarazada" which also means "embarrassed," i.e., "barred in." The ultimate authority of several French etymologists for "incincta" is Isidore of Seville (or Isidorus Hispalensis) who died in 636 A.D. It would not be difficult to make out a plausible case for "in sinus" or "insinuatus." The word "sein" in French is derived from sinus, and there is an obsolete law term "enseint" meaning pregnant.

The following first three stanzas of "Childe Waters," from Percy's Reliques of Ancient English Poetry, may be of interest:—

> "Childe Waters in his stable stoode,
> And stroakt his milke-white steede;
> To him a fayre yonge ladye came
> As ever ware woman's weede.
>
> Sayes, Christ you save, good Childe Waters;
> Sayes, Christ you save, and see:
> My girdle of gold that was too longe,
> Is now too short for mee.
>
> And all is with one chyld of yours,
> I feele sturre att my side:
> My gowne of greene it is too straighte;
> Before, it was too wide."

The lady, I take it, has not abandoned her girdle, but in the circumstances would have liked it rather longer.

I am, Sir, yours faithfully,

Feb. 11th, 1911. BLANCUS.

## A NEW PRIMARY BATTERY.

WE have recently had an opportunity of testing the Silvertown Bleeck-Love primary battery and the results were quite satisfactory. It is a two-fluid cell consisting of a porous pot holding the excitant and zinc and an outer vessel of glass or other material containing the depolariser in which the negative plate—a perforated carbon cylinder—is immersed. The obvious advantages of the cell are that it has a remarkably high E.M.F., low internal resistance, great current capacity, and, as we ourselves have found, a constant and steady output. The zinc consumption is small. Two cells on one charge will, it is stated, run a 7-inch fan for 36 hours, or a 4-volt 4-c.p. lamp for 18 hours, or will charge a 20-ampère-hour 4-volt accumulator in 16 hours. The number of applications to which this cell may usefully be put barely needs pointing out, but mention may be made in these columns of X ray and surgical work. The cell was submitted to us by the Indiarubber, Gutta Percha, and Telegraph Works Company, Limited, of Silvertown and 106, Cannon-street, London, E.C.

## "MERCK'S INDEX."

THE third edition of "Merck's Index" has been published, and copies may be obtained at the London office, 16, Jewry-street, E.C. It is a wide and comprehensive work of reference on materia medica, pharmacology, and pharmacy, and the subject-matter is brought into line with the advances made up to the end of May, 1910.

## "ROUNDED-OFF" ATOMIC WEIGHTS.

THE atomic weights of elements employed in the pharmacopœias of different nations show considerable variation in magnitude, particularly with regard to the first, second, and third place of decimals. In the opinion of Mr. W. H. Martindale, Ph.D., who read a paper on the subject at an evening meeting of the Pharmaceutical Society on Feb. 7th, it might be better to do away with the decimal proportions, excepting perhaps in the case of chlorine, copper, and st[illegible]ntium. Such a series of rounded-off figures would be sufficiently accurate for pharmaceutical work, and Mr. Martindale suggests that the matter might be considered in connexion with the revision of the British Pharmacopœia.

*E. T.*—A paraffin stove which gives off an offensive fume or smell is obviously a source of disturbance to the health.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for February, March, and April, 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
" 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
" 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.

**The following journals, magazines, &c., have been received:**—The Selborne Magazine, Il Morgagni, Rivista Ospedaliera, La Presse Médicale d'Egypte, Pioneer Mail, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Le Progrès Médical, Archives de Médecine et de Pharmacie Militaires, Indian Public Health, Transactions of the Society of Tropical Medicine and Hygiene, Indian Medical Gazette, Indian Engineering, Archives of the Roentgen Ray, Gazette Médicale de Paris, The Middlesex Hospital Journal, Liverpool Medico-Chirurgical Journal, Review of Neurology and Psychiatry, Philippine Journal of Science, Die Therapie der Gegenwart, La Semana Medica, Bulletin de l'Académie de Médecine, The Clinical Journal, St. George's Hospital Gazette, National Health, Journal of Laryngology, Rhinology, and Otology, American Journal of Medical Sciences, Detroit Medical Journal, Archives of Internal Medicine, Engineer, Scientific American, Tuberculosis, La Presse Médicale Belge, Gazzetta degli Ospedali, Gazette des Sciences Médicales de Bordeaux, Revue de Médecine, Revue de Chirurgie, La Clinique Ophtalmologique, Bulletins et Mémoires de la Société de Radiologie Médicale de Paris, Paris Médical, Revue Française de Médecine et Chirurgie, Monthly Cyclopædia, Allgemeine Medizinische Central-Zeitung, Cadiz Medico, International Journal of Surgery, L'Hygiene de la Viande et du Lait, La Policlinique, The Public Health Journal of Canada, The Official Gazette of the United States Patent Office,

Journal of the Royal Institute of Public Health, Local Government Chronicle, Midland Medical Journal, Maryland Medical Journal, The Cleveland Medical Journal, The Boston Medical and Surgical Journal, New York Medical Journal, Journal of the American Medical Association, Army and Navy Gazette.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Dr. A. P. Beddard: Some Points in the Treatment of Lobar Pneumonia.

Mr. F. R. Smyth: The Use of Local Anæsthetics in the Mouth.

(Members of the Odontological Section and Section of Anæsthetics are invited to take part in the Discussion.)

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham): at 8.30 P.M.

Dr. A. G. Levy: Asphyxia under Chloroform.

Dr. B. H. Wedd: Multiple Submucous Tumours in the Small Intestine associated with Carcinoma of the Larynx.

Mr. S. G. Shattock: Lamarckism and Callosities.

Dr. A. E. Boycott: Uterine Tumours in Rabbits.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

*Cases and Specimens:*

Dr. Bellingham Smith: Spasmus Nutans.

Dr. Porter Parkinson: Congenital Dilatation of the Colon.

Dr. A. W. G. Woodforde: Delayed Chloroform Poisoning.

And other Cases.

*Paper:*

Mr. Sydney Stephenson: Oculomotor Type of Polioencephalitis.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

*Paper:*

Dr. W. G. Savage: Diseases of the Cow (excluding Tuberculosis) Affecting the Milk in their Relationship to Human Disease.

### ANNOUNCEMENTS.

ODONTOLOGICAL SECTION:—At the next Meeting on Monday, Feb. 27th, at 8 P.M.

*Paper:*

Mr. A. H. Johnson and Mr. A. Hopewell Smith: A Case of Multiple Supernumerary Teeth preceding a Central Incisor.

*Casual Communications:*

Mr. T. Stordy: Absorption of a Permanent Molar Due to an Unerupted Premolar.

Mr. W. de C. Prideaux: (1) Three Cases of Torus Palatinus; (2) Skull from a Barrow showing somewhat Symmetrical Mandibular Exostoses.

NEUROLOGICAL SECTION:—The next Meeting of this Section has been adjourned until Thursday, March 2nd, and will be held at the National Hospital, Queen-square.

GENERAL MEETING OF FELLOWS, Friday, March 10th, at 4.45 P.M. Candidates for Fellowship. The following will be Balloted for:—

Arthur Henry Burgess, F.R.C.S., M.B., Ch.B., L.R.C.P.; Arthur Edmund Carver, M.D., M.R.C.P.; Eleanor Davies-Colley, M.D., B.S.; William James Foster, F.R.C.S., L.R.C.P.; Harold Delf Gillies, F.R.C.S.; Philip Maynard Heath, M.S., F.R.C.S.; Ludwig Witold Rajchman, M.D.; Henry Francis Arthur Steele, M.R.C.S., L.S.A.; John O. Symes, M.D., D.P.H., M.R.C.S., L.R.C.P.; George Bertram Wainwright, M.B., B.C., M.R.C.S., L.R.C.P.

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MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Lettsomian Lecture:—Mr. W. F. Haslam: A Review of the Operations for Stone in the Male Bladder. (Lecture II.)

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Mr. L. H. Guest: The Administration of the Law relating to the Medical Inspection and Treatment of School Children.

ROYAL STATISTICAL SOCIETY, Rooms of the Royal Society of Arts, John Street, Adelphi, W.C.

TUESDAY.—5 P.M., Mr. M. Greenwood, jun., and Mr. R. H. Candy: The Fatality of Fractures of the Lower Extremity and of Lobar Pneumonia. A Study of Hospital Mortality Rates, 1751-1901.

HUNTERIAN SOCIETY, The Library, St. Bartholomew's Hospital.

WEDNESDAY.—4 P.M., Clinical Afternoon.

CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.

THURSDAY.—7.30 P.M., Discussion:—Should Games be Organised? (In favour: Miss M. E. Nuth. Against: Dr. T. H. Hayward.)

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.**

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: The Fossil Remains of Man and their Bearing on the Origin of Modern British Types (illustrated by means of the epidiascope). (Hunterian Lecture.)

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M., Lecture:—Dr. H. D. Rolleston: Some Aspects of Lymphadenoma.

TUESDAY.—4 P.M., Dr. J. J. Perkins: Clinique (Medical). 5.15 P.M., Lecture:—Mr. A. Edmunds: The Surgical Treatment of Tumours of the Breast.

WEDNESDAY.—4 P.M., Mr. F. C. Wallis: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. W. H. Kelson: Some Common Affections of the Ear (illustrative cases).

THURSDAY.—4 P.M., Dr. T. Thompson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. W. Hill: Demonstration of a New Method, combining Direct and Indirect Gastroscopy.

FRIDAY.—4 P.M., Mr. E. Clarke: Clinique (Eye).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Etherington-Smith: Clinical (Lecture II.).

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Practical Medicine.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: Oral Conditions in their Relation to General Conditions of Health or Disease.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery (Lecture V.).

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. R. Lloyd: Anæsthetics.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Prof. Hewlett: Recent Researches on the Micro-organisms of Certain Diseases.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. H. Curtis: On Gummata.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Palpitation.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. B. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. R. M. Leslie: Enteroptosis and its Treatment.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture-Demonstration:—Dr. Hadfield: Anæsthetics.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Sir Victor Horsley: Surgery of the Nervous System.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. A. Turner: Peripheral Neuritis.

**CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.**

TUESDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Method of Examination.

FRIDAY.—3.45 P.M., Lecture:—Dr. D. Grant: Some Appliances of Use to the Practitioner in Diseases of the Throat, Nose, and Ear.

**HOSPITAL FOR SICK CHILDREN** (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Affections of the Middle Ear and Mastoid Complications. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Demonstration—Dr. Frew: Pathological

FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L Addison: General Surgical Diseases—Respiratory System, Foreign Body, Laryngeal Obstruction, Empyema. (Special Post-Graduate Course.)

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN**, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Solution of the Confusion between Pityriasis Rubra Pilaris and Lichen and the Treatment of Each.

**HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST**, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. S. Melville: Some Points on the Radiography of the Chest.

**ANCOATS HOSPITAL**, Manchester.

THURSDAY.—4.15 P.M., Dr. J. K. S. Bythell: Screen Examination of Chest Cases. (Post-Graduate Clinic.)

## OPERATIONS.

METROPOLITAN HOSPITALS.

**MONDAY** (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY** (25th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 15th, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Feb. 9 | 30·48 | S. | ... | 45 | 40 | 38 | 35 | 38 | Fine |
| ,, 10 | 30·03 | S.E. | ... | 62 | 43 | 32 | 32 | 33 | Fine |
| ,, 11 | 30·06 | W. | 0·13 | 69 | 46 | 33 | 37 | 38 | Cloudy |
| ,, 12 | 30·30 | W. | ... | 63 | 45 | 31 | 31 | 35 | Cloudy |
| ,, 13 | 30·47 | S.W. | ... | 50 | 46 | 35 | 39 | 40 | Foggy |
| ,, 14 | 30·52 | S.W. | ... | 70 | 47 | 35 | 35 | 36 | Fine |
| ,, 15 | 30·43 | W. | 0·09 | 81 | 49 | 36 | 44 | 45 | Overcast |

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# Hunterian Lecture

ON

# THE IMMUNITY REACTION IN DIAGNOSIS, ESPECIALLY OF TUBERCULOSIS AND SYPHILIS.

*Delivered in the Theatre of the Royal College of Surgeons of England on Feb. 6th and 8th, 1911,*

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## LECTURE I.

*Delivered on Feb. 6th.*

## TUBERCULOSIS.

MR. PRESIDENT AND GENTLEMEN,—By the term "immunity reaction" I refer to the series of specific changes that occur when any infective agent attacks the living body. These are complex in the extreme, and differ greatly in the different diseases: the processes which take place in the tissues and in the blood as a reaction against the tubercle bacillus are quite different from those which are caused by the typhoid bacillus. The methods by which the various infections are combated differ very greatly, and this is a fact that we must never lose sight of in dealing with the problems of immunity and vaccine or serum treatment.

### HYPERSENSITIVENESS AND IMMUNITY.

We have now realised that the process of cure of an infective disease involves two apparently opposed factors: on the one hand, an increase in the defensive forces, so that the body tends to become immune; and, on the other, a specific raising of the sensitiveness of the body to the microbe or its toxin, so that it tends to become *less* immune. The latter process, though it is not always easily recognised, appears to be an essential precursor or accompaniment of the first. It is called anaphylaxis (i.e., the opposite of prophylaxis), and its clearest illustration is seen in one of the diseases I am discussing in these lectures—tuberculosis. The first effect of a tuberculous lesion is to raise the susceptibility of all parts of the body to the tuberculous toxin. Indeed, this substance—tuberculin—is practically without action on a normal person; it is only when he is sensitised by a previous dose or doses that it becomes a real toxin. It would appear that this is a process in the highest degree disadvantageous to the patient, and so it is: the tuberculous fever, when not due to secondary infections, is apparently entirely an anaphylactic reaction to doses of tuberculin too small to have any action on a healthy person. But it appears that this stage is essential to the production of immunity; out of this nettle—danger—we pluck the flower—safety.

Both anaphylaxis and immunity are *specific*. A person who is sensitised or who is immune to tuberculin retains his normal susceptibility to other poisons. It follows, therefore, that either of these phenomena may serve us in diagnosis. If a clear and unequivocal demonstration of anaphylaxis or of immunity to tuberculin or to the tubercle bacillus is forthcoming, it is definite proof of an infection, present or past. The problem which I have to discuss is how far the one or the other may be employed in practice in diagnosing an active tuberculous lesion.

I may remark in passing that the two stages—hypersensitiveness and immunity—may coexist. Thus, a person who has been treated with large doses of tuberculin may contain in his blood much anti-tuberculin, so that he may no longer react to large doses. Yet his tissues may be anaphylactic, and the disease may still spread. In some diseases the problem is an easy one, but this is not the case in tuberculosis, at least in adults. The difficulty arises in part from the nature of the tubercle bacillus, which renders it in many respects a difficult organism to work with, but it is more specially due to the fact that the great majority of adults have already some degree of acquired immunity to the disease. Hamburger has recently shown that in the poorer parts of Vienna no less than 94 per cent. of children become tuberculous before the age of 14 years; these results have been questioned, but they were confirmed by necropsy, and although the disease may not be quite so prevalent in most districts, it is undoubtedly very common for children to have a small tuberculous focus, causing no apparent symptoms, and not recognised unless death is brought about by other causes and a necropsy is performed. Yet this mild and latent tubercle may profoundly modify the susceptibility of the tissues of the patient. And perhaps even more important from this point of view is the fact that almost everybody is constantly being vaccinated against the tubercle bacillus *viâ* the alimentary canal and respiratory organs. Milk, as you all know, very frequently contains bacilli, and they are commonly present in the dust of the air we breathe; the traditional peck of dirt must contain innumerable millions of tubercle bacilli. If this is so, it follows that most of us must be undergoing a constant course of immunisation against the disease, and I might suggest that it is the lack of this form of preventive treatment which accounts for the great frequency of the disease in childhood. Be this as it may, the fact remains that adults as a class show definite signs of having been rendered partially immune to the tubercle bacillus, and this renders the diagnosis by means of the immunity reaction in them more difficult and unsatisfactory than in children. Thus the cuti-reaction, or von Pirquet's reaction, which is entirely satisfactory in childhood, is of comparatively little value in adults.

### CHANGES IN THE TISSUES.

The ultimate study of the processes which occur in any infective disease leads us to realise that, strictly speaking, no such thing as a local disease ever occurs. In all cases, however small the lesion, there are changes, often profound, in the blood and in all the tissues throughout the body. We believe, indeed, that the presence of a small and apparently quiescent tuberculous lesion may alter in an important way the method in which every portion of the body nourishes itself. These alterations in the tissues must almost necessarily affect the blood, and this again may react on the tissues, so that the whole process becomes one of extraordinary complexity. I allude to the alterations in the tissues first, since it is the tissues which elaborate the blood, so that changes in the blood (other than the presence of toxins, &c.) must necessarily be secondary to, and caused by, the changes in the tissues; and amongst the tissues in this connexion I must include the leucocytes, which appear to play a most important part in the elaboration of defensive substances. Furthermore, we must not forget that it is the tissues, the living and acting parts of our body, that have to be defended against attack. The blood, it is true, forms the first line of defence; the tissues are the country which the invader must conquer. The study of the way in which the tissues behave is therefore of the chief importance. Unfortunately it is much more difficult than the investigation of the blood, and our knowledge of it is much less advanced. Indeed, our knowledge of the altered behaviour of the tissues in infection and immunity was almost nothing until two or three years ago, and is due almost solely to recent researches on anaphylaxis, especially to tuberculin, as shown by the cuti- and ophthalmic reactions.

### ANTIBODIES.

Owing to the ease in which it can be investigated, our knowledge of these conditions in regard to their effect on the blood is much fuller; we may sum it up in one word—the presence of antibodies. By an antibody we mean a substance which we find in the blood serum as the result of the presence in the body of a foreign proteid, which we term its antigen. Thus if we inject a foreign protein, such as egg albumin, we find that the blood serum acquires a new property, that of precipitating a solution of egg albumin, such as was used for the injection. Here the albumin is the antigen, and we assume that the new property is due to a new substance, an antibody, which we call precipitin. It is a matter of some importance to recognise that antigens are, as far as we know at present, always proteids, or substances closely allied thereto; never fats, sugars, alkaloids, or other simple chemical compounds. It is noteworthy, too, that antibodies are always specific; diphtheria toxin acting as an antigen leads to the production of diphtheria antitoxin, which has no action on the toxin of tetanus. Speaking of ultimate molecules, this rule is apparently absolute, but in

ordinary experience a pure proteid is never seen, and the protoplasm and toxins of bacteria are highly complex mixtures. This is the explanation of some of the apparent non-specificity of some of the antibodies as we see them in disease.

If an antigen and its antibody are mixed they will always unite, and when this happens the properties, chemical, physical, or physiological, of the latter, are more or less profoundly altered. It is on this alteration of the antigen that our classification of the antibodies depends. Thus we recognise the following:—

*An Antibody Combined with an Antigen and the Result.*

| Antibody. | Antigen. | Action. |
|---|---|---|
| Antitoxin. | Toxin. | Neutralisation. |
| Precipitin. | Coagulable proteid. | Precipitation. |
| Agglutinin. | Cells, bacteria, &c. | Clumping. |
| Cytolysin (including bacteriolysin and hæmolysin). | ,, ,, | Prepares cells, bacteria, &c., for solution by complement. |
| Opsonin. | ,, ,, | Prepares cells, bacteria, &c., for ingestion by leucocytes. |

I include opsonin as an antibody, but with a certain amount of hesitation. It is not certain that it is an antibody, one of the reasons being that all persons contain in their serum a considerable amount of opsonin to the ordinary pathogenic bacteria, whereas they do not contain antibodies, or contain them only in minute traces. But there is no doubt that some, possibly all, of the true antibodies may play the part of an opsonin, so that I am justified in including them here.

## VARIOUS ANTIBODIES AND THEIR APPLICATIONS IN DIAGNOSIS.

The method of diagnosis of an infective disease by the demonstration of a specific antibody is theoretically simple. If the serum contains a large amount of an antibody to a pathogenic bacterium the presumption is that the person has, or has had recently, an infection with the organism in question. But in practice it is not always so simple. There are few examples of the application of the test which are so direct, so easy to carry out, and so certain in their results as the Widal reaction in typhoid fever, which, when properly performed, I regard as absolute. One of the causes of difficulty—for there are others—arises from the fact that it is not uncommon for normal and healthy persons to have in their blood small quantities of antibodies to various pathogenic bacteria. This is the case even with typhoid fever, for it is not uncommon for the serum of normal persons to clump the bacillus when but slightly diluted; hence—and this is a point on which I must lay much stress—all work of this sort must be strictly quantitative to be of value. We do not have to find the presence or absence of specific antibodies, but a significant amount, more than is present in health. This is especially the case in tubercle, in which disease, as I have already pointed out, opportunities for a process of accidental vaccination against the disease are frequently present. Keeping this in mind, let me give you a brief outline of the main antibodies to the tubercle bacillus and its toxin, and of their value in diagnosis.

1. *Antitoxin.*—I think we may regard it as proved that tuberculin—old tuberculin—is a solution of the real toxin of tuberculosis. But it is a toxin of a very remarkable kind, acting only on an anaphylactic person. The antitoxin to tuberculin—antituberculin—can be produced in animals by injecting large but carefully graduated doses of tuberculin. The serum of animals thus treated contains a new substance, the action of which is to neutralise the action of tuberculin on tuberculous subjects. Antituberculin can also be demonstrated in the blood of tuberculous patients who have been treated on the continental principle with large doses of tuberculin; serum from such patients mixed with tuberculin will prevent the latter from giving the von Pirquet's reaction on the skin of tuberculous patients. Non-treated patients may also contain antituberculin in small amount, and its demonstration affords a fairly good proof of a tuberculous infection. The proof of its presence is indirect, and I shall defer its consideration for the present.

2. *Precipitin.*—To demonstrate the presence of a precipitin to a bacterium it is necessary to obtain a solution of the bacterial protoplasm, and to mix it with the serum. If a precipitin is present the mixture becomes cloudy and a precipitate may form; thus, when an old, filtered culture of typhoid bacilli is added to serum from some typhoid patients (for the reaction does not always succeed) the phenomenon may occur, and when it does it constitutes a valid proof of a typhoid infection. Experiments on these lines with tubercle bacilli are difficult, since its protoplasm is very insoluble. T.R. approaches very nearly to such a solution; it consists of tubercle bacilli in a fine state of subdivision, closely akin to a true solution. It can be used for the test, and will occasionally be precipitated by tuberculous serum. Such tests are not very satisfactory, and yield no information that cannot be obtained by agglutination tests, which are much easier in execution.

3. *Agglutinin.*—This is the first antibody to the tubercle bacillus which was discovered and applied in diagnosis. The test is of some value, but stands on an entirely different footing from the Widal reaction. To begin with, it is not altogether easy to carry out. Special methods have to be employed for preparing the emulsion, since ordinary tubercle bacilli tend to clump spontaneously. Several methods are in use, but I have found it satisfactory to grind a large amount of tubercle bacilli (killed by heat, such as are used in the opsonic work) in normal saline solution saturated with chloroform, and then to centrifugalise at a moderate speed for an hour, or let it settle spontaneously for two days. The supernatant fluid forms a fairly stable emulsion, which may be standardised in the ordinary way. To carry out the test various admixtures are made of the serum and are incubated for four to six hours; the test is carried out in capillary pipettes and the results observed by the naked eye. Whatever method is used, the results are unsatisfactory in diagnosis but interesting theoretically. Thus Arloing and Courmont give the following table:—

| | Positive. Per cent. | Negative. Per cent. |
|---|---|---|
| Tuberculous patients ... ... ... ... | 87·9 ..... | 12·1 |
| Non-tuberculous ... ... ... ... ... | 34·6 ..... | 65·4 |
| Apparently healthy ... ... ... ... | 26·8 ..... | 73·2 |

Here we see very clearly that a normal person may, and frequently does, contain in his blood antibodies to the tubercle bacillus. Their mode of origin becomes clear when we consider Descos's results with the serum of infants.

| | Positive. Per cent. | Negative. Per cent. | Doubtful. Per cent. |
|---|---|---|---|
| Clinically tuberculous ... ... | 72·3 ..... | 12·3 ..... | 15·2 |
| ,, non-tuberculous ... | 12·7 ..... | 87·2 ..... | — |
| Doubtful cases ... ... ... ... | 50·0 ..... | 44·4 ..... | 5·5 |

Contrasting this with Arloing and Courmont's results we see that adult healthy and non-tuberculous cases have tuberculin agglutinins much more frequently than have infants. The practical value of a test of this sort is not great. Perhaps it might be increased if the estimation were carried out more carefully on quantitative lines. But it is quite certain that a case may progress from start to finish and never show the least trace of agglutinin in the blood. The test, therefore, cannot be an absolute one.

4. *Bacteriolysins.*—Of these we know practically nothing. Whether the tubercle bacillus is ever dissolved in the blood is as yet unknown, and the technical difficulties are so great that we can hardly expect valuable results from experiments *in vitro*. Possibly bacteriolysins do occur and play some part in the Bordet-Gengou reaction, with which I shall deal subsequently.

5. *Opsonins.*—The practical value of the opsonic index in diagnosis has been hotly discussed, and I do not propose to go over the ground at length to-day. I am the more justified in treating it in a brief and altogether inadequate way since Inman has recently published the results of a careful and painstaking investigation into its value, coming to conclusions with which, on the whole, I am in agreement. A low index (below 0·8) or a high one (above 1·2) is strongly suggestive of tubercle, and the greater the difference from these figures, whether by excess or deficiency, the more certain the diagnosis. This is generally admitted, but the value of the test is greatly reduced by the fact that, even in tuberculous cases, the index frequently falls within the normal limits. Inman, for example, found this to happen in

50 per cent. of cases of undoubted tubercle, and I think I should put the figure even higher. Thus, even if we were quite certain of our technique we could only diagnose 50 per cent. of cases of tubercle by the opsonic index—really fewer, since it is unsafe to make an absolute diagnosis from a slight variation above or below normal limits. To meet this difficulty methods have been devised of taking advantage of the fact that in an anaphylactic person a small dose of tuberculin causes a marked fluctuation of the opsonic index. The index is taken, and the patient is given a small dose of tuberculin or made to take exercise, or, if he has an accessible lesion, this is massaged; in any case, one or more subsequent determinations of the index are made and the results compared. As a rule, the first effect of the injection of tuberculin or of the procedures which are supposed to lead to an output of tuberculin from the lesions (auto-inoculation) is a lowering of the opsonic index—the negative phase—but occasionally this may be overlooked and the subsequent rise be the only indication of anaphylaxis. In a non-tuberculous person the index remains constant. This test is of great value, and it is the only one that professes to discriminate between an active lesion and the amount of antibodies, as shown by the "absorption-time," which started at 55 minutes, fell to 80 minutes, and then rose to 25 and ultimately to five minutes.

### ESTIMATION OF TOTAL ANTIBODIES.

So much for the methods by which we attempt to investigate the various antibodies separately. I now turn to methods by which we are enabled to gauge the amount of all the antibodies in the serum without attempting to discriminate between the various sorts. Two such methods are in use. The first does not call for extended notice. It is the *meiostagmin* reaction, introduced by Ascoli, and employed by Izar in the investigation of tuberculous sera. It depends upon the fact that when a serum containing an antibody is incubated for two hours in contact with its antigen a marked lowering of surface-tension occurs. This is measured by the number of drops which a measured quantity of the mixture forms when falling from a narrow orifice under constant conditions. The number of drops is measured before and after the incubation; if there is no antibody in the fluid the number is the same in the two cases, whereas if antibody and antigen are present there is a lowering of surface tension

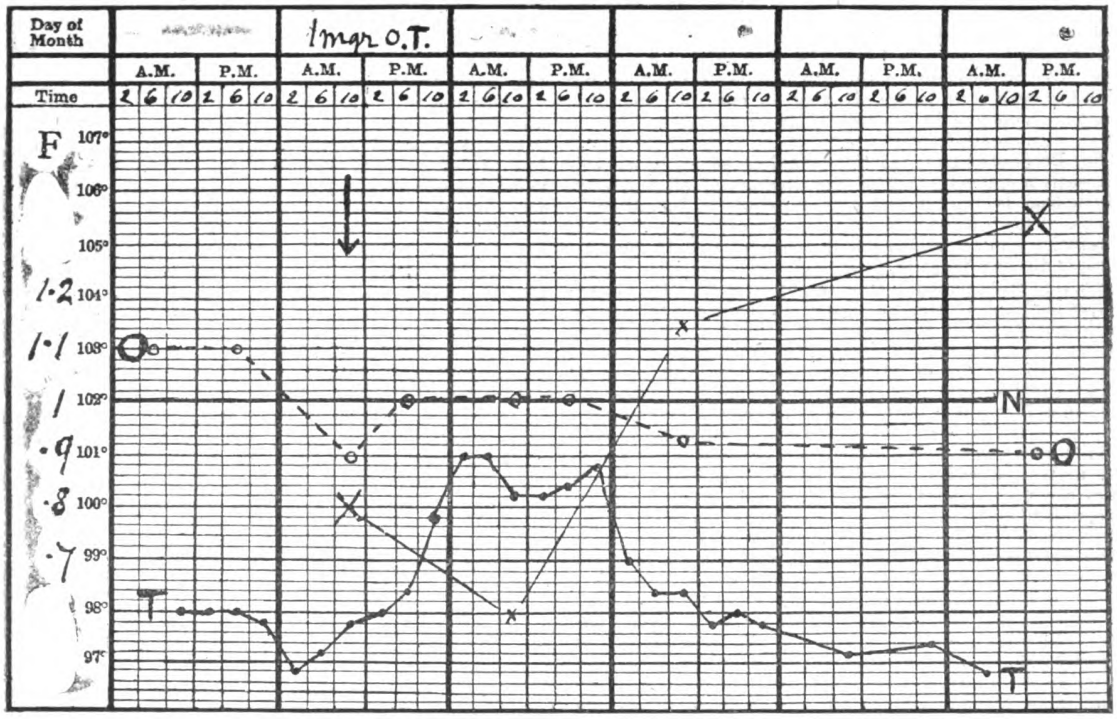


Chart showing: T, temperature; O, opsonic index; N, normal opsonic index; X, absorption time.

state of immunity or at least of altered susceptibility to tubercle that follows a complete cure. The criticisms I have to offer of this test are three: 1. The estimation of the opsonic index is tedious and difficult, and except when carried out with scrupulous care by a thoroughly trained experimenter fraught with liability to error. I am quite sure from what I have seen and heard that in many cases the results obtained are no better than guess-work. 2. In careful hands the error is believed to be about 10 per cent. If this were always in the same direction it would not matter, but if the error is sometimes in excess and sometimes in deficiency the total error may be serious. 3. The reaction does not always occur. I have met with at least two cases of undoubted tubercle in which no noticeable fluctuation of the opsonic index followed a dose of tuberculin, though the examinations were carried out with the greatest possible care. One of these cases is seen in the chart appended, which shows a very marked reaction after the injection of 1/1000 cubic centimetre of old tuberculin. It should be pointed out that the slight fall in the opsonic index occurred *before* the injection. The negative phase occurred, as is shown by the line between crosses, which indicates the total which manifests itself in an increase in the number of drops. The method is a general one, and has apparently given good results in the hands of its discoverer in the diagnosis of malignant tumours. I cannot speak of its value in the case of tuberculosis from personal experience; I have commenced to experiment with the method, but have not yet acquired sufficient command of the technique (which appears to be difficult) to obtain results of value. I believe that Dr. Hort has invented a simpler and more accurate method of estimating slight changes in surface-tension, and has applied it successfully to the diagnosis of tubercle, syphilis, and cancer.

### BORDET-GENGOU REACTION.

The other method, a much older one, is an application of the reaction of Bordet and Gengou, which requires a little explanation. I have already referred to the term complement but without defining it. Complement is a very fragile substance, allied in some ways to the enzymes, which is found in fresh serum, and which is supposed to play a part of great importance in protecting the body against disease. The antibody called bacteriolysin has in itself no action on

bacteria; but when these have been acted on by bacteriolysin (or, as it is usually termed, *sensitised*) they may be killed and even dissolved completely by the action of complement. Again, red blood corpuscles which have been sensitised by the antibody (hæmolytic amboceptor) which they produce when injected into a strange animal are also dissolved by complement. It is not yet quite certain whether the complement which dissolves bacteria is the same as that which dissolves red corpuscles, and it was in an attempt to settle this question that Bordet discovered the law which bears his name—a remarkable example of the practical advantages which may arise from what is apparently a useless research into a highly theoretical point. Bordet discovered that when antigen, antibody, and complement are present in a fluid, and a combination takes place between the two former, the complement present is abstracted. For example, if serum from an animal immunised to the typhoid bacillus or from a case of typhoid fever, and containing in either case typhoid antibodies, is mixed with an emulsion of typhoid bacilli or of an extract thereof (thus containing antigen), the two substances unite, and in doing so remove any variety of complement which may be present. This is readily demonstrated by adding red corpuscles which are saturated with hæmolytic amboceptor; if complement be absent, they will be unaltered; if it be present, they will become dissolved. The sensitised corpuscles simply act as an indicator to see whether a chemical action has taken place. We might compare them to a piece of litmus paper which has been used to see whether an unknown fluid has undergone a change in reaction after being mixed with an acid or with an alkali.

The Bordet-Gengou reaction supplies us with what is apparently a universal test for the presence of an antibody, and one that is independent of the nature of the antibody present. This is a point of considerable importance. Thus, the reaction can be used in the diagnosis of hydatid disease, a disease due to a parasite, though of large size, and accompanied, like other parasitic diseases, by an immunity reaction manifesting itself by the presence of antibodies in the serum. We do not know in the least what these antibodies are, whether they are to be regarded as antitoxins or other defensive substances, or what part they play in the struggle against the parasite. But they give the Bordet-Gengou reaction, a fact which enables them to be used in diagnosis. The method is simple: some of the serum from the patient is mixed with hydatid fluid, incubated at the body temperature, and sensitised corpuscles added. If hydatid antibodies are present no solution of the red corpuscles takes place, and then the diagnosis of hydatid disease can be made with almost absolute certainty. If there are no antibodies to the hydatid fluid the complement will not be absorbed, and this will be shown by the fact that the sensitised red corpuscles which are subsequently added will be dissolved and their hæmoglobin set free. This renders the diagnosis of hydatid disease unlikely, though it does not exclude it altogether, since it would appear that at times a hydatid cyst may remain latent and call forth no production of antibodies, those previously present being gradually eliminated from the blood. I have had but two examples of trying this test, in one of which it was positive and the other negative. I may say that in actual practice it is advisable to perform the test quantitatively, using various dilutions of the hydatid fluid, since normal blood may give some deviation with undiluted hydatid fluid.

### APPLICATION OF BORDET-GENGOU REACTION TO TUBERCULOSIS.

It is clear that this method should be of great use in the diagnosis of tubercle, or at least in the study of the immunity reaction in that disease, since, although we know but little of the nature of the antibodies that are produced, a very large number of researches have been carried out on these lines. The results have been extraordinarily various, some authors finding the reaction of some value, others finding it quite useless. Thus Simon and Hans got a positive reaction in 18 and a partial reaction in 2 cases out of 24, whilst out of 19 non-tuberculous controls they obtained a reaction only twice. Others have been less fortunate; thus Laub and Novotny got 4 complete, 5 partial, and 4 traces of a reaction out of 30 cases investigated. Butler and Mefford found it in only about half of their cases, and Cohn only in 15 out of 57. The same divergencies of opinion occur amongst veterinary surgeons who have used the test, Weber and Dieterlen finding it invariably absent in healthy and invariably present in affected cattle, whilst Bach could find no difference between the two. I think the discrepancies are to be accounted for in several ways, the most important of which is the fact that nearly all observers have used tuberculin as an antigen; this is true of Armand-Delille, Frugoni, Bach, Weber and Dieterlen, Besançon and Serbonnes, Noguchi, Leber, Butler and Mefford, Babes and Basila, and others. In my own experiments I began with old tuberculin and found it unsatisfactory, then experimented with the same fluid precipitated with alcohol and the precipitate redissolved in normal saline solution, which was not much better. The comparative uselessness of tuberculin for the test has also been noticed by Noguchi, who found that broth itself, and non-specific substances such as glycogen, would give the reaction. This may explain some of the positive results obtained with non-tuberculous sera, and it appears to be that the fact that tuberculous sera do not always react is to be accounted for by supposing that the bacilli in a tuberculous lesion are not always giving off enough tuberculin to cause sufficient antituberculin to be demonstrable by this test. And in any case we should not expect the process to demonstrate antibodies to the non-soluble portions of the bacilli. It was this and other reasons that led me to use an emulsion of tubercle bacilli. I have found since that Frugoni has done the same, and, like myself, has found the reaction of complement-absorption obtained by their use to be less sensitive than that obtained by the use of tuberculin as antigen, but more specific.

Another reason, which I found the force of more and more as I proceeded in my investigations, for the failure of the previous researches is the fact, already alluded to, that these antibodies may be present in health, and that, therefore, any method of investigating them must be accurately quantitative. I am quite convinced that no method, on investigation on these lines, will ever give us a ready-made test, applicable in all cases, for the presence or absence of a tuberculous infection. What it may be expected to give us is a measure of the amount of antituberculous substances in the serum, which, in association with the clinical facts, may have great value in diagnosis, and perhaps also in prognosis and treatment.

### QUANTITATIVE METHODS.

In quantitative estimations of the strength of a serum in antibodies, as estimated by the Bordet-Gengou reaction, there are several courses open to us. We may modify (1) the amount of the serum to be tested, keeping the other factors constant; or (2) we may dilute the antigen, so as to find the smallest amount which will give a positive reaction, the other factors remaining constant—this is the method which I have found most convenient in the Wassermann reaction; or (3) we may keep the amount of serum and antigen constant, and see how much complement the fluid can absorb. All these methods have been tried, and may be used; they are, however, rather complex for clinical purposes, which have been my aim throughout. I believe I have discovered a simpler method, and one more easily available for diagnosis. I found some time ago, and I believe that the observation was a new one, that in the case of the Wassermann reaction the absorption of complement takes place in a few minutes—five at most—at the incubator temperature. On trying similar experiments with sera in contact with emulsions of tubercle bacilli I found the time vary greatly, being on the average much shorter with tuberculous than with normal or non-tuberculous sera. This is what we might expect; the greater the amount of antibody the quicker we should suppose the reaction to be. I have therefore worked out what I term the *absorption-time* for a large number of sera, with results which I will show shortly.

I have always made use of the natural complement present in the serum, rather than attempt to keep this amount constant by heating the serum and then adding guinea-pig's serum, a method supposed, though I think not on very good grounds, to be more accurate. My chief reason for not doing so was that I was trying to work out a method of clinical value, and if I was able to do so by making use of the natural complement the results would be enormously more valuable from a practical point of view, because more easily obtained. I may say that I have made a considerable number of comparative experiments and do not find a serum

with a large amount of complement gives a long absorption-time, or *vice versa*. I cannot say whether such variations in the amount of complement as may occur in the same person's serum may affect the result, but have seen no reason to think so.

As regards the question whether I may not have been working with a non-specific process of absorption, I can only say that had this been the case I should have expected it to be proportionate to the amount of complement, which is not the case. Again, after an injection of tuberculin I have seen the absorption-time go down until it is longer than two hours; the absorption of complement, or its destruction at the incubator temperature, therefore, takes a period of time much longer than that given by ordinary serum. I feel fairly satisfied that the times which I measure are really to be regarded as an index of the amount of antibody present in the serum.

### TECHNIQUE USED TO DETERMINE ABSORPTION TIME.

As regards the technical details of my method, the first requisite is a standard emulsion of tubercle bacilli. This I have found it convenient to make up to such a strength that it contains 4 per cent. by volume of solid bacillary substance, this giving an absorption-time with normal serum of convenient length. I had hoped that this would prove an absolute standard, a desideratum of great importance, so that different workers can obtain comparable results. I find, however, that when I use bacilli from different sources I get somewhat different results, so that I now standardise each batch as it is prepared, getting a strength such that the average absorption-time for a healthy person is about 20 minutes. The emulsion is prepared with normal saline solution and is carefully sterilised by intermittent sterilisation before it is standardised, and is kept in sealed ampoules. It keeps for about a month or six weeks, after which it alters gradually. The serum from the patient is collected in an ordinary Wright's pipette, and not more is required than can be collected from an ear or finger puncture. The test has usually been applied the same day, but I have been able to trace no alteration after 24 hours, beyond which it is not wise to go.

The only other necessary ingredient is the emulsion of sensitised red corpuscles employed to see whether the serum contains fresh complement or not. I have adopted human corpuscles in view of the fact that they are always at hand. These have to be sensitised by the addition in definite proportions of the heated serum of a rabbit which has been injected with well-washed human corpuscles. I have found it most convenient to mix the red corpuscles and the serum and allow them to stand in contact for a few minutes rather than to add the corpuscles and serum separately; this simplifies the process somewhat. I find that a mixture of 1 part of washed corpuscles and 4 parts of immune serum gives good results. The strength of this immune serum is of some importance. It must be sufficiently strong, otherwise the corpuscles will not be thoroughly sensitised, and will then require more than the proper amount of complement for their solution, which error manifests itself as a short absorption-time. Neither must it be too strong, though this is less serious; if too strong the corpuscles will be so strongly agglutinated that they will sink before the complement has time to dissolve them. In this case correct results can be obtained if the mixture is stirred once or twice. The heated serum from the immunised rabbit has to be tested, and when the suitable dilution is found the serum is diluted to that degree and distributed into sterile ampoules in which it will keep for some months, though gradually becoming weaker.

It is necessary that the test should be carried out in a water-bath, and for this purpose the incubator made for me by Messrs. Hearson for use in the Wassermann test is very useful, though not absolutely necessary. Some sort of a water-bath, however, must be used, since it takes an appreciable length of time for a tube of fluid to reach the required temperature when placed in the warm air of an ordinary incubator, whereas if the tubes are kept surrounded by water at the desired temperature (38° C.) and the fluid placed therein, the small amount used will reach the temperature desired almost at once. The technique is as follows:—

A mixture of 1 part of the serum to be tested is mixed with 4 parts of the emulsion of tubercle bacilli in a tube in a water-bath at 38° C. and the time accurately noted. In 2½ minutes four volumes of the mixture are removed from the tube with a capillary pipette, into which also a single unit of sensitised blood corpuscles is sucked, and the two expelled into a narrow tube already standing in the water-bath. The process is repeated after 5, 10, 15, and 20 minutes, and for a longer period if necessary. The corpuscles in the tubes are allowed to settle (it is an advantage to give them a preliminary stir), and when this has happened the presence or absence of hæmolysis is read off, and the absorption-time is taken as that of the first tube in which there is no trace of hæmolysis. Thus, with my own serum, the tubes which have been incubated for 2½, 5, and 10 minutes give more or less marked hæmolysis, 15 minutes a trace, and 20 minutes *nil*, so that my absorption-time is 20 minutes. A control is necessary in all cases, and is prepared by making a mixture of serum and normal saline solution in the same proportions as the serum and emulsion of bacilli in the test, and sensitised corpuscles are added to make sure that the complement is present in sufficient amount. It is an advantage to allow this control tube to stand for half an hour to see that the complement is not destroyed in this length of time, though I have never found this to be the case. As a general rule there is but little weakening after one hour. Commonly with tuberculous sera, but very rarely with non-tuberculous, the absorption-time is less than 2½ minutes. It is not admissible to attempt to measure this direct, and where a more accurate measure of the time is required a combination of two methods must be used. The emulsion of bacilli must now be diluted in known proportions, and tested in exactly the same way. The results can be expressed by dividing the absorption time by the dilution. For example, a specimen of serum from a patient with tuberculosis of the breast gave an absorption time of 10 minutes with a 1 in 10 dilution of the emulsion; the time therefore was 10/10, or 1 minute. In a case of phthisis the time was 10 minutes with a dilution of 1 in 500, so that the absorption time was expressed as 1½ seconds. I need not say that all times under 2½ minutes are to be regarded as arbitrary, and I have not usually worked below this period. I am rather sorry that I have not done so, since it makes the results much more exact.

### RESULTS OF ABSORPTION-TIME TESTS.

Let me now quote my results. I have examined 34 cases of diseases other than tubercle and healthy persons. The average absorption time was 18·1 minutes, the maximum 35 minutes, and the minimum 2½; this shortened time was present in but three cases which were not thought to be tuberculous. In one of these cases I have some doubts; the person has suffered off and on from various ill-defined illnesses for several years, and although showing no definite sign of illness is not robust. Another serum came from a child with typhoid fever, and no details as to the presence or absence of tubercle were obtainable. The third came from a nurse who is said to have suffered from goitre, but who was otherwise healthy.

In tuberculous cases the most usual thing is to find the absorption time greatly reduced. In my cases the average time was 7·4 minutes, and times of less than 2½ minutes were found in 25 out of 56 sera examined, or 44·6 per cent. Thus, if we regard an absorption period of 2½ minutes as affording the criterion for the presence or absence of the test, we find it in 44·6 per cent. of tuberculous and 8·8 per cent. of non-tuberculous cases. If we take 5 minutes we find it in 66 and 11·7 per cent. respectively. The following table gives my results to the present time. In calculating the absorption time for the tuberculous sera I have taken all times under 2 minutes as if they were 2½ minutes exactly; this has the effect of lengthening the average very considerably:—

| Absorption time. | Tuberculous cases. | Non-tuberculous cases. |
|---|---|---|
| Less than 2½ minutes | 25 | 3 |
| 2½-5 minutes | 12 | 1 |
| 5-10 ,, | 9 | 2 |
| 10-15 ,, | 3 | 7 |
| 15-20 ,, | 2 | 11 |
| 20-25 ,, | 1 | 7 |
| 25-30 ,, | 2 | 3 |
| Over 30 ,, | 2* | 0 |

* One case 40 minutes; the other case 55 minutes.

Average of tuberculous cases ... ... ... 7·4 minutes.

Average of non-tuberculous cases ... ... 18·1 ,,

*Percentage of Cases.*

| Absorption time. | Tuberculous. | Non-tuberculous. |
|---|---|---|
| Under 2½ minutes ... ... ... ... | 44·6 ..... | 8·3 |
| Under 5 ,, ... ... ... ... | 66·0 ..... | 11·7 |
| Under 10 ,, ... ... ... ... | 82·1 ..... | 17·6 |

I quote the following results separately (they are, however, also inserted into the preceding table), as they were obtained by Dr. P. B. Ridge by my method, but quite independently, and may be taken to show that results similar to mine can be obtained by others.

| Non-tuberculous cases. | Absorption time. |
|---|---|
| 1. Normal case ... ... ... ... ... ... ... | 15 minutes. |
| 2. Typhoid fever ... ... ... ... ... ... | 15 ,, |
| 3. Anæmia ... ... ... ... ... ... ... ... | 30 ,, |
| 4. Gastric ulcer ... ... ... ... ... ... ... | 20 ,, |
| Average 20 minutes. | |

| Tuberculous cases. | Absorption time. |
|---|---|
| 1. Phthisis, doing well ... ... ... ... ... | 1 minute (calculated). |
| 2. ,, doing fairly well ... ... ... | 2½ minutes. |
| 3. ,, early, doing well ... ... ... | 2½ ,, |
| 4. ,, chronic ... ... ... ... ... | 10 ,, |
| 5. ,, no details ... ... ... ... ... | 10 ,, |
| 6. ,, doing well ... ... ... ... ... | 2½ ,, |
| 7. Tuberculous iridocyclitis ... ... ... | 15 ,, |
| Average 6·2 minutes. | |

The correspondence between the two sets of averages is very close. I think, therefore, that we may regard an absorption time shortened to 2½ minutes as affording strong presumptive evidence of tubercle—not absolute proof, for, as you will see, it may occur, though rarely, in persons in whom there is no definite evidence of the presence of tuberculosis.

APPLICATIONS OF TEST IN DIAGNOSIS AND PROGNOSIS.

Further, tuberculous cases do not always give a shortened absorption period. When I first realised this it occurred to me that a shortened time, which I take to indicate the presence of abundant antibodies (usually regarded as protective substances), might also indicate a powerful immunising response, and therefore a good prognosis. To a certain extent this is true: very short absorption times are usually met with in chronic cases which are doing well, and in quite general terms are, in definite tuberculosis, longer in cases which are progressing rapidly. The process, therefore, has some value in giving a clue to the prognosis. But it is very far from being absolute. This is shown in an extremely interesting way by the case that gave the longest absorption time in my whole series—55 minutes. This was from a mild case of primary tuberculosis of the larynx, which gave a very strong von Pirquet's reaction, and reacted to tuberculin internally. This patient was certainly not affected severely, yet his blood gave practically no signs of the presence of antibodies. He was treated with rather large doses of tuberculin (1/2000 c.c. O.T.), to which he reacted strongly, and after three such injections he showed no indications of becoming immunised to the substance. There was a well-marked negative phase after each injection, and in two of these I believe I was able to demonstrate the fact that this negative phase, characterised by a very long absorption time, was not due, or at least not entirely due, to a diminution in the amount of antibodies in the blood; it appears to be due in part at least to the presence of a substance which inhibits the linking up of antigen, amboceptor, and complement. This was shown by preparing mixtures of the patient's serum with serum containing a large amount of tuberculous antibodies; in all cases the absorption time of the latter was greatly prolonged as a result of the addition of the serum from the patient in whom there was a negative phase. These results were not due to the differences in the amount of complement present in the various mixtures, for in some cases mixtures containing a large amount of complement gave a short absorption time, and *vice versâ*. Not many of these experiments could be tried, as the phenomenon was only met with in one patient, and I should not have been altogether satisfied with the proof that the greatly prolonged absorption time in the negative phase (amounting on one occasion to more than two hours) was actually due to the presence of an inhibiting substance if I had not subsequently seen that Calmette and Massol have recently described a similar substance as occurring in the blood of animals during the course of immunisation against tuberculosis—i.e., under conditions similar to my own. According to them it interferes with the combination of antigen and antibody if added before the complement, and may occur in the same specimen of serum as the ordinary antibodies and mask their action. Taken together with Calmette and Massol's results my observations appear to show that such a substance may occur in human serum and its presence may explain the negative phase, a phenomenon for which no clear explanation has yet been given. It seems to me more likely that a small quantity of a new substance should make its appearance immediately after the injection of tuberculin or other antigen, rather than that there should be any appreciable diminution in the total amount of antibodies where these are abundant.

Thus it appears that a prolonged absorption time may be due (1) to the presence of antibodies in minute amounts only (this occurs in health or in tuberculosis, and as a rough general rule indicates a progressive disease); and (2) to the presence of this inhibiting substance (this does not necessarily indicate a bad prognosis). Judging from the few cases in which I have been able to put the matter to the test, a prolonged absorption time in a case of undoubted tubercle indicates a high degree of susceptibility to tuberculin, whether applied to the skin or injected; but a patient with a shortened time will also react.

I must add that I have been able to trace no apparent connexion between the amount of antibodies in the blood (as tested by the absorption time, the opsonic index, and the amount of complement).[1] This is shown in the following table:—

| | Absorption time. Minutes. | Opsonic index. | Complement value. |
|---|---|---|---|
| Control (normal) ... ... ... ... | 15 ..... | 1·0 ..... | 74 |
| Doubtful tubercle (Case A) ... | 30 ..... | 1·3 ..... | 76 |
| Mild tubercle of larynx ... ... | 55 ..... | 1·0 ..... | 94 |
| Phthisis ... ... ... ... ... ... | 2½ ..... | 1·2 ..... | 66 |
| Tuberculous glands in neck ... | 2½ ..... | 0·84 ..... | Not tested |
| Doubtful tubercle (Case B) ... | 10 ..... | 0·81 ..... | Not tested |
| Phthisis (another case) ... ... | 2½ ..... | 0·9 ..... | 134 |
| Lupus ... ... ... ... ... ... | 7½ ..... | Not tested ..... | 42 |

Other examples might be quoted.

In conclusion, may I urge the desirability of the acquisition of fuller knowledge than we now possess of the presence of antibodies in tubercle, and of their amount, as determined by any accurate quantitative method? I believe that if we were able to acquire a mass of information on this subject such as we have on the opsonic index we might gain very much useful information as to the pathology of tubercle, and perhaps much help as to treatment. On theoretical grounds it appears highly probable that an excess of antibodies in the blood, though probably not a cause of immunity to the disease, or at least not the only cause, should indicate a good prognosis, and is a thing to be striven for, whatever method of treatment we may adopt. In one or two cases under treatment I have seen a very marked improvement coincide with a great shortening of the absorption time. Thus, one patient with tuberculous glands in the neck had an absorption time of 30 minutes (tested on several occasions). After a course of tuberculin treatment his time was found to have shortened to two and a half minutes, and a marked diminution in the size of the glands had occurred. I have had but little opportunity for this class of investigation or for researches into the question of the occurrence of a negative phase after auto-inoculation, and should welcome cordially any further information on the subject, whether obtained by my own method or by any other.

[1] The method which I have evolved for the estimation of the relative amount of complement in different sera is as follows. Human red corpuscles are washed by three centrifugalisations from normal saline solution. They are then placed in a long narrow centrifugalising tube divided into hundredths and diluted with saline, and again centrifugalised until the volume of the deposit of corpuscles is constant. The supernatant fluid is pipetted off, and to each volume of corpuscles four volumes of a strong immune serum (rabbit) are added. These are incubated together for ten minutes or more and well mixed. Then four units of this sensitised emulsion are placed in a small tube (which must be clean and dry) and one volume of the serum to be tested is added, and the mixture incubated. Action is allowed to go on for a quarter of an hour, with occasional stirring, and the tube then centrifugalised very thoroughly. Then an amount which just fills five of the graduations in a Sahli's hæmoglobinometer are removed with a capillary pipette previously prepared for the purpose, placed in the comparison tube of the apparatus, and the amount of hæmoglobin estimated in the ordinary way. The figure thus obtained is regarded as the index of the amount of complement present. As a rule it lies between 25 and 150, the usual figure being 60–70. The method is quick and easy, and I believe it to be accurate.

ABSTRACT OF

# The Lettsomian Lectures

ON

# OPERATIONS FOR STONE IN THE MALE BLADDER.

*Delivered before the Medical Society of London on Feb. 6th and 20th and March 6th, 1911,*

BY WILLIAM F. HASLAM, M.B. BIRM., F.R.C.S. ENG.,

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## LECTURE II.[1]

*Delivered on Feb. 20th.*

Mr. Haslam said that Joannes Jacobus Raw, who became the most famous lithotomist in his day, was born in 1668. For some years he travelled about Germany, Norway, Holland, and Spain. After a time he went to Leyden and commenced the study of medicine in the medical school. Then he visited Paris and studied anatomy and surgery under the best masters. At Amsterdam he taught anatomy and practised surgery. It was at this time that Frère Jaques appeared in the city and performed his new operation, which Raw saw and strongly condemned. Soon after this he was appointed lithotomist to the city of Leyden, where he made a great sensation. He died in 1719. When he first began to cut for stone he performed the Marian operation. When, however, Frère Jaques appeared in Holland, Raw was allowed to examine the bodies of those who died after being operated on by him, and from Jaques he learnt the operation he was then performing. After a time Jaques appeared again and performed his second and improved operation, and this operation Raw learned and adopted with great success. At the death of Jaques it was believed that Raw was the only surgeon in Europe who knew his true method. That was generally believed to be the cutting into the bladder behind the prostate, which was, however, his first and imperfect operation. Raw, from motives of his own, was mean enough to delude the profession into the idea that he continued to make that incision, while all the time he was incising the prostate according to the method adopted by Jaques in his improved operation. Nothing would induce him to impart to his greatest friends or pupils the way in which he made his deep incision. Cheselden worked out and successfully practised an operation which became associated with his name; and he freely imparted a knowledge of its principles and details to all anxious to learn. The report of his operation rapidly spread, and Morand, then the most celebrated surgeon in France, came over to England and saw the operation performed in St. Thomas's Hospital by Cheselden and learnt its details. Frère Jaques, in his first operation, aimed boldly at the body of the bladder with his dagger-shaped knife, leaving the prostate untouched and, though successful in extracting the stone, his patients died in large numbers. He demonstrated, however, that a wound of the bladder in this situation was not necessarily fatal. In his second and improved operation he gave up the use of his dagger-shaped knife and dissected carefully on to a grooved staff and made the deeper incision by cutting the prostate and neck of the bladder upon the groove of the staff. A feature of both these operations was that the incision was not limited to the perineum, but passed backwards into the ischio-rectal fossa, thus greatly facilitating the extraction of the stone. Then Raw followed in detail the two operations of Jaques, but refused to divulge the mode of performance of the second, and at his death, which occurred in 1719, the knowledge of this was lost. Cheselden, following the description of Raw's operation, failed, as he was only likely to do, to attain his success, and finally systematised the lateral operation. This he performed by a lateral incision between the accelerator urinæ and the erector penis, passing backwards into the ischio-rectal fossa and dividing the transversus perinei; the knife was then introduced into the membranous urethra, and, passing along the groove in the staff, divided the prostate. This was the operation he taught Morand, and, though then quite satisfied with it, he had the misfortune later on to wound the rectum in two cases and to experience a difficulty in extracting a large stone. In 1731, therefore, the year after Morand had returned to Paris with full details of the operation, he altered the mode of the deep incisions. Before long a period arrived when the straightforward operation of Cheselden, which required a knowledge of anatomy and a careful dissection, was replaced by one that was performed largely by the aid of mechanical contrivances, such as grooved lithotomes, concealed knives, and cutting directors.

We find that Le Cat, Frère Côme, Foubert, and Hawkins were pioneers in this direction, and that the simpler operations were suspended for a time to make way for others done with the assistance of these inventions. Surgeons had long been familiar with the gorget; it was, indeed, the lineal descendant of the conductor of Hildamus, and acted as a dilator and a conductor. An English surgeon, Sir Cæsar Hawkins, conceived the idea of converting its right edge into a cutting edge, so that it might be pushed along the groove in the staff and thus divide the prostate more easily and, it was thought, with less danger than by using the knife in Cheselden's operation; and for a time this instrument was generally used. The operation as originally formulated by Cheselden, that which he taught Morand, does not seem to have found entire favour with surgeons at that time, probably from the fact that though safe and easy when performed by one thoroughly acquainted with the anatomy of the parts and the details of the operation, it was by no means free from difficulties and dangers when undertaken by those less competent. The dangers were principally incident to the deep incision through the prostate and the introduction of the forceps. These dangers were likely to deter the timid and to try the nerve of any one who, without due consideration, had embarked on this operation. Consequently, gorgets almost without number were invented, each with some special feature which was supposed to render it a safe instrument with which to enter the bladder. If failure occurred after using one of these it could be attributed to the instrument and not to the operator. With the disappearance of the gorget a return was made to the simpler method as introduced by Cheselden, and the lateral operation in its original form held the field. As such it was known to those who commenced professional studies before about the year 1885, when as yet it had not felt the full effect of the revival, under improved conditions, of the suprapubic operation and of the great advance made in the crushing operation by Bigelow. From that time its decline was rapid. The first recorded case of the suprapubic, or high, operation is that by Pierre Franco of Lausanne in 1556. No more was heard of the method until 1581, when Dr. F. Rosset of Montpellier thought that a stone in the bladder might be removed by opening that organ above the pubes, using a grooved catheter as a guide on which to cut. In 1719 John Douglas, F.R.S., surgeon to the Westminster Hospital, performed the high operation in this country, and in 1723 published the details of four cases occurring in boys under 16, all of which were successful. Cheselden also, in the early part of his career, in 1723, published a treatise illustrating his method, which was similar to that employed by Douglas. A very considerable controversy arose as to whether Douglas or Cheselden, who both wrote on the subject in 1723, should be considered as having established the high operation as a mode of practice. Deschamps considered that the credit was due to Douglas. In 1820 Sir Everard Home of St. George's Hospital performed his modification of the high operation. He passed a catheter with an open end and containing a stilette along the urethra, and having exposed the bladder by a suprapubic incision, pushed the stilette through the bladder and enlarged the opening with a bistoury. In spite of these and other attempts to improve the operation it did not commend itself to surgeons as a routine method of treatment, and it was left for such cases as were considered unsuitable for the lateral operation. In 1880 Dr. Pietersen of Kiel, who was present at the reading of a paper by Garson on the high operation at the Congress of German Surgeons, published an account of experiments made to ascertain the relative position of the anterior fold of the peritoneum and of the upper border of the pubes. As the result of these papers the high operation was again taken up and gradually came into favour. It was now, with hardly any exception, the only cutting operation resorted to. The choice of method might lie between cutting and crushing, but if the former was decided on the suprapubic operation was performed as a matter of course.

[1] Abstract of Lecture I. was published in THE LANCET of Feb. 18th, 1911, p. 423.

# THE TREATMENT OF PNEUMONIA.[1]

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WHEN your secretary, Dr. Vining, requested me to read before the Ealing branch of the British Medical Association a paper on the treatment of pneumonia I was glad of the opportunity once more to take up the consideration of this most important subject. It has interested me for many years. In 1885 I published a description of two cases of broncho-pneumonia treated with bleeding and ice,[2] and I devoted a large part of my Harveian Lectures delivered in 1903 to a study of the proper treatment of this common and fatal disease. So long as one patient out of every five or six attacked by pneumonia dies, and the total mortality reaches 40,000 deaths every year in the United Kingdom, the necessity for further consideration of the question of its treatment is only too obvious. What I wish to do now is to draw attention to some important matters connected with pneumonia and its treatment which seem to me not sufficiently regarded by the medical profession generally, and a due regard to which is in my opinion essential if a greater measure of success in treatment is to be attained.

I. The first point on which I would lay stress is *the importance of the earliest possible discovery of the local lesion.* Pneumonia consists, in the great majority of cases, in a local infection of the lung by pneumococci from the oral or nasal passages. It is of essential importance to determine precisely the situation of this primary focus in the lung and to attack it immediately by every means in our power; for, if left alone, the invading organisms increase at an overwhelming rate and may invade the whole lung. Every hour that passes diminishes the chances of successful treatment. In pneumonia, as in pulmonary tuberculosis, we shall not make much real advance in treatment until every medical practitioner has realised the duty incumbent on him of detecting the disease in its earliest localisation in the pulmonary tissue.

> Principiis obsta: sero medicina paratur
> Quum mala per longas convaluere moras.

For the accomplishment of this imperative duty it is necessary that we should all learn how much more important than auscultation is the constant practice of a careful and methodical percussion. We may learn much from the stethoscope, but in these early microbic infections of the lungs we may learn much more by the skilled use of our own fingers. For the earliest indication of a localised pulmonary invasion by the pneumococcus or by the tubercle bacillus is a local dullness to percussion, and the diminution at that same place of the functional activity of the lung. Dullness and diminished air-entry are the first evidences both in pneumonia and in pulmonary tuberculosis, but while the situation of these signs in tuberculosis is usually multiple and at certain definite situations in the upper parts of the lungs, in the pneumonia of adults a single area is generally first to be detected, and in the lower part of the lung; though apical pneumonia occurs occasionally and in children the infection is usually multiple.

We read in some descriptions of the disease that in some cases no physical signs are detectable until after the lapse of several days. I doubt whether this statement is ever true: I am sure that in most instances at all events it is founded simply upon a careless method of examination. Usually within 24 hours after the initial rigor of a pneumonia it is possible to demonstrate the existence of definite physical signs. They are at first merely dullness and lessened air-entry. But in pneumonia the picture rapidly changes, the dullness extends at an alarming rate, sharp inspiratory crepitation becomes audible, followed by bronchial breathing and bronchophony. At this stage the most careless physical examination may succeed in recognising a consolidation of lung.

The detection of the disease in its earliest stage is not merely a matter of scientific medical interest, it is of vital importance to the patient. Remember that while you are "fiddling, Rome is burning"! If your bedroom curtains caught fire, would you adopt an "expectant treatment" until the whole house was in a blaze? By an expectant treatment in pneumonia thousands of lives are lost every year.

II. *How is the initial lesion of pneumonia to be attacked?*—I answer unhesitatingly, *by the application of two icebags*, so placed as to include between them the inflamed area of lung. The pneumococcus is an organism which is very sensitive to changes in its environment, and in particular to changes of temperature. Dr. Eyre tells us[3] that "the range of temperature enjoyed by the pneumococcus is limited to about 14°, and is bounded by 28° C. on the one hand, below which no growth takes place, and by 42° C. on the other. The optimum temperature is undoubtedly 37·5° C." It is, therefore, not unlikely that persistent local reduction of temperature of a pneumonic lung, even though of moderate amount, may exercise a definite inhibitory influence on the rate of multiplication of the developing pneumococci. Fortunately, this is specially likely to be true in the worst cases of the disease, for Dr. Washbourn[4] showed from his experiments that *the greater the virulence the pneumococcus is found to possess, the more marked is its susceptibility to surrounding influences*, and the more difficult it is to cultivate. Less virulent "strains" of this organism were able to grow at lower temperatures. He found that a pneumococcus which was slightly virulent, and which would grow on artificial media at a temperature as low as 20° C., could by passages through animals be converted into a highly virulent type, which would not grow on artificial media at temperatures below 37° C.

It seemed to be very desirable, therefore, to ascertain by precise bacteriological investigation the comparative rate of growth of a given "strain" of pneumococcus at temperatures differing from each other as little as about 5° C. At my request Mr. S. Neave, M.R.C.P. Lond., at that time bacteriologist to the Hospital for Sick Children, kindly undertook this investigation in 1903, and in my Harveian lectures[5] I quoted his report. It was to this effect:—

> A colony isolated from [pneumonic] sputum was injected into mice, and the peritoneal and subcutaneous fluids resulting proved to be of exceptionally vigorous growth. In the first plating the peritoneal fluid was diluted by sterile saline solution, and an equal measured quantity was spread by a sterile glass rod on two agar plates. One was incubated at 39·4° C., the other at 32° C., resulting in 285 colonies at the higher temperature and 15 colonies at the lower. ..... In the second comparison one plate was incubated at 37·5° C., and produced 1568 colonies, while the second at 27·5° C. produced 690 colonies. In the third 38·5° C. produced 153 colonies, and 32° C. produced 42 colonies.

Mr. Neave's conclusion was:

> The above, although consisting only of one set of experiments, conclusively proves in respect of that particular strain of the organism that *a temperature of a few degrees less than that of the body prevents so active a growth.*

And he adds:

> It may be that the comparatively more vigorous growth at the lower temperature in the later experiments was due to the organism having been brought up on artificial media, and so had become less virulent. It may be noted that Dr. Washbourn points out that the non-virulent varieties have a stronger growth at lower temperatures than those of a virulent character.

These observations by Mr. Neave were made in 1903. Quite recently my friend Dr. Spilsbury, the well-known pathologist and bacteriologist of St. Mary's Hospital, has been good enough to examine the question a second time by careful investigations of his own. I quote his report in full.

"*Experiments on the cultivation of Fraenkel's pneumococcus at varying temperatures.*—The method employed was to take equal volumes of a pneumococcus emulsion in normal saline, and transfer to tubes of liquefied agar which were then poured into Petri dishes and solidified. In each experiment one set of these plate cultures was incubated at a given low temperature and a control series of plates was incubated at 37·4° C. (blood heat). At the end of a given time the number of colonies which had developed in each series of plates was counted. The plates which had been incubated at a low temperature were then kept at blood heat for a further period of two days, to ascertain whether the organisms which had failed to develop into colonies were dead or

[1] An address delivered (by request) before the Ealing branch of the British Medical Association on Dec 14th, 1910.
[2] Brit. Med. Jour., July 11th, 1885.
[3] Practitioner, 1900, p. 285.
[4] Croonian Lectures, THE LANCET, Nov. 15th (p. 1301), 22nd (p. 1378), and 29th (p. 1438), and Dec. 6th (p. 1528), 1902.
[5] The Treatment of Some Acute Visceral Inflammations, and other papers. John Murray, 1904.

only lying dormant. The result shows a difference in this respect between Culture A, which was an old laboratory stock which had been grown on artificial media for a considerable time and which was therefore hardier and more likely to survive abnormal conditions, and Culture B, which was obtained from the lung at a necropsy in a case of lobar pneumonia, the emulsion used being prepared from the first set of cultures grown upon serum.

*Experiment 1.*—Culture A was incubated for three days at 32·5°–34° C. *84 colonies* were then counted. After a further two days' incubation at 37·4° C. *104 colonies* were counted. Control cultures incubated at 37·4° C. for three days developed *112 colonies*.

*Experiment 2.*—Culture A was incubated for three days at 29·5°–31·5° C. *45 colonies* were then counted. After a further incubation for two days at 37·4° C. *167 colonies* were counted. Control cultures incubated at 37·4° C. for three days developed *191 colonies*.

*Experiment 3.*—Culture B was incubated for three days at 29·5°–31·5° C. *19 colonies* were then counted. After a further incubation for two days at 37·4° C. *25 colonies* were counted. Control cultures incubated at 37·4° C. for three days developed *116 colonies*.

These experiments indicate that a lowering of the temperature of incubation of the pneumococcus of 3½ to 8° C. *not only retards the growth* of the organism, the retardation being greater the more the temperature is lowered, but *also destroys the vitality of some of the organisms so that they are rendered incapable of growing* when subsequently placed under more favourable temperature conditions. This effect is, as might be expected, more marked in the case of organisms recently obtained from body lesions and less inured to growth under artificial conditions."

Both Mr. Neave and Dr. Spilsbury point out that while the inhibitory effect of a lowered temperature is unmistakeable in all their experiments, it is most striking in the case of pneumococcal cultivations which have been grown as little as possible on artificial media. Mr. Neave's first observation, therefore, and Dr. Spilsbury's Culture B give the clearest indication of what is likely to happen when the temperature of a pneumonic lung is reduced by the application of icebags, and it is precisely in these two instances that the inhibitory effect is most marked, the diminution in Mr. Neave's case being from 285 to 15, or a reduction of 94·7 per cent., and in Dr. Spilsbury's from 116 to 19, or a reduction of 84 per cent.

Dr. Spilsbury adds the extremely valuable proof that the inhibition of growth was not merely temporary, but that it was an actual destruction of vitality of many of the organisms.

If we put these results together in tabular form we have as follows:—

| Neave. | | Spilsbury. | |
|---|---|---|---|
| 39·4° C. | 285 | (A) 37·4° C. | 112 |
| 32° C. | 15 (=5·3%) | 32·5° C.–34° C. After 2 days at 37·4°. | 84 104 |
| 37·5° C. | 1568 | (A) 37·4° C. | 191 |
| 27·5° C. | 690 | 29·5°–31·5° C. After 2 days at 37·4°. | 45 167 |
| 38·5° C. | 153 | (B) 37·4° C. | 116 |
| 32° C. | 42 | 29·5°–31·5° C. After 2 days at 37·4. | 19 (=16%) 25 |

Surely no further proof is needed. The bacteriological evidence of the inhibitory and even destructive effect of local cold on a pneumococcal focus is undeniable, and we are thereby prepared to accept the clinical evidence of the value of the icebag in the treatment of the early stage of a pneumonia. But before stating the results of careful clinical observation on this subject, it is desirable first to mention the precautions necessary for the successful employment of this method.

The employment of icebags in the treatment of pneumonia calls for two precautions. In the first place, the size of the right auricle must be carefully ascertained by light percussion in the fourth right intercostal space. One fingerbreadth of dullness is present in this situation in every normal heart; this is an elementary fact which has not yet found its way into the text-books, yet which can be verified by anyone. In an early stage of a pneumonia an increased extent of this dullness soon becomes perceptible. If it amounts to more than a fingerbreadth and a half, and if some dullness can be detected also in the third right space close to the sternum, it is generally wise to relieve the right heart by the employment of leeches (three or four for an adult, one or two for a child) before the icebags are applied. The neglect of this precaution may imperil the success of the treatment.

The second precaution necessary is to keep the legs and feet of the patient thoroughly warm by the employment of hot-water bottles and warm woollen stockings. A third precaution is useful, especially in the case of children; it is a frequent use of the clinical thermometer by a careful nurse.

If these precautions are adopted the treatment by icebags may be practised without fear. In the earliest stage it will sometimes abort the disease. When the pneumonia has advanced so far that this is no longer possible, it will yet limit the spread of the inflammation, diminish the local pulmonary engorgement, and repress the active increase of the pneumococci. Careful examination of a pneumonic pulmonary area before and after the use of icebags shows that the dullness is less absolute, and often also less extensive, and that the air entry is considerably greater.

Clinical evidence thus confirms the bacteriological results above stated, and is confirmed by them. The two together combine into a scientific proof of the value of ice in pneumonia, as when astronomical telescopic investigation of a region of the heavens determined by careful mathematical reasoning demonstrates the existence of a new planet. If this simile excites a smile, as a comparison of small things with great, it is sufficient to reply that it is a comparison of a fact on the recognition of which the life of a man (and often the happiness of many) may depend, with facts which, however interesting, are of no immediate practical importance.

Is it too much to hope that before the next generation of practitioners pass away all medical men will be so carefully educated in the practice of percussion that they will be able to demonstrate for themselves the beneficial effect of icebags on an incipient or early pneumonia? Medicine is both a science and an art; both must be cultivated with equal care and accuracy. For the art to ignore the science is stupid: for the science to neglect the art is suicidal. The art of medicine is often in advance of the science, as in the employment of quinine, arsenic, or mercury. Yet the practical success of the art must really be based on scientific facts, and it is our business to discover these facts as soon as we can. On the other hand, the medical science which has any real claim to the name cannot be confined to the laboratory; it must be constantly in touch with an ever-increasing accuracy of clinical observation. We hear much complaint nowadays of the bacteriological ignorance of the clinician, but how about the clinical ignorance of the bacteriologist?

III. The beneficial influence of ice applied over an incipient or early pneumonia being thus demonstrated by clinical observation and confirmed by bacteriological experiment, we may next inquire whether any additional treatment is of value in the attack on the invading pneumococci. The icebag is a weapon from without. Have we any medicaments which will penetrate into the innermost recesses of the lungs, and directly by an antimicrobic action or indirectly by an influence on the tissues attack the microbes from within? Traditional therapeutic scepticism does not see how this is possible. The possibility of benefit from volatile antiseptic drugs given by inhalation has been equally the subject of therapeutic scepticism in pulmonary tuberculosis. Yet the experience of the last five years has fully demonstrated to me the extraordinary value of such inhalation, provided that it is continuous and persistent, in early pulmonary tuberculosis. Under its use the temperature falls, cough is rapidly relieved, sputum diminished and more easily effected, the body-weight quickly increases, physical signs gradually and progressively improve, and tubercle bacilli become less numerous and finally disappear. For the evidence for these statements I must refer to the clinical details of 30 cases published in 1909,[6] and of 20 additional cases published in the following year.[7]

If, then, it is now certain that continuous inhalation of

[6] Brit. Med. Jour., Dec. 11th, 1909.
[7] THE LANCET, Nov. 19th, 1910.

volatile antiseptics does in some way repress the local development of the tubercle bacilli in the alveoli of the lung, may it not be possible that the same method may be useful also in the shorter and fiercer struggle with the pneumococcus? The time at our disposal is but short, yet even a slight assistance may possibly turn the scale. It might perhaps be thought that the severe dyspnœa of pneumonia would make it difficult or even impossible for a patient to wear a Yeo's inhaler. At the earliest stage of the disease, of which I am now speaking, this causes no difficulty, and at a later stage the acute dyspnœa which might prevent the use of an inhaler can generally be relieved by the employment of leeches.

As an example of its use in a very severe case, I may mention that of a man referred to in my valedictory lecture at St. Mary's three years ago, who was acutely ill on his admission, with clinical evidence of a generalised pneumococcal infection causing pneumonia, double pleurisy, and pericarditis. All the cases with this combination of physical signs caused by a pneumococcal infection that I had previously seen had been fatal. This patient was treated with five icebags, two over each lung and one over the heart, and he wore a Yeo's inhaler, which was refreshed every hour with six to eight drops of the same antiseptic solution which has proved so useful in tuberculosis. Being anxious to give him every possible chance I requested my distinguished colleague, Sir Almroth Wright, F.R.S., to examine his blood and to see whether a "vaccine" could be prepared. Sir Almroth Wright very kindly himself investigated the blood, but it was found to be sterile. Hence, no assistance from this side was available. The patient was admirably nursed, and under the free use of ice, the employment of hypodermic strychnine, and the constant inhalation of antiseptics he made a good recovery.

This was the first case of the kind in my experience in which this happy result was obtained, and I believe that the continuous antiseptic inhalation had certainly some share in bringing it about.

IV. A combined attack on the commencing pneumococcal infection having been thus organized by the use of ice externally and of antiseptic vapours inhaled into the lung, it remains to inquire whether we can simultaneously institute a third line of attack by means of a "vaccine therapy" which shall call into more active exercise the immunising reactions of the tissues, and by a modification of the blood serum succeed in rendering the invading organisms more susceptible to phagocytosis. It must be confessed that until recently there has not seemed to be much ground for hope from this procedure, although theoretically a localised infection like an initial pneumonia would seem to be a condition which ought to be benefited thereby. Perhaps the failures hitherto may be largely due to the late stage of the disease reached before the "vaccine" has been employed.

No form of treatment ought to be judged by its failure to cure a morbid condition already of great intensity. It is quite probable that a measure which can be of essential service in the early period of an infection may be powerless when the infection is far advanced. Hence it seems clear that if "vaccine therapy" is to establish its claim to usefulness in pneumonia it ought to be employed at the earliest possible moment after the discovery of the local lesion. But I think it is also clear that it ought not to be advocated to the neglect of the other measures of which I have spoken, the usefulness of which is already demonstrated. Therapeutic methods ought not to be jealous of each other. Let them combine their forces for the cure of the patient; and let the physician welcome help from every possible source.

The advantage of a combination of these different therapeutic efforts is clearly seen in the interesting cases, 24 in number, related in the admirable paper by Dr. W. H. Willcox and Dr. W. Parry Morgan read at the Belfast meeting of the British Medical Association in July, 1909.[8] These cases appear to afford very strong evidence of the value of a vaccine treatment in pneumonia, especially when an autogenous vaccine is employed. But the authors lay stress on the fact that they did not allow the use of inoculation to make them neglect other methods of treatment, and that "where necessary leeches, sponging, icebags, cardiac tonics, oxygen, &c." were also employed. It seems not improbable that their success with the "vaccine therapy" may have been due in part to the fact that they did not rely exclusively upon it, but used other means in addition, and more especially the powerful influence of ice. It is likely enough that a combination of therapeutic methods may succeed in accomplishing a result which could not have been attained by the employment of one method alone.

The evidence of the value of a vaccine therapy in pneumonia, published by Dr. Willcox and Dr. Parry Morgan, is sufficiently strong to make it very desirable that further observations should be made on an extended scale. The plan of investigation which seems to be required is the following. Let every case of pneumonia be very carefully examined when it comes under treatment, so that the exact localisation and extent of the pneumonic foci may be ascertained. Let it then be treated at once and thoroughly by the local application of ice and by the method of continuous antiseptic inhalation. Then let *every alternate* case be treated immediately by the injection of a stock pneumococcal vaccine, to be followed as soon as possible by a vaccine derived from the patient's own pneumococci, and also from his own streptococci or any other organisms which can be cultivated. If this plan were carried out in 400 or 500 cases, half of them being inoculated and half treated similarly but without inoculation, it would soon be clearly evident whether a vaccine-therapy is or is not of value in pneumonia. If it should turn out that its value is very great, this would not invalidate what I have said about ice and about antiseptic inhalation, any more than the unquestionable value of the antidiphtheritic serum has made it less true than before that the spraying of the throat every hour with a 1 in 1000 solution of perchloride of mercury is of extraordinary and life-saving value.

V. *The right heart.*—What I have said thus far has had reference to the earliest stage of a pneumonia. The next point to which I wish to draw attention demands careful and persistent observation throughout the whole course of the disease. It might indeed be described as the key of the clinical situation. And yet it is a point which is wholly ignored in most descriptions of pneumonia, is not even mentioned in some of the most recent monographs, and is constantly, and often with fatal effect, overlooked in practice. It is the question of the right heart.

The rapidly increasing obstruction to the pulmonary circulation causes a rise in tension in the pulmonary artery and a consequent tendency to a dilatation of the right heart. The first indications of this may often be detected by careful percussion in the fourth right intercostal space as early as the second day after the initial rigor. If the dilatation of the right auricle progresses so far that the dullness extends two fingerbreadths in the fourth right space dyspnœa becomes acute and is attended by restlessness, insomnia, cardiac oppression, and general distress. At this period the application of a few leeches will give immediate relief and allow of sleep. Very soon after they have completed their work the dullness of the right auricle will be found to have diminished by half a fingerbreadth (1 cm.) or more. The relief will usually last for 48 hours, unless the pneumonic process be extremely acute. At the end of 48 hours the auricle may again be over-distended and may require a repetition of the leeches. But this second relief generally carries the patient through to the crisis.

If the right auricle has been neglected until the fourth or fifth day of the disease it may be greatly over-stretched, especially if the inflammatory congestion of the lungs is widespread. In this case there is an urgent need for venesection. If no relief is thus given by blood-letting, the cardiac action becomes feebler and feebler, not because the wall of the left ventricle is poisoned by toxin, but because the contraction of the ventricular muscle is a peristaltic wave which reaches the ventricle *from the auricles*, taking origin at the sino-auricular node, a small mass of primitive cardiac tissue situated at the junction of the superior vena cava with the right auricle; and because the obstruction in the lungs and right heart prevents a due amount of blood from reaching the left ventricle. The feebleness of the pulse, therefore, in the later days of a pneumonia is not a reason against blood-letting, as a thoughtless observer might argue; it is a strong indication of its necessity. After blood-letting the pulse will be found to be decidedly stronger.

It was not without reason that our forefathers insisted on the necessity for bleeding in pneumonia. They misunderstood its mode of action, and their mistaken theory led to great

[8] Brit. Med. Jour., Oct. 9th, 1909.

excess in practice, but the relief of distress afforded by a moderate bleeding is unmistakeable. No drug in the Pharmacopœia, nor any combination of drugs, can produce the same relief. Yet the necessity for leeches or venesection is very generally overlooked by the practitioner, for the reason that he *has not acquired the habit of determining by careful percussion the size of the right heart in every case in which physical examination of the thoracic organs is required.* Till he has acquired this habit he will be almost certain to overlook the distended right auricle in pneumonia, and his pneumonic patients will suffer much discomfort that might have been prevented, and many patients will succumb before the crisis can occur.

The precise state of the right heart is the most urgent question in pneumonia. It ought in every case, but especially in the later days of the disease, to be the first question to be determined by a careful physical examination, taking precedence of any attempt to determine the locality or the extent of the pneumonic areas. From the fourth to the seventh days the condition of the right auricle very often calls for immediate relief before the lungs themselves are examined. Yet all this is generally entirely ignored. Is it any wonder that pneumonia is so often a fatal disease?

VI. *Cardiac stimulants.*—The most powerful cardiac stimulant in pneumonia is bleeding, for thereby the excessive tension in the right auricle which is paralysing its functional action is temporarily diminished, and it is quite remarkable how promptly the auricle recovers itself when once the opportunity is given. Certain drugs can give powerful assistance to a failing heart. Of these, strychnine in hypodermic injection is much used and highly valued. Oxygen by inhalation is also often recommended. It certainly relieves cyanosis, and thus by promoting the pulmonary circulation it gives help to the heart. But though oxygen often gives relief I have never seen it save a life. And neither oxygen nor strychnine, nor both combined, are of any great service in pneumonia unless the intra-auricular tension is lowered by judicious blood-letting.

Alcohol has long been advocated as a cardiac stimulant, and undoubtedly, by its vaso-paralytic action, it indirectly relieves the strain on a failing heart. But whether it is a direct cardiac stimulant, and, if so, in what way, is still a highly debateable pharmacological and therapeutical problem. Yet the remarkable paper read before the recent London meeting of the British Medical Association [9] by my colleague Dr. W. H. Willcox and Professor B. J. Collingwood, clearly shows that the inhalation of alcohol vapour combined with oxygen has a remarkably beneficial effect in cardiac failure. This was first discovered during experimental researches on chloroform poisoning in animals by Professor Collingwood. The discovery was utilised in clinical work by Dr. Willcox, who has made a large number of careful observations and precise calculations which are given in the published paper. The authors find that the administration of oxygen bubbled through absolute alcohol in an ordinary chemical wash-bottle is a marked cardiac stimulant in cases of heart failure, that it slows and strengthens a rapid feeble pulse, improves its force and volume, and causes a considerable rise in blood pressure. Its administration is pleasant and not irritating to the patient, and it gives rise to no ill-effects.

I had the pleasure of hearing Dr. Willcox read this paper at the Association meeting, and it so happened that a few hours later I was called to see a lady at the last extremity of cardiac failure. After relieving the right heart by leeches and the injection of strychnine, and arresting vomiting by giving nutrient enemata and stopping all food by the mouth, it was advised that the inhalation of oxygen bubbled through absolute alcohol should be tried. I was afterwards informed that this measure appeared to have a remarkably beneficial action on the pulse, and that the improvement after such an inhalation was decidedly greater than that obtained by an injection of strychnine.

It seems certain that we have thus secured a remedial measure of great potency; it is one which is quite simple in use, and it ought not to be forgotten. I suspect that its action is really on the cardiac and vascular centres in the medulla oblongata rather than on the heart itself. But, however this may be, its practical effect may be invaluable in certain critical conditions. And I would add that this fact emphasises the statement of the authors of this valuable paper that "sufficient attention does not appear to have been paid to the method of administration of remedies by inhalation into the lungs." I welcome this statement for the support which it gives indirectly to the method of treatment by continuous antiseptic inhalation to which I have already referred.

VII. *Diet.*—The addition of malted milk powder to milk greatly increases its nutritive effect, and at the same time diminishes the amount of fluid in the diet. This is of special importance when the right heart is dilated. Half an ounce of malted milk powder dissolved in 2 ounces of milk may be given every hour while the patient is awake: for a child the amount may be two teaspoonfuls in 1 ounce of milk. After the right heart has been relieved by leeches it is often useful to allow copious draughts of water to relieve thirst and aid the renal excretion. Half a pint of water may be given every three hours on the day following the use of leeches or venesection.

VIII. *Sleep.*—We are all apt to overlook the great importance of securing sleep *during the first two or three nights* of a pneumonia. An effective hypnotic should always be given at this time; if there is any pain hypodermic morphine is necessary; at this early stage it is quite safe. In the later days morphine must not be given unless the right heart has been relieved, and such relief will often enable the patient to sleep without any hypnotic. Every night's sleep is of importance in pneumonia.

These are, in my opinion, the essentials for a successful treatment of this common and fatal disease. If they were remembered and acted upon by every practitioner I believe that the mortality might be reduced very greatly, perhaps by as much as 50 or 60 per cent.

Weymouth-street, W.

[9] THE LANCET, August. 6th, 1910; Brit. Med. Jour., Nov. 5th, 1910.

# THE EDUCATION OF THE DEAF:

## ITS PRESENT STATE IN ENGLAND, WITH SUGGESTIONS AS TO ITS FUTURE MODIFICATIONS AND DEVELOPMENT.

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### I.

DURING the three years that I have been working as medical inspector of the London County Council schools for the deaf I have had ample opportunity for judging of the working of the present system of deaf education in London, and the opinion to which I have been led thereby has convinced me that the whole system of deaf education in this country needs thorough reorganisation upon wider and more extended lines than is at present the case. A good deal has been achieved by the working of the Elementary Education (Defective and Epileptic Children) Acts of 1899 and 1903, but there is still much to be done before the country can turn out its deaf-mutes as reliable and self-supporting citizens, able to compete with their more fortunate hearing fellows in such a way that the percentage of those who become burdens upon the State is reduced to a minimum. The work of instructing the deaf is a very highly specialised branch of the teaching profession, requiring untiring patience and a high degree of adaptation. Indeed, if genius be an "infinite capacity for taking pains," then the teacher of the deaf has to be a genius of the first order. Only an intimate acquaintance with the work of this devoted body of men and women can give any idea of their labours, of the results which they achieve, or of the obstacles which they have to surmount. Moreover, the looker-on can detect the causes of their difficulties and the reasons why so many of their pupils fail to reach that standard of excellence to which theoretically they should attain under the modern system, and why a certain number of them have either to revert entirely to sign and manual methods of expression, or at least to supplement spoken language therewith.

To assert that the present system is a failure would be manifestly incorrect, but to say that it is a comparative failure is to enunciate a truism which can be established by facts patent to all who care to approach the matter with minds unbiassed by prejudice. That the teachers of the deaf are to blame for this comparative failure is most certainly not the case. The brilliant results which they can

achieve in an, at present, limited number of cases demonstrates clearly their capacity. There is no more self-sacrificing, hard-working, or devoted profession to be found, but its members are working under conditions in which it is impossible to reach perfection: they are contending against many obstacles, of which imperfect classification, inadequate legislation, and lack of sufficient financial assistance form only a small part. At the same time I would not wish it for one moment to be thought that the education of the deaf is not progressing. It is undoubtedly moving forward, but in the present state of our knowledge it is not moving with sufficient rapidity, and although deaf education is probably in a better state than it has ever been, it is in that stage of its evolution when those who are responsible for its well-being require to pause for a space and take a full and careful survey of its condition, with a view to its complete remodelling and reorganisation upon a firmer and wider basis, founded upon past experience and more accurate knowledge. The workers in deaf education comprise a body of young, active, and energetic men and women, who, starting with the experiences left them by their predecessors, are full of new ideas, have wider vision and greater capacity for improvement. They are beginning to see what Kerr Love in his "Study of the Deaf Child" has so ably pointed out, that deaf education must be based, not upon the consideration of different systems, but upon the study of the deaf child as an individual. Unless this fact be universally recognised, not merely by teachers of the deaf, but by the public at large and by legislators especially, the education of the deaf can only move slowly, with many halts and stumblings, towards greater perfection, and cannot reach that goal until several generations are past and gone and much public money wasted.

The whole question is one which must be looked upon from many different aspects—medical, hygienic, physiological, social, eugenic, and financial—and it is my intention in this series of papers to show how, by a due regard to these varied points of view, our present system of deaf education can be remodelled in such a way as to give far better results than have been attained hitherto—results that will fully justify any increased expenditure and will greatly increase the happiness, usefulness, and value to the State of a body of citizens whose only misfortune is, in the great majority, the impairment or loss of one of the most important, if not the most important, of their sense organs.

I have stated that the system of deaf education, as at present constituted, is a comparative failure. Such an assertion must be fully justified. With a view to ascertaining the progress of the scholars under present methods I recently introduced into the London County Council deaf schools a system of marking their attainments as regards articulation and lip-reading. This system is a modification of that suggested by Alexander and Mackenzie.[1] It classifies scholars in four groups—"Very good," "Good," "Sufficient," and "Insufficient"; and the test applied to 548 children in our deaf centres gave the results shown in the annexed table. Strictly speaking, these results apply only to 390 of the scholars (203 boys and 187 girls), as 158 (96 boys and 62 girls) were too young or had been too short a time at school to permit of their being judged with any justice to themselves or to their teachers. They have, however, been included in the table as "not marked."

| Mentality. | | Normal. | | | Poor, sub-normal, or mentally defective. |
|---|---|---|---|---|---|
| Speech at commencement of education. | | None. | Residual. | Natural. | Not specified. |
| Articulation ... | V.G. | 17 | 23 | 42 | 2 |
| | G. | 67 | 29 | 13 | 5 |
| | S. | 53 | 5 | 1 | 12 |
| | I. | 60 | 0 | 0 | 61 |
| Lip-reading ... | V.G. | 26 | 26 | 24 | 1 |
| | G. | 87 | 20 | 14 | 4 |
| | S. | 54 | 9 | 7 | 13 |
| | I. | 30 | 2 | 11 | 62 |
| Not marked ... ... ... | | 120 | 15 | 5 | 18 |

[1] The Functional Examination of the Organ of Hearing in Deaf-mutes, Archives of Otology, vol. xxxvii., p. 507.

It will be noted that this table classifies these children primarily on a basis of mentality, and in order to be quite fair the 98 placed in the column, "Poor, subnormal, or mentally defective," may be left out of consideration altogether. The remaining 450 children of normal mentality are further grouped, according to the amount of speech which they possessed at the commencement of their education, into those who started with no speech at all (inclusive of a few in whom residual speech had been lost by neglect), those with residual speech, and those with natural speech. 140 of these scholars were too young or had been an insufficient time at school to allow of their being marked, leaving 310 whose progress under the present system of deaf education could be fairly accurately judged by this process of marking.

Taking, first, their powers of *lip-reading* it will be noted that of the 197 children who never had any speech 113, or 56·8 per cent., were "very good" or "good," whilst 84, or 42·6 per cent., were "sufficient" or "insufficient"; whilst of the 113 who were lucky enough to be left with residual or natural speech 84, or 73·5 per cent., were "very good" or "good," and only 29, or 25·6 per cent., were "sufficient" or "insufficient." This tends to show how much the retention of speech, which means largely the retention of motor memories of speech, helps in the acquirement of lip-reading—that is to say, in the appreciation of speech movement in others. It will be noted further that 30 of the non-speech children, or 25·1 per cent., were "insufficient"—that is to say, *absolute failures* at lip-reading—against 13, or 11·5 per cent., of those who had residual or natural speech.

Surely the present system of deaf education cannot be the best when it gives results such as these, in which 42·6 per cent. of the scholars in whom speech was originally absent are "insufficient" or only "sufficient" in their knowledge of lip-reading, "insufficient" meaning that they are incapable of reading other people's lips sufficiently to gather what they are saying, and "sufficient" that they are only a little better.

The teaching of lip-reading is, however, only one part of the aim of deaf education; it has also to give speech to the dumb—that is to say, it must so teach them articulation as to make their speech intelligible to those with whom they come in contact in after life. How many people—apart from teachers of or workers among the deaf—will not admit that they have difficulty in understanding the conversation of the average educated deaf-mute? How is this duty fulfilled in respect of the children who are under discussion in this analysis? Of 197 boys and girls who had no speech on admission, only 84, or 42·6 per cent., had articulation which could be marked, by the teachers themselves—who, from being continually in contact with the deaf, can probably understand them better than the average person—as "very good" or "good"; and only 17, or 20·2 per cent., of these (8·6 per cent. of the whole 197), belonged to the former category. Of those marked "sufficient" or "insufficient" (and the majority of the former would probably be understood with difficulty by anyone who was not used to the deaf), there were 113, or 57·3 per cent.; and of these, 60, or 53·09 per cent. (30·4 per cent. of the whole 197), were "insufficient"—that is to say, *oral failures*, children to whom the oral system had failed to give speech.

In strong contrast are the results with the 113 children who had residual or natural speech on admission. Of these, 107, or 94·6 per cent., were "very good" or "good" (the former, as is seen by the table, being in excess), whilst only 6, or 5·3 per cent., were "sufficient," and none were "insufficient." Here the system had succeeded in preserving to the great majority of its pupils the speech which they had retained when they had become deaf. I shall have to refer to this later when I come to the discussion of hereditary tendencies to speech in the congenitally deaf.

There is no need for my present purpose to analyse results under classification into congenital or acquired, totally or partially deaf. My object is rather to show that the present system does not produce a sufficiently high percentage of successes under existing conditions, and I consider that the figures just given amply bear out my contention that those who are now working have, under the present *régime*, too uphill a battle to fight, too many obstacles to contend with, too hard a task to master, to enable them to achieve the

successes that should come rightly from modern methods of deaf education.

That the failures are in greater proportion than should be the case is also demonstrated by the number of deaf persons who revert to signs as a method of communication, although I am inclined to the opinion that this reversion is partly due to the baleful effects of so-called missions to the deaf.

It is somewhat difficult to say definitely how long the oral system of deaf education has been in vogue in London, as it was practised to some extent by Joseph Watson at the British Asylum for the Deaf and Dumb (now the Old Kent-road Deaf School), founded in 1792. Watson was the nephew of Thomas Braidwood, who had taught privately in Edinburgh and in London prior to 1792, keeping his methods secret. Boswell[2] mentions that Dr. Johnson visited Braidwood's school and gave liberal praise thereto in his "Journal of a Tour to the Hebrides." "When he visited it," says Boswell, "a circumstance occurred which was truly characteristical of our great lexicographer. 'Pray,' said he, 'can they pronounce any *long* words?' Mr. Braidwood informed him that they could. Upon which Dr. Johnson wrote one of his *sesquipedalia verba*, which was pronounced by the scholars, and he was satisfied."

The birthplace of the oral system was, therefore, in the British Islands, but, strange to say, between 1809, when Watson wrote a book upon his methods, and 1865 it was so completely abandoned that in the latter year Van Asch wrote that "the articulation of the deaf and dumb is of rare occurrence in this country." It will be remembered that the deaf child who makes so pathetic a figure in Dickens's "Dr. Marigold's Prescriptions" was not taught upon the oral system. So completely had oralism disappeared in this country that when it was revived it was as the "German System," and as such it is largely known now—an interesting example of the regard paid to home products!

Kerr Love[3] has given the reasons for this remarkable decline from oralism to manualism as, first, that oralism was difficult for both child and teacher. I would here ask the reader to take note of the fact that Watson would not take pupils until the age of 9 years, a point of very great importance, as I shall show later; and, secondly, that the Abbé de l'Epée unselfishly conceived his sign and manual method and carried it out openly and above board, whereas the method practised by Braidwood in Edinburgh and London was exploited for his personal and family benefit and its details carefully kept secret.

There is no better exposition of the advantages of oralism than the proposition laid down by Watson as the basis of his teaching articulation. This proposition is quoted by Kerr Love,[4] and I quote it again here:—

> Words and phrases must excite ideas in us by association, and they excite ideas in us by no other means. ..... The more numerous the means of association the more perfect the recollection, or, in other terms, the more frequent the recurrence of words and their corresponding ideas to the mind. Thus persons who have all four means—that is, who can hear, speak, read, and write—retain a discourse much better, and have far greater facility in expressing themselves, than persons possessing only two of them, that is, illiterate persons who can hear and speak, but who cannot read nor write. Now, as deaf and dumb persons educated without articulation can only have two of the means—that is, the impressions made upon the eye by characters, the action of the hand in writing—can it be questioned that we render them an essential service by adding the actions of the organ of speech—a very powerful auxiliary, since by it words become, as it were, a part of ourselves, and more immediately affect us.

These words convey, better than any other, the superiority of oralism over other methods of deaf education.

The special teaching of the deaf child under the London School Board was begun in 1874, at Bethnal Green, with a class of about four or five children. Here a compromise was made between the two systems, teaching being partly oral, partly sign and manual.[5] In 1877, however, a pure oral school was started, and after the Milan Congress in 1880 oralism was more generally adopted, and it received great impetus after the schools became certificated by the Board of Education in 1893 and inspected by Mrs. Thurston Holland, who was a strong oralist. It was not until 1893 that an Act was passed making the education of the deaf compulsory, and not until 1907 that the ratepayer became taxed for the whole cost.

[2] Life of Johnson, Croker's edition, 1866, p. 403.
[3] Report on the State of Education in British and Irish Schools for the Deaf, p. 5.
[4] Ibidem, p. 6.
[5] London at School, by H. R. Philpott. London: Fisher Unwin, 1904, p. 258.

The oral system has, therefore, been practised in our London schools for some years now, but it cannot be said to have had a fair chance until the past seven or eight years, as before then normal deaf children were mixed with mentally defectives and other scholars incapable of benefiting. These cases are now sent to the special institution for blind and mentally defective deaf-mutes at Homerton. I wish it to be understood that these remarks refer entirely to our State schools, and that I have not alluded to any results obtained in any other deaf schools in London. I shall, however, do so later.

The brief and concise sketch that has been given will serve to show that the education of the deaf of to-day is on a firmer basis than it has been hitherto. It is when a system has become established upon a sure foundation and has attained some degree of stability that the time has arrived at which it is advantageous to glance around, and, as it were, to take stock. By that means it can be seen what points are good and require developing, what points are weak and require strengthening, what points are uncompromisingly bad and require eliminating. I think that deaf education has reached that period now. The present system has been working for seven or eight years; it is high time to analyse results, to take stock, and to find out where is the profit and where the loss.

The results which I have already given above demonstrate the fact that if a number of scholars be taken consecutively and without selection, save as regards mentality, the successes do not compare as favourably with the failures as the theory of modern deaf education leads one to expect. Our first duty is to find out why this is so. Why, among children of normal mentality, who were either born deaf or who became deaf so early in life that they commenced their school instruction without the gift of speech, who are, in other words, both deaf and dumb, do we find that only 42·6 per cent. have learned to articulate well enough to merit classification as "very good" or "good," and that those who are absolute oral failures reach the high percentage of 30·4?

I believe that the answer to this question is two-fold—too late a commencement of education on the one hand, and a defective classification of the deaf child on the other. It is these two factors which will occupy mainly these articles, together with one or two matters of minor import so far as deaf education is essentially concerned, but of great importance as contributories to success. As regards the two main points, a careful examination of the physiological conditions under which the normal child acquires speech will demonstrate the former, whilst the application of the results of school medical inspection will modify and improve the latter.

Before entering upon the discussion of these two points, which will occupy the two succeeding articles, it will be as well to inquire into the results obtained elsewhere in the metropolis, and for this purpose I shall take the well-known school of the Association for the Oral Instruction of the Deaf and Dumb, at 11, Fitzroy-square. This institution, one of the most deserving charities in London, was founded in the year 1870 by the late Baroness Mayer de Rothschild, who, with the generosity so characteristic of the charity of her community, extended its benefits to embrace all deaf children, irrespective of denomination.

In the words of Mr. Sibley Haycock, the director, to whom I wish to express my indebtedness for the information here given: "The Fitzroy Square Oral School for Deaf Children is quite purely oral. The young pupils are trained to understand and to use spoken language from the beginning. Speech is introduced before the children can themselves articulate, and from the first day of their school life we begin to lay the foundations of the speech habit. They are talked to, directed, and instructed by speech alone. Later on, writing is used, but only to the same extent as in ordinary hearing schools. *Signs and finger spelling have no place in our system.* Not only do the teachers make no use of them, but they are rigidly excluded from the school-room. The little children in the kindergarten are allowed to express themselves by means of natural gestures and pantomime, but these forms of language are displaced as soon as possible by spoken and written words. Our aim is to make speech the medium of thought." (The italics are mine.)

I would draw attention to the fact that the method of instruction thus outlined appears to be based upon the lines of the normal physiological acquisition of speech by hearing

children, natural gesture and pantomime being allowed with the very young children in the kindergarten class, to be dropped with the acquisition of speech. A certain amount of gesture and pantomime is natural, but the greater the command over speech language the less are they used. The savage and the illiterate employ gesture more than the educated, and the savage more than the uneducated white. Indeed, the command of speech language can be tested by the putting of questions which can be answered by speech or by speech assisted by gesture, as, for instance, the request to define a spiral staircase. In the teaching of the deaf, therefore, where it is of paramount importance to teach as much speech as possible, any language by signs or gestures must be rigidly excluded as soon as elementary speech teaching is begun.

The average age of admission to 11, Fitzroy-square, since 1894, excluding pupils who had been under instruction before coming to the school, has been 5·8 years. The age at which the Act insists that education shall commence in the case of deaf children is 7 years, and, although a grant will be given by Government at the age of 5, it is seldom that pupils are admitted to the London County Council deaf centres before the age prescribed by law. I point this out because it is one of my contentions that the best results are not obtained by the oral system on account of the late commencement of deaf education.

The percentage of oral failures at Fitzroy-square, where the pupils are admitted at least one year earlier, taking the average, than in the London County Council schools, has been the subject of inquiry by me, and the reply of Mr. Sibley Haycock is as follows: "I can give no more definite answer to this question than to say that of the 18 children who have left school since my appointment here in 1907 we have had five oral failures—i.e., as regards speech and lip-reading—and these five were either subnormal as to mentality or entered the school quite late in life, and attended intermittently. One boy, for example, was 14 before receiving any instruction. This number roughly represents 27·7 per cent. of the pupils who have left since 1907."

In the analysis which I have given from our London County Council deaf centres, the subnormal in mentality have been separated and not taken into account, and we have seen that of the remainder of normal mentality the percentage of oral failures was 30·4. It is reasonable to consider that, were the oral failures at Fitzoy-square computed in the same way—viz., if those whose mentality was poor, subnormal, or defective were segregated—the percentage would be less than 27·7 and would therefore compare even more favourably with the results given above. One must, however, take into consideration, when making the comparison, that the teaching of this school has been consistently oral, and *purely oral* for 40 years—since 1870—whilst it was not until 1877 that an oral school was commenced under the auspices of the London School Board, and that, as I have said, the oral system has only had a fair chance under the Board's successor during the past seven or eight years.

I have already said that the education of the deaf is a matter involving wide issues, one which can be looked at from many points of view. I shall endeavour here to discuss it from some of these aspects, and I shall, therefore, postulate the present needs of this great and many-sided question as follows:—

1. The need of a classification of the deaf child which shall be upon a more scientific and more comprehensive basis than that at present in use. In dealing with this matter, I shall review the methods of education in other States and countries, and I shall make suggestions as to the best classification to be followed.

2. The need that the education of the congenitally deaf and of those very deaf children who, by reason of the early age at which they acquired their deafness, have not developed speech, should be commenced at a much earlier age than is now the general rule, in order that they may receive that physiological, in contradistinction to pedagogical, training to which they have as much right as the normal hearing child.

3. The need for the exercise of greater care of the deaf child whilst at school, by care committees and similar means, whereby it can be assured that his attendance at school is regular, his meals are adequate, that he is not neglected or exploited by bad or immoral parents, and that he is removed from the influence of bad companions and bad home surroundings.

4. The need for encouragement of the deaf child to mix with hearing people. To this end I would advocate a longer course of education and supervision by teachers, and, not unimportant, a more careful supervision of religious missions to the deaf.

5. The need to make an endeavour to diminish the number of deaf children requiring special education by the application of eugenic principles to deaf-mutism in the case of the congenitally deaf, and by a better care of the ears in children by medical practitioners.

1. *The need for a scientific classification.*—In order to understand fully the necessity for a better classification of the deaf child and its important bearing upon deaf education, it will be necessary to review briefly the methods at present obtaining in those countries in which such classification exists. By this means the best characteristics can be selected and the errors avoided.

Taking first *Germany*, it will be a surprise to many readers to learn that in deaf education the Germans are certainly lacking. Every deaf child is taught by the oral system, and by the oral system alone. "The German plan," says Kerr Love,[6] "of teaching the deaf by the universal application of the oral method is like the fitting of all kinds of sight defects with one type of eye-glass." Apparently in this country all types of deaf child are herded together to be taught on one system. In Berlin, it is true, many of the semi-deaf are sent to the board schools, where special arrangements are made for them, and there is in the same city a special school, instituted in 1907,[7] for "hard of hearing" children, with specially trained teachers, but it includes not only the hard of hearing children of the most varied capacity, but also deaf-mutes with residual hearing.

As a matter of fact, Germany, supposed to be so much to the fore in matters educational, but who is, by her methods, in danger of turning out uniform machines rather than rational men and women, has no proper deaf classification, and educates all her deaf by rote, without any regard to the deaf child individually.

For the sake of contrast, we will take *America* next, where is to be found a quite different state of affairs. There no special system is to be met with, but a deal of experiment. The period of instruction lasts longer (10 to 12 years in comparison with eight in Germany), and this tendency to keep the deaf child longer at school is further emphasised by a movement to start his education at an earlier age. Both these tendencies are, in my opinion, valuable, as will be seen later. Further, at the Gallaudet College in Washington the deaf youth of both sexes can take a university course and graduate like their hearing fellows. Altogether, as Kerr Love says, more money is spent on the deaf child in the United States than in any other country in the world, "and although not the shortest, nor the cheapest, nor in any sense the best way, this is one way of getting at the truth—and the Americans will get at the truth whatever it costs."[8] In this country at least a system of scientific and practical classification is being slowly worked out by experiment.

In two of the smaller states of Europe the education of the deaf is based upon a scientific classification, which, whatever may be its errors, takes into account the deaf child as an individual. These are *Schleswig-Holstein* and *Denmark*. The former, which has a population of about a million and a quarter, had some 132 children in its two deaf schools in 1906, the proportion of the semi-deaf being 30 per cent. They are classified on a basis of mentality. All go to a preparatory school, where after two years the dullest ("Class C") are set aside and allowed the help of free signing in addition to oral training, which, as in Germany, is the "system." The brighter ones, classed as "A" and "B," are removed to another school to be taught orally.

In *Denmark* the deaf-mute ratio is about 1 to 1600 of her population, and in 1906 the deaf children of school age numbered about 334. All are first sent, as in Schleswig-Holstein, to a preparatory school, which is situated at Fredericia. After one year these are classified according to their amount of hearing. Those who have residual hearing are drafted to a school at Nyborg, to be trained orally, no

[6] The Study of the Deaf Child, p. 4.

[7] Reinfelder: Schwerhörigkeit und Hörschule, Die Jugendfürsorge, 1909, Heft 3.

[8] The Study of the Deaf Child, p. 6.

distinction being made as to mentality. The totally deaf remain at Fredericia for another year, when they are again reviewed, this time from the mental standpoint, and the mentally dull are passed on to a school at Copenhagen, to be taught by the manual alphabet. The totally deaf of good mentality remain at Fredericia to be instructed by the oral method. This system has its faults, but it is rational and scientific, for it aims at a classification which takes due note of the individual capacities of the child, and is based upon the double foundation of mental capacity and residual hearing.

In *Russia* it is said[9] there are over 200,000 deaf-mutes, but only four educational establishments. For 30 years signs have been entirely abandoned in favour of oral teaching. Judging by the writer quoted, the deaf that are taught are taught well, especially by Mr. Enko, the present master of the Imperial Deaf and Dumb School. I am, however, unaware of any system of classification in this country.

In *Italy* there is no law to oblige the Government, on the one hand, to give, and the deaf, on the other hand, to receive, an elementary education, so that 73 per cent. remain in ignorance and isolation. Charity, however, provides for about two-fifths of the deaf who are of the age and condition to be admitted to a school. Although theoretically purely oral, practically the education offered is by a combined method. Further, although the necessity for classification of the scholars is admitted in theory, it is ignored in practice.

*France*—where the Abbé de l'Epée founded his world-famous school in 1760, and which was thus the pioneer country in deaf education a century and a half ago—is by no means in the foremost rank in that great work now. It numbers 65 schools for the deaf, some belonging to the State, others private, others managed by the clergy (priests or brothers), and others again managed by religious communities. These schools contained, in 1907, 3894 children. According to M. Adolphe Bélanger,[10] however, no classification of the pupils is attempted.

In *Holland* there are four schools—at Groningen, St. Michiels-Gestel, Rotterdam, and Dordrecht. These all originated in private charity and enterprise, there being no Government compulsory education for the deaf. Instruction is mainly oral, and there is some attempt at classification in the two large institutions at Groningen and Rotterdam, where the classes are more or less divided on a mental basis. There is a "class for abnormals" at the former school, and at Rotterdam a "class for very dull children." At Groningen there is also a special class for semi-deaf children.

Passing now to our own country, it will be found that the three kingdoms are not particularly united in their methods. In *Scotland* the system of instruction is that known as the combined method.[11] Scotland is, however, lucky in possessing an enthusiast in deaf-mute work in Kerr Love, whose knowledge of the deaf-mute and his education is unrivalled. Largely owing to his exertions a system of classification is being evolved. Knowing Kerr Love as so persistent an advocate for the study of the deaf child and the subordination of all systems and methods to him, it can be said with confidence that, if the authorities in Scotland will but be guided by the experience and scientific reasoning of this authority, that country will take first rank among the deaf-educating nations.

*Ireland* has no legislation as to deaf education, and there is no compulsion for the deaf-mute. Instruction is carried out at Belfast, Cabra (Dublin), and Claremont. The teaching is mainly manual, there being a small oral school at Claremont, near Dublin. Classification is apparently practically non-existent.

In *England* classification is in a condition of evolution; it is, therefore, all the more important that those who are in authority should have the matter laid before them in all its aspects. This is especially the case in London, where deaf education is, I hope, on the eve of important changes. The present arrangement in the metropolis—that under the London County Council at least—is that there are seven day-schools and three semi-residential schools with a roll of between 600 and 700 scholars. These schools are scattered about London, so as to serve different districts as far as possible. Instruction is oral, except at Homerton, a semi-residential school to which the mentally defective and blind deaf-mutes are sent, with a certain number of oral failures. The method in use there is adapted to the individual child. The sexes at Homerton and at the seven day-schools are mixed, but at two of the semi-residential schools, at Wandsworth and Anerley, they are separated, girls going to the former and boys to the latter. These are in the nature of advanced schools, children between the ages of 13 and 16 attending them and being instructed in dressmaking, laundry work, bootmaking, tailoring, carpentry, and baking. Laundry work, bootmaking, and carpentry are also taught at Homerton.

It will be seen that in London some endeavour at classification is made upon a basis of mentality, and as I have already pointed out it was not until some provision for mentally defective deaf-mutes was made by the opening of the Homerton school that the oral system really had a fair chance given to it. There is, further, an additional classification based upon residual hearing now beginning. My great object is to see the scheme of deaf education embracing not only the very deaf and the semi-deaf but the deaf of all and every degree. As long ago as 1906 I drew attention to the neglect of the slightly deaf child in England[12]; and the following year I read a paper upon the same subject before the Second International Congress of School Hygiene held in London.[13] Since that time the progress of school medical inspection has been such that we are able to detect some at least of the deaf children in the elementary schools, and these are specially seen by me with a view to educational treatment. Of the slightly deaf among them a number during the past year (1910) has by this means been put in the way of treatment, whereby their deafness has been arrested and they have been able to return to their original school. Others have been judged able to return to their original schools provided they are put in the front row.

The greatest step forward that has been made in our London system during 1910, however, has been the institution of special classes for "hard of hearing" children, by which term is meant those scholars who are too deaf to be educated in the elementary school, even if placed in the front rows, but are not deaf enough to be put among deaf-mutes and very deaf children. The success of the first of these classes is undoubted, and it is sincerely to be trusted that others will shortly be opened. The lines upon which they should be run will be discussed later, but I am pleased to say the idea is that advocated by me in 1908.[14]

It will thus be seen that the evolution of a system of classification is in London in an active stage.

Having thus detailed the state of deaf education in different countries in the civilised world it remains to be seen what improvements can be made. The first question for discussion is, therefore, What would be the most practical scheme for the classification of the deaf child for purposes of education, and the one most likely to give the best results?

*(To be continued.)*

[9] THE LANCET, July 9th, 1910, quoting the "Novoe Vremya."
[10] Report of the International Conference on the Education of the Deaf, 1907, p. 54.
[11] Addison: Ibid., p. 110.
[12] Slight Deafness in Children, British Journal of Children's Diseases, September, 1906.
[13] The Problem of the Deaf School Child, Transactions of the Second International Congress of School Hygiene, London, 1907, vol. ii., p. 839.
[14] Deafness in Relation to School Medical Inspection, British Journal of Children's Diseases, November, 1908.

DEVON AND CORNWALL EAR AND THROAT HOSPITAL, PLYMOUTH.—The annual meeting of the subscribers to the Devon and Cornwall Throat Hospital was held on Feb. 10th. The medical report was satisfactory, and showed an increase in the number of operations. This, the committee states, "was largely due to the inspection of school children, and raised the question as to their treatment. The State now insisted on the treatment of these children for various defects, and as in other cases where the State insisted on treatment the State should pay for it. It was hardly fair to the institution or to the honorary medical staff that the whole burden should be thrown on them." The financial statement showed a small favourable balance. The meeting decided to enlarge and improve the hospital at an estimated cost of about £2000, and a special appeal will be made for that object.

# NOTE UPON THE EXAMINATION, WITH NEGATIVE RESULTS, OF THE CENTRAL NERVOUS SYSTEM IN A CASE OF CURED HUMAN TRYPANOSOMIASIS.[1]

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THIS is the first c ase in which "a chance has occurred of examining a cured case of human trypanosomiasis post mortem," according to the statement of Mr. C. A. Wiggins, the acting principal medical officer of the Uganda Protectorate, who has kindly forwarded me the tissues for microscopic examination.

*Summary of the history of the case.*—A Sikh, belonging to the 4th K.A.R. (aged 30 years at death), was found to be suffering from trypanosomiasis in June, 1905, and received treatment with inorganic arsenic. The previous history, as far as ascertainable, compiled from extracts of reports and history sheets, is given in the account below, but, in brief, it may be assumed that the drug was given intermittently for 18 months or more and pushed till toxic symptoms of neuritis, mental dulness, &c., rendered further energetic treatment impossible; trypanosomes were then no longer obtained by puncture of the glands. Unfortunately there is no note of lumbar puncture having been performed until a few months before death, therefore we do not know whether invasion of the sub-arachnoid space ever occurred either before or after the treatment. But it is probable that trypanosomes were never present in the cerebro-spinal fluid, for if they were the symptoms of sleeping sickness would in all probability have come on in spite of treatment by atoxyl. Sir David Bruce in December, 1908 (that is, three and a half years after the trypanosomiasis had been discovered), saw this man and stated that he appeared to be in excellent health. A year later he was seen by Captain A. E. Hamerton, R.A.M.C., and Captain H. R. Bateman, R.A.M.C., who reported no symptoms of sleeping sickness. They made a very careful investigation of the blood, both by microscopic examination and by experimental injection into monkeys; the results were negative. In June, 1910, lumbar puncture was performed, and 17 cubic centimetres of fluid were withdrawn; the centrifuged fluid showed no lymphocytosis or trypanosomes; and injection of the fluid into a monkey was followed by negative results. The patient was attacked with pneumonia in August, 1910, and he died three days after admission to the hospital. At the post-mortem examination grey hepatisation of the whole right lung was discovered. Beyond fibrosis and induration of the cervical and inguinal glands there was nothing noteworthy in the appearance of the organs and tissues. The brain was quite normal in appearance, and there was no excess of fluid. It may be mentioned that this man had contracted syphilis on July 27th, 1906, and he was treated for some time with mercury, and a note on Feb. 15th, 1908, is as follows: "Condition the same as August 6th, 1907, but no trypanosomes found in blood or glands, due to fact of taking mercury for syphilis."

*Histological examination.*—Sections were prepared of portions of the cerebrum, cerebellum, and medulla oblongata, by all the methods which I have previously adopted for the examination of the tissues in cases of sleeping sickness. I found no trace of the characteristic meningeal and perivascular infiltration, nor of gliosis. Sections of the spleen, liver, and kidney were also examined with negative results. I have shown that there is a parallelism between the intensity of the signs and symptoms of sleeping sickness and the diffuseness and intensity of the lymphatic perivascular infiltration with lymphocytes and plasma cells which is the main cause of the clinical phenomena. It may be asserted that this case proves that human trypanosomiasis is curable, but it does not prove that sleeping sickness is curable, for I contend that the diagnosis of sleeping sickness can only be made when there is proof that the trypanosomes have invaded the sub-arachnoid space. The case emphasises the importance of early diagnosis of the infection and the value of early energetic treatment by organic arsenic preparations. How far the administration of mercury assisted to complete the cure is uncertain.

The previous history of the case as far as ascertainable (compiled from extracts of the reports and history sheets of Dr. H. B. Owen, medical officer to the Civil Hospital, Entebbe), may be summarised as follows:—

June 22nd, 1905: Trypanosomiasis. Received treatment inorganic arsenic. Dec. 4th, 1906: Gland puncture. Trypanosomes +. 6th, 7th, 16th, and 17th: Injections 2 c.c. atoxyl 20 per cent. 18th: Glands trypanosomes +. 28th: Glands trypanosomes −. Atoxyl 20 per cent., 2 c.c. 29th: Repeated atoxyl 20 per cent., 2 c.c. Jan. 1st, 1907: Glands trypanosomes −. Feb. 8th: Glands trypanosomes −.

*Condition.*—Arsenical neuritis. Drowsy-looking. Rheumatic pains. August 6th, 1907: Condition far from satisfactory. Irregular fever, rapid pulse. Dull and stupid. Cervical glands enlarged. Trypanosomes not found in glands since March. Energetic treatment with arsenic impossible owing to symptoms of poisoning rapidly appearing. Feb. 15th, 1908: Condition the same as on last date, but no trypanosomes found in blood or glands, due to the fact of taking mercury for syphilis (contracted July 27th, 1906).

*General condition.*—Dec. 16th, 1908: Strong, well nourished. No tremors. Reflexes normal. Gland puncture and blood examination trypanosomes −. Differential count. Lymphocytes 70 per cent. Some tendency to drowsiness when unoccupied. Last treatment, two injections kharsin, May, 1908. 18th: Proceeded to Mpumu to do duty with the Royal Society's Sleeping Sickness Commission. Report by Sir David Bruce—"This man appears to be in excellent health." Returned to Entebbe. Dec. 16th, 1909: Report by Captain Hamerton and Captain Bateman, Sleeping Sickness Commission, Mpumu—"No symptoms of sleeping sickness."

*Blood examination.*—Peripheral blood: Negative results, 14 occasions. Centrifuged peripheral blood: Results negative. Blood from median basilic vein: Results negative. Blood from median basilic vein centrifuged: Results negative. Dec. 16th, 1909: 4 c.c. blood from median basilic injected into monkey. 29th: 5 c.c. blood from median basilic vein injected into monkey. First monkey examined 15 times; results negative. Second monkey examined 12 times, with negative results. June 13th, 1910: Lumbar puncture 17 c.c. Cerebro-spinal fluid abstracted centrifuged. Trypanosomes −. No excess white cells. 12 c.c. injected into monkey. Monkey examined twice weekly over one month; results negative.

*General habits.*—Intemperate. Had had gonorrhœa and syphilis.

*Post-mortem appearances 14 hours after death.*—Body of lean but in no way emaciated man. Externally the cervical and inguinal glands were small, hard, and shotty. Chest: Parietal and visceral pleura adherent right side, due to recent pleurisy. The right lung weighed 58 oz. On section the whole lung was in a state of grey hepatisation. The left lung weighed 14 oz. Pleura and lung substance normal. Heart: Weight 12 oz. Right heart distended with blood clot. All chambers and valves normal. The glands at the root of lungs and around bronchi and trachea were enlarged and soft, and some were purulent. Microscopical examination of this pus showed organisms resembling pneumococci. The liver weighed 89 oz. and was enlarged and congested. On section it was soft and friable. Probably some fatty change. No obvious fibrotic changes. The spleen weighed 14 oz. It felt hard to the knife on section, was pale in appearance, and there was an excess of fibrous tissue on cutting open. Kidneys: Right, weight 5 oz.; left, 6 oz. Both were swollen, the kidney substance bulging from the capsule when cut into. Both capsules were a little adherent. Cortices undiminished. The whole kidney substance appeared a little paler than normal. The pancreas and suprarenals were normal. The stomach was slightly dilated; no gastritis; some post-mortem staining. The intestines were normal; mesenteric and retro-peritoneal glands not enlarged. Brain: Calvaria normal. Weight of brain, 52 oz. No thickening of membranes. Brain substance normal. Ventricles normal in size and no excess of fluid. Portions of the liver, the spleen, the kidneys, and the cerebral cortex and cerebellum were preserved for microscopical examination in England.

Nottingham-place, W.

[1] A paper read before the Royal Society on Nov. 3rd, 1910.

# REMARKS ON THE TREATMENT OF SYPHILIS WITH DIOXY-DIAMIDO-ARSENOBENZOL ("606").

BY C. F. MARSHALL, M.SC., M.D. VICT., F.R.C.S. ENG.

IT is much to be regretted that arsenobenzol has been introduced in a manner which is more in accordance with the methods of commercial enterprise than with the ethics of scientific medicine, for such methods are naturally calculated to create a strong prejudice against it. Nevertheless, as its inventor is one who holds a high position as a medical scientist, it is necessary to deal with this preparation on its merits and to judge, if possible, the position which it is likely to occupy in the therapeutics of syphilis.

The two main questions to be decided are: first, is arsenobenzol capable of replacing mercury and iodides in the treatment of syphilis? Secondly, if it is incapable of doing this, is it of value as a third weapon against syphilis? Before any drug can replace mercury and iodides it must be proved capable of producing one or more of the following effects: (1) the realisation of an abortive cure of syphilis; (2) the prevention of tertiary or parasyphilitic manifestations; and (3) the healing of syphilitic lesions with greater rapidity, greater constancy, and at the same time with less liability to relapse and recurrence than is the case with mercury and iodides. It must also compare favourably with the latter as regards dangerous toxic effects. Let us see whether arsenobenzol has been proved to fulfil any of these conditions.

1. On the strength of its remarkable effect on relapsing fever in rats it was at first hoped that arsenobenzol might effect an abortive cure of syphilis, or *therapia sterilisans magna*. However, this idea has, I believe, been abandoned by most of the recent investigators. In any case, an abortive cure of syphilis is impossible to prove, at any rate in the human subject, owing to the long latent periods that may elapse between the early and late manifestations. Those who pin their faith on the Wassermann reaction claim that a persistently negative reaction signifies a cure; but, considering our ignorance of the real nature of this reaction, and the knowledge that it is not specific for syphilis, it is doubtful if this evidence can be accepted as absolutely conclusive. Moreover, as Flashman and Butler[1] have pointed out, in a case of syphilis which is apparently cured an encapsuled focus of disease may remain in some part of the body, incapable of producing the bodies which cause the complement deviation of the Wassermann reaction, unless roused to activity by some extraneous cause. Obviously, such a case might continue to give a negative reaction, which would be misleading.

Another fact often brought forward as evidence of the cure of syphilis is the occurrence of reinfection; but in the light of recent observations it appears that reinoculation with syphilis may be successful before the original infection is extinct. A few years ago Finger and Landsteiner[2] suggested that as a syphilitic subject might have recurrent lesions for years due to his own endogenous spirochætæ, so might he have lesions during the same time due to exogenous spirochætæ. More recently Pinard[3] has shown that reinfection, or rather superinfection, can take place during the primary period up to 31 days after the appearance of the first chancre, and also during the tertiary period. He concludes that immunity is complete only during the secondary period, that it is incomplete during the primary period, and gradually weakens during the tertiary period.

It appears, therefore, that it is impossible to prove that an abortive cure of syphilis can be realised by arsenobenzol or any other drug.

2. The second question—whether arsenobenzol prevents tertiary and parasyphilitic lesions—need not detain us, for it would take many years to prove. It may be mentioned, however, that this point has been proved for mercury by Fournier's statistics,[4] so far as statistics can prove anything.

3. The third question is whether syphilitic lesions heal under arsenobenzol more rapidly, more constantly, and with less liability to relapse and recurrence than under mercury and iodides. Taking this question as a whole, the answer appears to be a negative one, although on certain points there are differences in the results of different observers.

As regards the rapidity and constancy of action, the earlier investigators described this as "marvellous," "miraculous," and even "dumbfounding." Obsessed by their enthusiasm for the new drug, they seemed to have forgotten that it is quite a common thing for syphilitic lesions to disappear with "marvellous" rapidity under mercury and iodides; indeed, before the discovery of the spirochæta pallida this rapidity of disappearance was often a source of embarrassment by obscuring the diagnosis, in cases of doubtful chancre, for instance.

I have before me photographs of two typical cases treated by arsenobenzol; one, a primary chancre which healed in eight days, the other an early secondary syphilide which mostly disappeared in two weeks. It is quite common for such lesions to heal in the same time under mercurial treatment, especially by inunction. Gottheil,[5] one of the most recent and more impartial observers, says: "Its immediate effect may be better, in some cases, than that of mercury; in others it is slower and less certain; in some cases it fails." Professor Gaucher,[6] who has recently published the results of his experience at the St. Louis Hospital, finds that there are some cases which resist the action of arsenobenzol; others which heal with the same rapidity as under mercury; others, again, which heal more rapidly, but the latter are superficial ulcers and mucous patches which are easily healed by mercury. Further, he finds that arsenobenzol has no effect on visceral syphilis, nor on parasyphilitic affections such as tabes, general paralysis, and lingual leucoplakia.

As regards liability to relapse and recurrence, the earliest reports did not mention these because they were published before relapses had time to occur. Very soon, however, relapses were noted, but were attributed to too small a dose. More recently relapses have been shown to be common after the average dose of 0·6 gramme.

I think it will appear obvious from the foregoing considerations that mercury cannot be replaced by arsenobenzol in the treatment of syphilis, at any rate in the present state of our knowledge. In fact, the so-called "treatment of syphilis by '606'" is a misnomer, it is really the treatment of certain symptoms of syphilis, not treatment of the disease itself.

The next point to consider is whether arsenobenzol is of use as an alternative drug, more especially in cases where mercury fails. It is in the latter class of case that Gaucher[7] thinks it chiefly useful, but not always, for he has seen lesions which resisted the action of both mercury and arsenobenzol. As regards these cases which are said to be resistant to the action of mercury, as Gaucher remarks, they are very rare. In my experience there are few lesions of primary, secondary, or tertiary syphilis which cannot be healed by judicious combinations and variations of mercurial and iodide treatment. I think the failure is more often due to the method of administration than to the drug itself or to any idiosyncrasy in the patient. Failure is often due to the adoption of routine methods. One of the most intractable cases of tertiary syphilis I ever saw was healed by small doses of potassium iodide (5 grains) given in large quantities of hot water. This case, which had resisted all the usual methods of mercurial and iodide medication, is mentioned by Mr. A. H. Ward.[8] It shows what can be done by varying the doses and methods of administration of the time-honoured drugs. It appears, therefore, that if arsenobenzol has certain indications as an alternative form of treatment, these indications are extremely limited.

Lastly, we have to consider the toxic effects and possible dangers of this drug. In the first place, several deaths have occurred after its injection; some of these appear to have been directly due to the drug; while others, if not entirely attributable to it, were probably accelerated thereby. The method of intravenous injection seems to be specially dangerous, and requires considerable dilution of the preparation. Hutchinson[9] mentions a case of primary chancre in a healthy woman which almost terminated fatally after an

[1] Brit. Med. Jour., Oct. 9th, 1909.
[2] Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften in Wien, 1905.
[3] Thèse de Paris, 1910.
[4] Traité de la Syphilis, vol. ii., part 1, 1901.
[5] Medical Record, Dec. 31st, 1910.
[6] Gazette des Hôpitaux, Nov. 15th, 1910.
[7] Bulletin de l'Académie de Médecine, Nov. 15th, 1910.
[8] Clinical Studies in Syphilis, 1904, p. 149.
[9] In Martindale and Westcott's "Salvarsan," p. 56.

intravenous injection, and he remarks that "the intravenous injection of '606,' if adopted to any considerable extent, will certainly be followed by a number of deaths directly the result of such injections."

It may be remarked that fatal results have also occurred in connexion with mercurial treatment, but these have mostly followed the injection of insoluble preparations, especially grey oil. The danger of insoluble preparations applies equally to mercury and arsenic; a deposit of the drug in the tissues may suddenly give rise to intense and uncontrollable intoxication. Here it is the method which is at fault, not the drug. There are other ways of giving mercury which are free from such dangers.

Among other untoward effects of arsenobenzol may be mentioned necrosis of the tissues after intramuscular injections, and irritation of the kidneys (Gottheil). It is said that arsenobenzol is free from the danger of causing optic atrophy, a disaster which led to the abandonment of atoxyl and arsacetin; but it is difficult to be satisfied that no such danger exists, especially in subjects who are susceptible to arsenic. In fact, according to Isaac,[10] two cases of blindness have been reported.

To sum up, when we take into consideration the failures and limitations of arsenobenzol, the possible dangers and disasters which may follow its use, and the elaborate precautions necessary for its preparation and administration, it appears evident that if mercury is ever to be supplanted by another drug, arsenical or other, it is not by arsenobenzol, at any rate in its present form. It would have been better both for the profession and the public if some of the workers in this field had been a little more level-headed and a little less precipitate. Hata himself is more reserved and limits himself to the statement that, if not capable of effecting a clinical cure, "606" may ultimately lead to the discovery of a specific treatment for spirochætal diseases.[11]

*Conclusions.*

1. In the present state of our knowledge there is no drug which can replace mercury in the treatment of syphilis.
2. Although arsenobenzol causes rapid healing of certain syphilitic lesions, this effect is not constant and is often only temporary.
3. There is no proof that an abortive cure of syphilis can be realised by this drug.
4. If arsenobenzol is indicated at all in the treatment of syphilis, it is chiefly in those cases which are not influenced by mercury, but such cases are rare. Moreover, some cases resist the action of both drugs.
5. The administration of arsenobenzol is attended with many risks and dangers.

St. John's Wood Park, N.W.

[10] Berliner Klinische Wochenschrift, August 15th, 1910.
[11] Ehrlich und Hata: Die Experimentelle Chemotherapie der Spirillosen, 1910.

# CONTRIBUTIONS TO THE PHYSIOLOGY AND PATHOLOGY OF THE ASSIMILATION OF ALBUMIN.

BY S. A. ARANY, M.D.

*The Physiology of the Assimilation of Albumin.*

IN spite of various experiments on animals and *in vitro* the physiology of the assimilation of albumin is far from established, and our knowledge of the same only consists of theories founded upon these experiments. The majority of the authors suppose that the albumin of the ingested food, after having been rendered more accessible to the action of the ferments—i.e., the pepsin and trypsin—by the disintegrating action of the hydrochloric acid of the gastric juice, is decomposed into peptones, and the latter, through the united action of the trypsin and the enterokinase, into amino-acids. Although the components of the albumin just mentioned have been traced in the organs and the urine, several authors do not admit that the albumin is decomposed as far as into amino-acids, and claim that also larger (coarser) components may be assimilated by the system. Whatever the steps of decomposition may be, it is generally believed that the components of the albumin are united into so-called neutral albumin in the intestinal wall, and the former is conveyed by the blood to the various organs which transform it into tissue albumin. It is also supposed that the cells only avail themselves of such components of the neutral albumin as they need for their building up, the remaining components being excreted as urea, uric acid, &c., with the urine.

If, however, we compare the nitrogen of the albumin ingested with that which is excreted we find that both amounts are equal, from which fact it might be concluded that the albumin ingested only serves the purpose of replacing the tissue albumin decomposed by the system—viz., the cells can only assimilate such amount of albumin as corresponds to the amount of bodily albumin disintegrated by the cells. According to this view, the system is not able to assimilate albumin ingested in excess, and the excess ingested is only decomposed and excreted by the system. This is, however, as Abderhalden[1] rightly remarks, a gratuitous assertion, as we have no right to consider the nitrogenous substances only in estimating the amount of albumin assimilated by the system, but we are compelled to take also the other constituents of the albumin into consideration.

That the amount of eliminated nitrogen cannot be taken as a criterion in judging the amount of albumin assimilated by the system, I think is proved by the fact that in cases of grave diabetes the amount of the eliminated nitrogen is fairly normal, and still we find that the assimilation of albumin is greatly impaired. We find, namely, that in spite of the total restriction of carbohydrates and fat the urine contains, besides a normal or almost normal amount of nitrogenous substances, a large amount of glucose, which latter undoubtedly originates from the albumin ingested. It is not doubted by any physiologist that glucose is derivable from albumin, but how this process is performed is not established as yet.

However, even if we do admit that the elimination of glucose with the urine on a purely albuminous diet is a pathological symptom, we need not run away with the idea that the formation of sugar from albuminous matter is a pathological process. On the contrary, we are entitled to conclude that a certain part of the ingested albumin is, or rather that certain constituents of it are, also under normal conditions turned into glucose which the system either uses as energy or stores up as glycogen. There is nothing to prevent us from supposing that certain constituents of the albumin are converted into glucose which becomes united with the nitrogenous constituents of the albumin into neutral albumin; there is also no doubt that albumin if ingested in excess is not entirely eliminated from the system, as under normal conditions only the nitrogenous constituents are traceable in the urine, in the latter being no trace of sugar, which makes it evident that the carbohydrate constituent of the excess has been retained—i.e., either utilised or stored up by the system. The normal process of the assimilation of albumin is, therefore, likely to occur in the following way.

After the hydrochloric acid has loosened the structure of the albumin it is converted by the pepsin into its derivatives, the peptones, which latter are decomposed into their smaller constituents by the ferments of the pancreas and intestinal juice. The majority of authors presume that in this latter process only the trypsin of the pancreas and the erepsin of the intestinal juice take part, by the action of which the peptones are decomposed into amino-acids. In favour of this supposition there are only the experiments performed *in vitro* with albumin and above-mentioned ferments, resulting in amino-acids having been found as final products. This, however, cannot be looked upon as an unmistakable proof that the assimilation of albumin in the system takes the same course, and does not exclude the possibility that besides the fermentative processes mentioned some other processes may take place as well, by which some constituents of the albumin are converted into glucose. The ferment necessary for this process may be provided by the pancreas, and intermediary products of albumin into carbohydrates are also to be found in the system, as it cannot be denied that glucosamine is a representative of such intermediary products. Thus, aminohexose, the chemical composition of which differs very little from that of glucose, as only one molecule of OH is replaced in it by a molecule of $NH_2$, is to be considered as an amino-sugar, and is very likely only a representative of a great class of

[1] E. Abderhalden: Lehrbuch der Physiologischen Chemie.

nitrogenous carbohydrates, which, so far, have not been isolated. That nitrogenous carbohydrates can be converted into non-nitrogenous ones is evidenced by Langstein's[2] experiments, that author having succeeded in obtaining from serum-globulin, glucosamine as well as glucose.

It is perhaps Pavy's[3] greatest achievement that he first called attention to the fact that almost every kind of albumin contains a carbohydrate constituent, and he succeeded in obtaining carbohydrate from protein by the breaking-down action of both potash and sulphuric acid, the product in the former case presenting itself in the amylose form and in the latter as sugar. Pavy also investigated the various kinds of albumin, and found that the albumin and vitellin of the egg, the proteins of the blood serum and the fibrin, as well as the gluten of wheat and the protein of the haricot bean, contain a considerable amount, whereas casein contains an insignificant amount of carbohydrates. Pavy concludes from his investigations that the presence of carbohydrates in the albumin is due to the circumstance that sugar as such cannot reach the circulation, but it has to undergo some changes previously to its entering the blood. This change takes place, according to Pavy, at the seat of absorption—i.e., in the mucous membrane of the intestine, where there is an active growth of lymphocytes carried on in concurrence with the absorption of the products of digestion. The lymphocytes take to themselves molecules of suitable configuration for being linked on to them, and thus also the sugar molecules become built into a newly formed chemical complex, which is then carried into the circulatory system.

As I have already pointed out in my article on the Assimilation of Carbohydrates in Health and Disease,[4] Pavy's theory does not suffice to account for the assimilation of all the carbohydrates ingested, because we know on the one hand, that the amount of glycogen contained by the system is about 300 grammes, which would only account for a very small part of the carbohydrates ingested; on the other hand, albumins contain, even in the case of all of their constituents not being known, much too little carbohydrate to account for the large amount of carbohydrate assimilated by the system; and it seems more likely, as I pointed out in my above-mentioned article, that that part of the carbohydrate which is not turned into glycogen is converted into fat. Although we cannot accept Pavy's theory in the sense suggested by him, it will give us some useful information regarding the assimilation of albumin. As mentioned before, the ingested albumin is decomposed into its constituents by means of ferments, and it is very likely that this process is performed by the pepsin, trypsin, and erepsin, as well as by means of some diastatic ferment, most likely supplied by the pancreas, which diastatic ferment converts the nitrogenous carbohydrates into glucose. The constituents of the albumin are united into neutral albumin in the intestinal wall, wherefrom this latter product is conveyed by the blood to the various organs in order to be transformed into tissue albumin. It is obvious that this latter process cannot be uniform, as the tissues of the various organs are different, and therefore the cells only avail themselves of such constituents of the neutral albumin as they may be in need of; and thus those cells the albumin of which contains a larger amount of carbohydrates will most certainly avail themselves of the whole amount of carbohydrates contained by the neutral albumin, whereas the cells containing a smaller amount of carbohydrates will utilise only a part of this substance, the remainder being stored up as glycogen.

Besides the glucosamine there are the carbohydrates contained by the nucleo-proteins at the disposition of the system, as it is a well-known fact that these compound albumins contain, besides albumin and nucleinic acid, some carbohydrates belonging to the pentose group. These carbohydrates were first isolated from the nucleo-proteins of the pancreas and were described by Neuberg[5] as xylose. It is obvious that the nucleo-proteins are decomposed into their constituents in the same way as the other albumins, after which process the constituents are united into neutral albumin and conveyed to the organs in order to be assimilated into bodily nucleo-proteins.

Should the albumin ingested contain an insufficient amount of carbohydrates the constituents of the decomposed albumin will have to be supplemented by the carbohydrates ingested, in which case the synthesis described by Pavy may take place, but as long as the ingested albumin contains all the constituents of which the neutral albumin is to be formed the system will not be required to draw from the carbohydrates ingested. It follows, therefore, that the ingested albumin is decomposed into its nitrogenous constituents—i.e., the amino-acids—as well as into its carbohydrate components, and both kinds of constituents are united into neutral albumin by the action of the intestinal wall. The neutral albumin, which is to be considered the parent substance of the tissue albumin, is conveyed by the blood to the cells of the various organs, which transform it into their respective tissues. The circumstance that the amount of nitrogen ingested corresponds to the amount of nitrogen eliminated led to the belief that the system can only utilise such amount of the albumin ingested as corresponds to the amount of tissue albumin disintegrated. This may be correct as far as the nitrogenous substances of the albumin are concerned, but does not apply to the carbohydrate component of the albumin, as this latter is utilised in the same way as the carbohydrates ingested—i.e., as energy and reserve material. It is also likely that the reserve material thus formed is utilised in case the albumin ingested contains too little carbohydrate components. The formation of glucose from albuminous matter is, therefore, to be looked upon as a physiological process, but it must be borne in mind that the sugar thus formed is only a transitory product which *in statu nascendi* becomes combined with the nitrogenous constituents of the albumin into neutral albumin.

*Pathological Conditions.*

Under pathological conditions—i.e., in the grave and very grave forms of diabetes—we find that even on a purely albuminous diet glucose appears in the urine, from which we may conclude that the assimilation of albuminous matter is impaired. If we consider in such cases the nitrogenous final products of the albumin in the urine, we find them to be either normal or very little different from normal, from which we may conclude that the assimilation of the nitrogenous portion of the albumin is not interfered with, whereas the utilisation of the carbohydrate portion of the albumin is not effected in the usual way. The deviation from the normal process taking place in diabetes could be ascribed to the circumstance that the glucose formed from the albumin is not being combined with the nitrogenous constituents into neutral albumin. This process is under normal conditions very probably effected by means of some ferment, which is either insufficiently or not at all present in diabetes, owing to which glucose is liberated and eliminated by the urine.

It may also be supposed, however, that the formation of neutral albumin takes its normal course in diabetes, and that the former, after having been conveyed to the cells and decomposed by them, cannot be converted into tissue albumin, owing to the lack of a ferment, which under normal conditions unites the glucose and the amino-acids into tissue albumin. In this case we have to deal with an impaired activity of the cells, preventing the amino-acids from being combined with the glucose, which latter thus liberated makes its appearance in the urine. The diabetic system can either partly or totally lose its ability to combine the constituents of the decomposed albumin into neutral and tissue albumin respectively. The former—i.e., the partial loss of this ability—is observed in cases of medium gravity, which very often are only due to an excessive ingestion of albumin, and easily improve by the reduction of the latter. In these cases the cells of the intestinal wall or other bodily cells have very likely too little ferment at their disposal, and therefore cannot combine all the glucose and amino-acids into neutral and tissue albumin respectively, which circumstance gives rise to glycosuria. However, if we reduce the amount of albumin ingested the constituents will have plenty of ferment at their disposal to perform the physiological process and the glycosuria will disappear. In very grave cases of diabetes there is either very little or no ferment present, as the reduction of the albumin ingested has no appreciable effect upon the glycosuria, and it is very likely

[2] Langstein: Die Kohlenhydrate des Serumglobulins, Sitzungsber. der Wiener Akademie.

[3] Pavy: The Physiology of the Carbohydrates.

[4] S. A. Arany: The Medical Press, March, 1910; Zeitschrift für Physikalische und Diätetische Therapie, 1910.

[5] Carl Neuberg: Die Konstitution des Pankreas-proteïd, Berichte der Deutschen Chemischen Gesellschaft, 1902.

that at this stage of the disease all the sugar derived from the albumin ingested escapes assimilation and appears in the urine. The nitrogenous constituents of the albumin endeavour, however, to find some compensation for the loss thus sustained, and have recourse to the tissue albumin in order to extract the glucose of the latter. This endeavour, which may be looked upon as "tissue hunger," entails a considerable breaking down of body tissues and involves the patient in the greatest danger.

*Acidosis.*

The breaking down of body tissues does not only bring about impoverishment of tissues, but also acidosis, which is caused by the abnormal or rather perverse decomposition of body tissues, which process gives rise to the formation of acetone bodies.

Some authors claim that the acetone bodies do not originate from albumin. Magnus-Levy [6] found in a case of diabetic coma 342 grammes of acetone bodies in the urine in the course of three days, although only 311 grammes could have been formed of the albumin decomposed in that space of time, and therefore he thinks that the source of acetone bodies is fat. This, however, cannot be accepted as proof that the acetone bodies do not originate from albumin, as first of all it must be remembered that the acetone bodies are formed by the breaking down of body tissues and not by the decomposition of the albumin ingested; and, on the other hand, it has not been proved that the albumin must be decomposed into its usual final products for the purpose of yielding acetone bodies.

It cannot be denied, however, that fat may be the source of acetone bodies, as many experiments have shown that the administration of fat, and especially of butter, increases the acidosis in grave cases of diabetes; and it is very likely that the breaking down of body tissues involves, besides the albumin, the fat as well. It is also likely that by the breaking down of fat not only acetone bodies but also glucose is formed, for the reverse process occurs under normal conditions, and the diabetic system, as I pointed out elsewhere,[7] destroys where the normal system builds up.

Although it may also be concluded from various processes of assimilation that all the energy liberated in the animal system is due to the carbohydrates, and only these can be looked upon as the source of energy, it is the grave form of diabetes which best proves the correctness of this supposition. We know that in the mild or alimentary form of diabetes a certain part of the carbohydrates ingested is utilised by the system, but with the increasing intensity of the disease the system loses even this reduced tolerance of carbohydrates, and tries to make good the deficiency by using some of the carbohydrates of the albumin as energy, in which it succeeds only for a certain length of time, as the system sooner or later gets deprived of the ability of combining the constituents of the decomposed albumin, which gives rise to the escaping of glucose. Thus the system is deprived, not only of energy, but also of a very important constituent needed for its building-up process, and, therefore, in order to satisfy its want, disintegrates its own tissues.

The majority of authors suppose that the formation of sugar from albumin is effected by a very complicated synthesis, as the amount of carbohydrates contained by the albumin is, according to these authors, too small to account for the large quantities of glucose eliminated in the grave form of diabetes. But the amount of the carbohydrates in albumin is usually judged by the amount of glucosamine contained in it—a judgment to which we are not entitled, for the circumstance that so far only this aminohexose has been isolated from albumin does not necessarily prove that there are no other carbohydrates present in it. Besides, it must be borne in mind that the nucleo-proteins also contain a carbohydrate constituent, and even if this latter belongs to the pentose group, it is very likely that it is converted by the system into glucose, as Lindemann and May [8] produced glycosuria of several days' duration in a diabetic patient who had been free from sugar for a certain length of time by the administration of pentose. It is therefore unnecessary to presume a complicated synthesis of sugar from albumin in diabetes, as we have seen that almost every kind of albuminous matter contains a carbohydrate constituent, and therefore it is far more reasonable to suppose that the formation of glucose from albumin is effected by decomposition and not by synthesis.

The large amount of glucose eliminated in the grave form of diabetes is, however, not only derived from the albumin ingested, as mentioned above, but fat must also be considered a possible source of glucose, and there is no doubt that the breaking down of body tissues also contributes towards the increase of the amount of glucose eliminated by the diabetic.

Diabetes has, therefore, to be considered as a progressive malady of assimilation in general, conditioned by the loss of assimilation of the carbohydrates. The latter ensures with the increasing intensity of the disease the degeneration of all the processes of assimilation, as the system endeavours to convert all the foodstuffs ingested into glucose, which latter it can neither use as energy nor lock up as body tissues, whereby both loss of energy and impoverishment of body tissues take place. The impoverishment of body tissues becomes increased by the circumstance that the system finally avails itself of its own tissues in order to accomplish its perverse processes of assimilation, thus further disturbing the balance of assimilation.

The assimilation of carbohydrates must, therefore, be considered the nucleus of all assimilative processes, for the latter, as we have seen, entirely depend on the former. If there is nothing to interfere with the assimilation of carbohydrates, the system will not only be the recipient of all the energy necessary for its vital functions, but will also be in a position to store up a part of the assimilated carbohydrates as glycogen and fat. The normal assimilation of carbohydrates, however, also affects the assimilation of albumin, the former being looked upon as albumin sparing, owing to which quality a smaller amount of bodily albumin gets decomposed, and therefore, also, a smaller amount of the albumin ingested will have to be used for the building-up process, and the excess of the ingested albumin may become transformed into reserve material.

On the other hand, if there is something wrong in the assimilation of carbohydrates, the albumin ingested will have to replace the vital functions of the carbohydrates, in which case the system will be deprived of the albumin-sparing quality of the carbohydrates, but it will not be entirely deprived of energy, as the albumin ingested replaces the carbohydrates to a certain extent. With the increasing intensity of the disease the system loses the ability to use the glucose derived from albumin as energy or to lock it up as body tissues, and in the end has recourse to its own tissues. Although diabetes shows us what an important part the carbohydrates take in the processes of assimilation, it does not give us any evidence of the normal process of assimilation of the carbohydrates, and all we know of the latter is only based upon more or less likely theories. I described my own views of the assimilation of the carbohydrates in my work, which I have already mentioned, and since that also on other occasions,[9] and shall only allude to the matter as far as the explanation of the present subject may require it.

We know that the system contains about 300 grammes of glycogen, which accounts only for a very small part of the carbohydrates ingested, and therefore the question arises, What becomes of the greater part of the carbohydrates not converted into glycogen? The experiment with Eck's fistula has shown us that the ingestion of sugar as such causes glycosuria, whereas the ingestion of amylaceous food does not give rise to glycosuria in animals whose liver is cut out of the circuit, which fact leads me to the conclusion that the sugar ingested as such is differently utilised from the sugar derived from starchy food, the former being conveyed to the liver in order to be converted into glycogen, whereas the latter must be converted into some other material, as we have seen in the above experiment that only the assimilation of sugar ingested was interfered with.

If we take into consideration that animals whose food principally consists of carbohydrates have got the largest panniculus, it appears to be obvious that the part of the carbohydrates which is not converted into glycogen is

[6] Magnus-Levy in von Noorden's Handbuch der Stoffwechselkrankheiten.
[7] S. A Arany: Loc. cit.
[8] Lindemann and May: Verwertung von Ramnose, Deutsches Archiv für Medizin, 1896.
[9] S. A. Arany: Beiträge zur Physiologie und Pathologie des Stoffwechs. der Kohlenhydr.; Zeitschrift für Physikalische und Diätetische Therapie, 1910; and La Doctrine de la Physiologie et Pathologie des Carbohydrates, Progrès Medical.

converted into fat. That carbohydrates can be converted into fat is evidenced by the fact that unripe linseed[10] contains a great deal of carbohydrate and no oil, whereas after coming to maturity the seed shows just the reverse proportions—viz., it contains no carbohydrate and a great deal of oil. It is therefore more than likely that an analogous process occurs in the case of the assimilation of starchy food, and this process must evidently occur in the intestine, as is evidenced by the experiment with Eck's fistula, in which the ingestion of amylaceous food was not followed by glycosuria, which admits the conclusion that the sugar must have been transformed somewhere before it entered the blood—viz., in the intestine.

It is impossible to state how the conversion of starch into fat is effected and what chemical changes the starch undergoes until its conversion into fat, as we do not yet know the intermediary products of the latter. However, it seems to me very likely that this process is being performed by the coöperation of the pancreas and the intestine, a similar coöperation being claimed for the assimilation of albumin, in which process the trypsin is supplemented in its action by the intestinal juice—viz., by one of its ingredients named enterokinase. We also know that the intestinal juice obtains some substances from the bacteria of the intestines, which substances may activate certain enzymes or may independently perform some assimilative functions. Such coöperation of the intestinal flora may take place in the conversion of the components of starch into fat, which process may be looked upon as a symbiosis—i.e., a joint action of the intestinal flora and the intestinal cells.

It is a well-known fact that under favourable circumstances certain bacteria produce some substances which are useful to the system; should, however, the circumstances change and become unfavourable to the bacteria the latter will not only not produce the useful substance, but will attain the ability to produce substances detrimental to the system—i.e., toxins. It is also known that in the grave form of diabetes even the total restriction of carbohydrates and the administration of a diet consisting of albumin and fat do not prevent the glycosuria, and it is, therefore, very likely that the vital conditions of the bacteria supplying the substance necessary for the conversion of sugar into fat have become unfavourable, and therefore the bacteria, instead of producing the substance necessary for the physiological process, produce a toxin possessing the ability to convert the fat ingested into sugar. Should this toxin attain a greater virulence it will very likely possess the ability to interfere with the activity of ferments, and thus it may also interfere with the ferment combining the decomposed albumin into neutral and tissue albumin respectively, by which interference the carbohydrate component of the albumin gets liberated and escapes with the urine. At the height of its virulence the toxin gives rise to breaking down of body tissues, which not only causes glycosuria but also the appearance of organic acids in the blood, which latter are due to the abnormal—i.e., perverse—decomposition of body tissues. In the formation of these acids also the fat participates, but I should leave it undecided whether the toxic symptoms in diabetic coma are only due to the presence of the acetone bodies, or are caused by the toxin itself.

Having now arrived at the end of our reflections with regard to the physiological and pathological processes of assimilation of albumin, I think that the only fault to be found with them is their hypothetical basis, as in the chain of deduction of the various assimilative processes depending one on another there is no link missing, which circumstance in itself speaks also for the correctness of the hypothesis.

In conclusion, it may be added that since certain ferments, or at least their actions, are known, some assimilative processes are performable also outside of the system, and there can be no doubt that other processes of assimilation are dependent upon the presence, or rather upon the activity of bacteria, as is proved by Schottelius's experience, who found that chickens put upon sterilised food did not develop and soon succumbed, whereas if bacteria were added to their food they soon recovered and prospered. Another striking proof of the action of bacteria upon the assimilation is afforded by the researches of Ellenberger, who discovered that boiled or filtered intestinal juice of the horse lost its ability of dissolving cellulose.

The physiologist as well as the pathologist has therefore, in order to establish the normal and pathological processes of assimilation, to work in the same direction, this being the careful study of the bacteria living in the system, by the knowledge of which not only physiology and pathology but also therapy will be put on the right track.

Carlsbad.

[10] Abderhalden Physiologische Chemie.

## A CASE OF SO-CALLED "INSUSCEPTIBILITY TO VACCINATION."

BY J. D. STAPLE, M.R.C.S. ENG.,
PUBLIC VACCINATOR FOR THE ASHLEY DISTRICT, BRISTOL UNION.

I WAS recently asked to vaccinate a boy aged 4½ years. The father informed me that when an infant the child had been vaccinated three times unsuccessfully, the operation being performed on each occasion in one mark. He added that a certificate of insusceptibility to vaccination had been sent to the vaccination officer. The man further said that he had recently "been studying vaccination," and having his doubts as to the efficacy of "one-mark vaccination," was anxious to have the child vaccinated again. I vaccinated the child, and on inspection the result was satisfactory. The vaccination officer corroborated the statement as to having received the certificate of insusceptibility to vaccination.

In Bristol during 1909 and 1910 the successful number of primary vaccinations was about 9000; of this number more than half were performed by the public vaccinators. Twenty-six cases of insusceptibility to vaccination were notified during the two years, but none of these were reported by public vaccinators.

It is perfectly obvious that if a child is vaccinated in only one mark there is less likelihood of the operation being successful than if it were performed in the orthodox number of places. It is to be regretted that when a certificate of insusceptibility is filled up the practitioner is not required to certify that the child has been unsuccessfully vaccinated in three or four marks on three separate occasions; we should then have a perceptible decrease in the number of insusceptible cases.

It is a very unsatisfactory state of things that a one-mark vaccination can be called a successful vaccination. All the authorities on vaccination strongly condemn such a practice, and yet there are a few practitioners in large cities who vaccinate a very large number of infants in one mark, parents even bringing their children from outlying country districts to them for the purpose. It is perhaps too optimistic to hope that for the present, at any rate, there will be the slightest improvement in the vaccination laws. Vaccination is rapidly diminishing, conscientious objection certificates are most readily obtained (in Gloucester they nearly double the number of vaccinations), and if the parents should be summoned the magistrates generally inflict a fine of 1*s.*, and parents who prefer a modified form of vaccination can generally find a practitioner who, for "a minimum fee," will perform a small "one-mark vaccination."

Bristol.

THE FINANCIAL POSITION OF THE TIVERTON INFIRMARY AND DISPENSARY. — The committee of the Tiverton (Devon) Infirmary and Dispensary in its annual report for 1910 states that an adverse balance of £252 exists against the institution. The committee adds that unless the income is increased the infirmary must be used for accidents only. The existing dispensary would still be continued. A commissioner recently inquired into the endowed charities of Tiverton, and it was proposed that some of the funds derived from these sources might be given as annual donations to the infirmary. The Tiverton Infirmary was founded in 1868 and contains 23 beds. Subscriptions have been received in consequence of this appeal, and it is hoped that a sum of money will shortly be subscribed sufficient to place the charity in a sound financial position, so that the committee will have no necessity for curtailing the useful work of the institution.

# Medical Societies.

## MEDICAL SOCIETY OF LONDON.

*Malignant Stricture of the Œsophagus.*

A MEETING of this society was held on Feb. 13th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. G. WILLIAM HILL demonstrated on patients the treatment of Malignant Stricture of the Œsophagus, with special reference to the employment of intubation and of radium. He said that the treatment of primary gullet cancer was practically nearly always merely palliative for the relief of dysphagia and pain. The only cases in which operation had hitherto been successful were in all probability not instances of primary disease in the œsophagus, but of invasion, cancer from the pharynx, and in these instances Solis Cohen's and Gluck's types of operation—viz., total laryngectomy, together with partial excision of the deep pharynx and of a small segment of the adjacent cervical œsophagus—had often been successful. Œsophagectomy alone, whether of the cervical œsophagus as first practised by Czerny, or of the thoracic, or of the abdomino-thoracic œsophagus by thoracicotomy after the methods of Sauerbruch, von Hacker, W. Meyer, and others, had no permanent or even temporary cure to its credit. With early recognition by means of the more general adoption of exact endoscopic methods of diagnosis, together with improvements in operative technique, an occasional successful œsophagectomy might be regarded as a matter of time, but that time was not yet. Killian had claimed to have diagnosed and successfully removed a small sarcoma of the gullet by endo-œsophageal measures through the œsophagoscope, but it would probably be long before another such cure was recorded. The only external operative treatment which had been, and was still, extensively practised was the strictly palliative operation of gastrostomy, but Dr. Hill thought he would be able to show that the endo-œsophageal palliative measures mentioned in the title of his paper—viz., intubation and radium—would in the near future render the necessity of the resorting to gastrostomy a much more exceptional event than it was to-day. Before dealing in detail with these special procedures with radium and intubation he passed under rapid review such palliative measures as treatment by drugs—e.g., iodides, iodipin, fibrolysin, which, like serum therapy, were not often even of temporary value. Of drugs acting locally spirit of ether broke up frothy mucus in the gullet by reducing surface tension; astringents, like adrenalin, cocaine, and turpentine, were of little use; local anodynes, like morphia, chloretone, and orthoform, were sometimes useful for pain in cancer high up; they rarely, however, enabled one to dispense with hypodermic injections of morphia, atropine, &c., in very painful cases. Lavage of the gullet in cases of dilatation above a stricture was the best means of removing decomposing substances, but glycerine of boric acid and of carbolic acid, sanitas, and similar preparations were also useful as disinfectants and deodorants. Peroxide of hydrogen was contra-indicated. Caustics were generally inadvisable, even when applied endoscopically to tight strictures; and electrolysis, ionisation, and carbon-dioxide snow had not as yet had any extensive trial. Relief of dysphagia by the X rays had been claimed in a few instances where the disease was high up. The question of diet was of great importance, but time did not admit of its proper discussion on this occasion. Blind bougieing undoubtedly gave relief to dysphagia, but was not free from danger even in expert hands, and should be abandoned in favour of endoscopic bougieing which was a much safer and more efficient procedure in every way; but with intubation periodical bougieing was unnecessary. The permanent retention of a small gum elastic oro-œsophageal catheter or feeding tube had been advocated by Krishaber at the International Medical Congress in London in 1881. Mackenzie was the first to use an entirely intra-œsophageal permanent intubation-tube of gum elastic held in position by strings. This was later superseded by Symonds's gum elastic intra-œsophageal funnel, an appliance of great utility which could, by the aid of the œsophagoscope, be much more easily inserted than formerly. When the stricture could not be sufficiently dilated by endoscopic graduated bougies or when it was near either end of the gullet, Symonds's funnels were impracticable. James Berry was the first to employ permanent soft red rubber oro-œsophageal tubes of small calibre, which were, however, difficult of introduction. Symonds improved on Berry's method by introducing a red rubber oro-œsophageal catheter shaped like a Jacques urethral catheter, which was more easily introduced by a whalebone guide inserted into the eye near the distal extremity. This method had proved most useful in his (Dr. Hill's) hands, but the pliant tube was liable either to be vomited or coughed up, and could only be reintroduced by one skilled in its use without the aid of the œsophagoscope. Dr. Hill had therefore been led to devise a styletted red rubber oro-œsophageal catheter for either permanent or temporary retention, which by reason of its having a backbone of soft silver or of whalebone fastened to the teeth was not easily ejected by the severest coughing or vomiting. Patients could be fed with liquids through the tube, and after this intubation apparatus had been worn a week or two the dilating bougie effect often enabled the patient to swallow fluids, soft food, and often some solids by the side of the tube. Although in advanced cases the styletted tube had to be retained *in situ* permanently, in others it could be left in for a week or two until from the bougie effect the patient swallowed well by the side of the tube when it could be removed until the dysphagia again became troublesome. He had treated a large number of cases by either the permanent or the temporary wearing of this styletted oro-œsophageal intubation tube with the most gratifying results; the tube was well borne and Dr. Hill regarded gastrostomy as nearly a thing of the past in his practice. The styletted tube was not only more efficient than other intubation tubes, but it was more easily introduced than any other with or without endoscopic bougieing. Moreover, feeding entirely through an oro-œsophageal intubation tube was specially indicated for permanent use where there was a communication between the malignant gullet and the air passages, so that liquid nourishment could be poured directly into the stomach. Several *confrères* had adopted that method of treating dysphagia for stricture with complete satisfaction. It was indicated in cases which were unsuitable for the employment of Symonds's funnel. The life of the styletted tube was from five to ten weeks. Dr. Hill then spoke of the employment of radium. Impressed by the results claimed abroad by Exner, Einhorn, Goisey, and others in gullet cancer, he stated that he was the first to apply radium to the gullet in this country, and was probably the only one who had done much work on that viscus with large quantities of radium. He worked in coöperation with Dr. N. S. Finzi, who possessed 205 milligrammes of radium (costing £3300). They had treated 22 cases in all, using from 50 to 20 milligrammes on the gullet for periods varying from 12 to 28 hours on end, repeated in some instances as many as six times. They claimed four temporary cures; in six other cases there was quite remarkable improvement; in seven further cases there was substantial improvement; and in five cases only was there no improvement whatever, radium being only used once, and it was doubtful whether two of these cases (advanced ones) were not worse after the one application. The technique was explained and the subject generally was illustrated by a large number of X ray photographs and original drawings with the aid of the epidiascope; six patients were examined with the œsophagoscope, and the interior of the stomach in one instance was demonstrated by the new Hill-Herschell method of œsophago-gastroscopy, nearly everyone present being given an opportunity of seeing the region of the pylorus.

Dr. STCLAIR THOMSON gave details of the cases of two patients who had been much relieved by Dr. Hill's treatment.

Mr. L. B. RAWLING gave his reasons for preferring gastrostomy to other methods of treatment.

Mr. H. TILLEY said that when an anæsthetic was required for endoscopy of the œsophagus chloroform was better than ether.

Dr. FINZI said the dose of radium for healthy mucous membrane was 100 milligrammes for six or seven hours with a platinum shield 1½ millimetres thick, and for diseased membrane three or four times longer.

## MIDLAND MEDICAL SOCIETY.

*Exhibition of Cases and Specimens.*

A MEETING of this society was held on Feb. 1st at the Medical Institute, Birmingham, Mr. W. F. HASLAM, the President, being in the chair.

Mr. GEORGE HEATON showed a girl, aged 7 years, with severe Rickets, and also radiograms of her pelvis, spine, and other bones. The girl was only 34 inches high. She had extreme lordosis of her lumbar spine, and had the gait of a patient with congenital dislocation of the hips. There was marked double coxa vara, the great trochanters being on a higher level than the iliac spine, and movements of rotation inwards and abduction of the thighs were very limited. The radiograms showed that the neck of the femur on each side was horizontal and curved with a convexity forward. The pelvis, as shown in the radiogram, was extremely oblique and of the malacosteon or triradiate variety, both acetabula being driven inwards by the weight of the body acting on the heads of the femora. Two other children of the same family were the subjects of rickets.

Mr. C. A. LEEDHAM-GREEN showed three Papillomata of the Bladder which he had successfully removed. He also showed a young girl, aged 15 years, suffering from marked Acromegaly. The patient was first noticed to be growing abnormally fast in her ninth year, and is now, although with marked dorsal curvature, 6 feet 6¾ inches in height. Her face, hands, and feet showed the characteristic changes. A radiograph taken of the skull indicated an abnormally large sella turcica, but there were no ocular symptoms pointing to intracranial pressure. The question of operative interference by removal of the pituitary body was raised, but the patient's relatives decided against it.

Mr. BERNARD J. WARD showed two cases of Trigeminal Neuralgia cured by injections of alcohol. Both were men, one aged 34 and the other 67 years, and both were examples of epileptiform neuralgia in its worst form. In each case medical treatment of various kinds had been tried for over two years but without relief, even opium failing in the one case. The attacks of pain used to come on from 20 to 30 times a day, and were started by such a slight stimulus as a cold draught or eating, so that in one case liquids only could be taken. In both cases the second division of the fifth nerve was alone affected, and this was injected at the point at which it leaves the foramen rotundum with 2 c.c. of 80 per cent. alcohol containing some eucaine in solution. The first case had had no more pain since the fourth injection six weeks ago, and the second had been free from pain since the first injection, but it was thought better to give a second to guard against recurrence. He had been completely free from pain for two months.

Dr. C. E. PURSLOW showed: 1. Fibroids of the Uterus, with Bilateral Carcinoma of the Ovaries, removed by abdominal section. 2. A Fibroid of the Broad Ligament which was firmly impacted in the true pelvis. There had been incontinence of urine from overflow for several months, and the bladder at the time of operation reached to the umbilicus, though a catheter had been passed immediately before. The uterus bisected coronally was also shown, and a similar fibroid at an early stage of growth could be seen on the opposite side. 3. A Uterus with Large Submucous Fibroid removed by abdominal hysterectomy from a patient, aged 49 years, who had suffered from severe hæmorrhages for five years, and was very anæmic at the time of operation. One fibroid had undergone myxomatous degeneration. 4. A Uterus with Corporeal and Cervical Fibroids removed by abdominal pan-hysterectomy from a patient aged 46 years. Since her last confinement, five years previously, the patient had suffered from abdominal pain, menorrhagia, and frequent micturition.

Dr. WALTER R. JORDAN showed a girl, aged 2½ years, with an Abdominal Tumour, as a case for diagnosis. For some two months the mother had noticed enlargement of the abdomen, and declared that she could see an increase in the size each week. An apparently solid tumour occupied the entire left half of the abdomen and reached well over on to the right iliac region. The tumour had an irregular rounded edge anteriorly, and was lost posteriorly under the spinal muscles. The colon could be made out crossing it. Dr. Jordan regarded the case as one of renal sarcoma. No other opinion was expressed.

Mr. W. ARTHUR LOXTON showed two cases of Tertiary Syphilis which had been treated by subcutaneous injection of salvarsan. The emulsion for one case had been prepared thus: salvarsan, 0·6 gramme; absolute alcohol, 6 c.c.; hot water, 10 c.c.; normal sodium hydrate phenol-phthalein sol. 3 c.c.; and 3 drops of acetic acid to neutralise. Pain was so severe and so prolonged in all the cases in which this formula was adopted that its employment had been abandoned. In the second case the method of preparation adopted was that described by McDonagh. The bulk of injection was small, and if the procedure was properly carried out no pain was induced.

Mr. A. W. NUTHALL showed a specimen of Sarcoma of the Left Kidney taken from a female child aged 2 years. A tumour had been noticed for five months before death, which followed on progressive emaciation and weakness. The growth appeared to take origin at the upper pole of the left kidney and to be distinct from the renal tissue, a capsule intervening, but the upper portion of the kidney was distorted and replaced by the main mass of the tumour. Extending from the hilum of the left kidney were numbers of greatly enlarged retro-peritoneal glands, overlying the spine and reaching across to the right kidney and down into the hollow of the sacrum. A peculiar and unusual condition of the mesentery was present: it was solidly enlarged by masses of glands contiguous with and inseparable from the adjacent growth in the kidney; in this way the small intestine largely, and the descending colon altogether, were in front of the tumour. The right kidney was enlarged and hydronephrotic but not involved by the new growth. The left suprarenal capsule could not be found. The right suprarenal capsule was of normal size and shape.

## MEDICAL SOCIETY OF LIVERPOOL.

*The Use of Tuberculin in the Treatment of Phthisis.—Local Administrative Control of Tuberculosis.*

A MEETING of this society was held at the Medical Institution, Liverpool, on Feb. 9th, Dr. T. R. BRADSHAW, the President, being in the chair.

Dr. H. H. CLARKE read a paper on the Use of Tuberculin in the Treatment of Phthisis. He stated that at the Hospital for Consumption he and his colleagues had given a great deal of attention to this method of treatment and had published their results in various journals. He gave a short account of the plan of treatment he adopted; when dealing with patients who were inside the hospital he gave a course for 42 days, starting with 1-5000th c.c. of the original solution of the bacillary emulsion as prepared by Meister Lucius and Brüning. For the first ten days the dose was doubled each day, thus 4-50th c.c. was soon reached; this was again doubled on the twelfth, twentieth, thirtieth, and forty-second days. If the patient had to be treated in the out-patient department he gave a weekly dose of 1-500th c.c. He considered that the oral method was as useful as the hypodermic method of administration. He concluded that tuberculin was of use in the treatment of phthisis.

Dr. E. W. HOPE then read a paper on the Local Administrative Control of Tuberculosis. He pointed out the great difficulties which had in the past confronted the early attempts to deal with the prevention of tuberculosis due to the neglect in by-gone years of sanitary principles and to the large amount of unskilled and casual labour which had existed in Liverpool. He emphasised the view that efficient methods must begin at the control of the recognised disposing causes of tuberculosis, and showed by charts how the adoption of these methods had in Liverpool been crowned with success. When insanitary areas were first condemned the mortality from phthisis was 4 per 1000; in the last two years it had fallen to 1·9 per 1000. Dr. Hope exhibited models of the new and the old workmen's dwellings. Speaking of sanatoriums, he said that these must fail as great preventive means, whilst they had other uses. He gave an account of the sources of information at the disposal of the health authorities for the recognition and subsequent amelioration of tuberculosis, and considered that the various authorities now engaged in this work could with advantage be unified. He advocated as wise and economical the support of the dependents whilst the breadwinner was undergoing treatment, and considered that

accommodation for advanced cases and possibly the compulsory detention of dangerous cases were required. He estimated that the disappearance of phthisis would mean a saving to the nation of one-eleventh part of the total cost of pauperism—i.e., of £1,000,000 per annum. There was compulsory notification in the case of pauper consumptives, and he thought that this rule should be extended to all those who sought relief in any medical charity. Voluntary notification had worked well in Liverpool. Notwithstanding that the population of Liverpool had increased 115,000 from 1895 to 1910, the total number of deaths last year from phthisis was 3056 less than in 1895. Dr. Hope then gave an account of the German system of insurance for sickness, which he praised and said it deserved earnest attention.—Dr. W. PERMEWAN said that the radical cause of consumption was to be found in the housing condition of the people, and he paid a high tribute to the work that Dr. Hope had done in connexion with this problem. In view of the great prevalence of tuberculosis amongst barmen Dr. Permewan urged the necessity of the power of inspection by the health authorities. This they had not at present. The lighting and ventilation of public-houses were very often deficient.—Dr. NATHAN RAW favoured the prospect of unification of the authorities dealing with tuberculosis. He said that at the present time there were about 800 persons with phthisis mostly in an advanced stage under the care of the Poor-law and thus isolated. He was in favour of compulsory removal and detention of advanced cases. He looked forward to the time when the whole problem of the control of tuberculosis would be undertaken by the health authorities in each district.—Dr. J. J. BUCHAN, medical officer of health of St. Helens, urged the necessity of compulsory notification.—Dr. C. W. P. MOFFATT of Bolton said that in that town the poor people were recognising the infectivity of tuberculosis, and were compelling members of households suspected of suffering from that disease to attend the medical charities.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF STATE MEDICINE.

*Medical Inspection of Schools and Scholars*

A MEETING of this section was held on Feb. 3rd, Professor E. J. MCWEENEY, the President, being in the chair.

Mr. J. B. STORY read a paper on Medical Inspection of Schools and Scholars, in which he advocated the extension of the recent Education Act to Ireland, more especially Section 13 of the Education (Administrative Provisions) Act of 1907, which compels all the local education authorities in England and Wales to appoint medical officers to inspect all elementary school children on admission and (as ordered by the Education Board) twice subsequently before leaving school. The medical officer has also to make an annual report to the local authority on the sanitary condition of the schools in his district, and the local authority has power to provide means of treating the curable maladies of the children infected subject to the approval of the Education Board. The educational arrangements in Ireland differ so much from those in England and Wales that the Act would, he said, require considerable modification before it could be applied to Ireland; but the necessity is urgent, as could be inferred from the report of the Dublin Sanitary Association recently published in the daily press. The Act referred solely to elementary schools, but Mr. Story contended that in Ireland the intermediate schools were very nearly as much in need of medical inspection as the national schools.

The PRESIDENT thought that medical inspectors for the schools should be introduced as soon as possible. He had often remarked the extreme frequency of vermin amongst the poorer classes, which vermin, he considered, gave entrance to staphylococcal infection.

Dr. J. H. P. BOYD BARRETT said that the Irish National Board had no power to spend its money on medical inspectors. He had read the report of a recent meeting at Paris, where representatives of all countries had assembled. This report showed the tremendous benefit which such countries as Germany, France, Russia, Holland, and even Mexico had derived from medical inspection of their schools. He laid great stress upon the fact that children were compelled to attend schools, yet no precaution was taken to prevent the spread of infectious diseases amongst them.

Dr. T. DONNELLY said that children or their guardians should be instructed as to the necessity for cleanliness. Mr. Story had shown the small amount of money that was necessary for medical inspectors, and if the matter was put fairly before the public he thought there would be no difficulty in getting a small rate.

Dr. T. P. C. KIRKPATRICK said that there was criminal negligence displayed in connexion with school children. He thought that if compulsory inspection was not adopted compulsory education should be stopped.

Sir JOHN MOORE said that 11 years ago he sat on the Local Government Commission to inquire into the health of Dublin. As one of the Commissioners it was his duty to visit the primary schools in Dublin. He then had no idea that such dirt and insanitary surroundings existed in their schools. The Commission made very strong recommendations which turned out to be practically a dead-letter. The Board of National Education was wrongly constituted. There should be a fair representation of medical men on the Board. It was most unfair that they should have no provision for safeguarding the condition of the children who went to the primary schools. These primary schools were hotbeds of infection, especially whooping-cough and measles, and neither of these diseases was notifiable.

Dr. R. B. MCVITTIE said a great deal had been said about infectious diseases which caused some benefit by giving immunity from these diseases in adult life. He did not consider them so serious as heart diseases. A number of children with feeble hearts were driven to school by a compulsory Act. If their object was to be gained, it was necessary for the medical profession to agitate persistently and constantly.

Dr. M. F. COX said that if the people did not move in the matter it was because they were ignorant. In America dirty children were not allowed into a public school.

Mr. STORY then replied.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the Royal Devon and Exeter Hospital on Feb. 10th, Mr. J. M. Ackland, the President, being in the chair.—Mr. C. E. W. Bell showed the following specimens: 1. Suppurating Gall-bladder, removed by operation, which formed a tumour descending well into the right lower abdomen and was greatly distended by several calculi. The patient made an excellent recovery. 2. Uterine Fibroid, partially extruded from the cervix uteri and removed per vaginam. 3. Vesical Calculus, removed by the suprapubic route from a man whose general condition made operation an anxiety, but who subsequently made a good recovery.—Mr. A. C. Roper showed specimens of: 1. Hydatidiform Mole, expelled naturally from a multipara, aged 41 years, who was admitted to hospital for severe hæmorrhage. The mass was delivered complete, a subsequent precautionary curetting by Mr. Roper revealing no further fragments. Sections by Dr. R. V. Solly showed no evidence of chorionic epithelioma. 2. Uterine Myoma (subperitoneal). The fibroid had become detached from the uterus and formed a tumour in the right lower abdomen. The woman was admitted to hospital with a history of recent peritonitis and for threatened bowel obstruction. Some difficulty was met with at operation owing to the omentum having curled itself round the tumour, which in turn lay in a bed of mesentery.—The specimens were discussed by Dr. J. D. Harris, Dr. G. P. D. Hawker, and Mr. G. E. A. Evans.—Dr. J. Shirley Steele Perkins reported a case of Renal Calculus in a woman aged 45 years. The case was remarkable for the small size of the stone and the definite diagnosis by means of a very clear skiagram, which, together with the calculus, was exhibited.—Dr. Harris and Mr. Roper discussed the case.—Mr. Roper reported two cases of Intestinal Obstruction, the first occurring in a young woman two weeks after confinement. The second case was that of a man aged 60 years. Obstruction appeared to be due to a small growth in the splenic flexure. Mr. Roper then read a paper entitled "Traumatic Neurasthenia and the Workmen's Compensation Act." He defined traumatic neurasthenia as "suspension, inhibition, or perversion of function resulting, without discoverable reason, from an accident or operation." Mr. Roper considered these cases to be rare and their extension from the leisured to the

labouring classes to be a matter deserving investigation. He illustrated his paper with notes on four cases under his personal care. Of these cases the actual injury in the first was of a very trivial nature, but vague neuralgic pain, diminution of field of vision in injured eye, flashes of light, together with restlessness and depression, followed. The man eventually compounded with his insurance company, gave way to drink, and became insane. In the second, a man, aged 30 years, received a severe cut at the junction of the cornea and sclerotic from a flake of red-hot metal. Removal of the eye was imperative, but recovery, as far as the wound was concerned, was in all ways satisfactory. This man became deeply depressed, but finally he recovered. In the third case a man, aged 43 years, had the ninth and tenth lower left ribs fractured through the backing of a cart against him. For many months there was vague neuralgic pain, at first thought to be due to exuberant callus, and a slight chiselling operation and electrical treatment gave no result. An exploratory laparotomy was then done, the symptoms suggesting the possibility of adhesions to some viscus. Nothing abnormal was detected, but the pain gradually disappeared; the man returned to work, and is now quite well. The last case was that of a man, aged 50 years, whose right eye was injured with a stick whilst he was hedge cutting. Some corneal opacity resulted, but otherwise the eye soon quieted down. Mr. Roper, in reporting his case to the insurance company, and suspecting neurasthenia would follow, advised one and a half year's total compensation to settle and get the man back to light work. The man, however, demurred, and was taken into hospital for further observation. Here he was found to have exaggerated reflexes, normal pupils, and a greatly reduced field of vision. He was advised to accept the company's offer and to return to light work. When told that worry about compensation had much to do with his symptoms, which were undoubtedly due to nerve and not to direct ocular defect, he admitted that his mind was never free, assented to a settlement, and returned to light work. Mr. Roper emphasised how frequent these cases had become since the passing of the new Act—inducing, as it did, greater introspection on the part of the labouring man than formerly and far more than was good for him. One must, however, separate this condition from that of the true malingerer. Work of some kind was undoubtedly a remedy in traumatic neurasthenia.—In the discussion which followed Mr. R. Pickard, Dr. J. Raglan Thomas, and Mr. Bell took part.—Mr. Roper replied.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 2nd, Mr. A. W. Cuff, the President, being in the chair.—Mr. R. J. Pye-Smith opened a discussion on Cases of Injury under the Workmen's Compensation Act, in Relation Specially to Diagnosis (with regard to justice of claim), Treatment (with regard to completeness of recovery), and Prognosis (with regard to resumption of work). He referred to statistics to show the large number of workpeople (over 7,000,000) affected by the Workmen's Compensation Act, the number of accidents at employment (nearly 350,000) occurring annually, and the fatalities (between 3000 and 4000). Probably less than 2 per cent. of all claims came before the county court judges for arbitration. In these cases he thought that the medical referees should be more frequently called on to act as assessors, as their presence exercised a healthy influence over the medical witnesses, and enabled the arbitrator better to appreciate such evidence and the physical condition of the injured man. The advantages of the Act, whereby the honest and industrious man received pay sufficient to keep his home together when disabled by accident, were largely counterbalanced in the case of the dishonest and lazy by such dangers as the temptation to make the most, instead of the least, of an injury, to exaggerate its effects, to abstain from proper remedial measures, to shirk work, to cheat his employer, to bring misery on his family, and to degrade his own moral nature. Mr. Pye-Smith insisted on the importance of a definite diagnosis and of making immediate written notes of negative as well as positive conditions. He discussed the persistence of pain as a cause for the prolongation of many cases resulting in honest differences of opinion between medical witnesses, the undue frequency of sepsis, the stiffness resulting from fractures and sprains, and the danger of inconsiderate suggestion. Prognosis was often particularly difficult, because the surgeon responsible for forming it usually had not control of the treatment; much also depended on the degree of honesty of the workman. Too many cases dragged on for an inordinately long period for lack of a definite idea of how long the case ought to last.—Mr. A. C. Turner pointed out that the Act was concerned with "loss of capacity for work from an accident," which was defined as "any mishap or untoward event which is not expected or designed." Whether the cause of injury was an accident or not was for the lawyers to decide, but the medical man must say if a given injury could be caused by a given accident. It was necessary to examine not only the injured part but the body generally. It was also very important to know exactly what work the man did, and to personally see such work done. The results of an accident had to be "natural and reasonable."—Dr. E. W. Adams pointed out that in cases of life assurance and private accidental injury the opinion of the medical referee was not often seriously challenged. But in cases of injury to workmen the medical man must be prepared to defend every statement of his report. He thought it would be a great help and advantage to have associated with the examiner an intelligent mechanic conversant with the particular process which the man would have to return to if certified fit. The prognosis, which was the most important factor from the insurance company's point of view, must include not merely an estimate of the time necessary for healing or recovery, but also the probable time required for the perfect functioning of the injured part.—Dr. F. J. Sadler showed a boy, aged 8 years, convalescent after Typhoid Fever complicated by "Meningitis," who had been treated by injections of killed typhoid bacilli.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 15th, Mr. W. Morley Willis, the President, being in the chair.—In opening a discussion on Syphilitic Throat and Skin Affections, Mr. J. Mackie confined his remarks chiefly to the diagnosis between syphilitic, tuberculous, and malignant disease of the throat and larynx. Chancre was rare in this region; on the other hand, it was a favourite site for secondary and tertiary manifestations of syphilis. The secondary stages did not last long and readily responded to treatment. In the tertiary stages gummata usually appeared on the posterior surface of the uvula, on the palate, and on the base of the epiglottis. The importance of the family medical attendant, who knew the history of the patient, was emphasised in the question of diagnosis. In doubtful cases iodide of potassium frequently cleared the diagnosis, and a careful examination of the chest and sputum would eliminate or prove the presence of tubercle.—Mr. J. P. W. Gray said that primary chancres were very rare in the region of the throat; they were accompanied by great enlargement of the cervical and submaxillary glands. After six weeks secondary manifestations appeared chiefly as (*a*) multiple, slightly infiltrated mucous patches on the fauces; or as (*b*) superficial ulceration of the mucous membrane accompanied with rather deeper infiltration. These symptoms were seen more commonly in women than in men, because the men, as a rule, were already under treatment and so often escaped. Five years after infective gummata might be found as tumours infiltrating the surrounding tissues. As these frequently arose behind the soft palate, they often escaped detection; moreover, they broke down with surprising swiftness, leaving a deep ragged ulcer, sometimes involving most of the uvula and one side of the pharynx. As this healed it led to serious deformities; in some cases the adhesions almost entirely shut off the post-nasal space from the pharynx. Syphilitic rhinitis in congenital disease was very amenable to treatment. The general treatment consisted in giving mercury and iodides, and in all cases ordering a mercurial lotion as well.—Dr. F. H. Jacob dealt chiefly with syphilitic skin lesions and the bacteriology of syphilis. The organism was best examined through a dark-ground condenser. Lupus was often difficult to diagnose from syphilis; the chief aids in the diagnosis were the pressure of a watch-glass which showed the apple-jelly granulations in lupus, the tuberculin test, the microscope, and the Wassermann reaction. The latter reaction had shown them that antisyphilitic treatment should be continued for three years; also that the best methods of treatment were: (1) "606," (2) the inunction method, (3) the injection method, (4) by means of suppositories, and (5) that oral treatment was the slowest and least satisfactory. In the tertiary stages

potassium iodide should be pushed to large doses—e.g., one drachm three times a day. Very often arsenic added to a mixture of iodide and mercury proved of great value.—Dr. C. H. Cattle, Dr. A. Stanley Green, and Dr. M. Parry-Jones continued the discussion.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at the Medical Institute, Liverpool, on Feb. 17th, Dr. J. B. Hellier (Leeds), the President, being in the chair.—Dr. H. Briggs (Liverpool) showed several Obstetrical Mannikins, which he claimed rendered the teaching of operative midwifery both easier and more satisfactory.—The President showed an Intra-mural Myoma removed from a woman, aged 25 years, in her second pregnancy. The tumour had grown with great rapidity and showed some signs of degeneration. The patient had done well and had not miscarried.—Dr. J. E. Gemmell (Liverpool) showed specimens of: (*a*) An Ovarian Abscess Simulating a Fibroid, which had been noticed during a pregnancy some seven months before the operation. In the course of separating adhesions during the operation the abscess, which appeared to be intimately connected with the uterus and as large as a five months' pregnancy, was ruptured, and so panhysterectomy was performed. It was only on subsequent dissection that the tumour was found to be ovarian in origin. (*b*) A specimen showing Multiple Fibroids of the Uterus in one of which red degeneration had taken place. The operation (sub-total hysterectomy) was undertaken on account of severe hæmorrhage.—Dr. T. B. Grimsdale (Liverpool) described a case of Persistent Metrorrhagia in a woman, aged 35 years. The patient had been curetted on two occasions, but with only very temporary relief, so after consultation the uterus and one ovary in which there was a blood cyst were removed.—Dr. W. E. Fothergill (Manchester) read a paper dealing with the proper use of the word "endometritis" in teaching gynæcology. If this could be settled, definition in the use of other words like "metritis" and "ovaritis" would naturally follow. Endometritis certainly implied the inflammatory reaction of the tissues to irritation by septic, gonorrhœal, tuberculous, and other micro-organisms. The word was, in fact, the name of a pathological process. But it was constantly used as a name for various clinical states or diseases which were not caused by infective or other irritants. Amongst the conditions often called "endometritis" were pelvic hyperæmia, hyperplasia of the endometrium, sub-involution, the menorrhagia of puberty, the menorrhagia of the menopause, and even menorrhagia secondary to various general diseases. Dr. Fothergill considered, in the first place, that the teaching of gynæcology would gain in simplicity and accuracy if the use of words ending in "itis" were confined to cases in which there was clinical evidence, in the form of history, symptoms, or signs, that infection had played a part in the causation of the condition. Further, he thought it would be of advantage if words ending in "itis" were used only for pathological processes which occur in the course of infective disease, and were not used as if they were the names of diseases with independent and separate existence.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Feb. 3rd, Mr. F. Lace, the President, being in the chair.—Dr. R. Waterhouse showed specimens of the Thymus Gland, weighing 24 grammes, removed from a child, aged 9 months, who died suddenly whilst being bathed, and the Thymus Gland of a child, aged 3 months, weighing 34 grammes, who died from asphyxia from pressure on the trachea, breathing having been embarrassed since birth; tracheotomy gave no relief.—Dr. G. J. King Martyn read a paper on the Use of the Calcium Salts. He gave a *résumé* of the known physiological effects of calcium on the tissues and blood and the evidence of the regulation of calcium metabolism by the thyroid gland. The intolerance of iodides in myxœdema was due possibly to the liberation of thyroid secretion on the cerebral circulation. He advanced the theory that sporadic goitre was due to compensatory hypertrophy of the thyroid gland to cope with added calcium metabolism induced by drinking certain limestone waters. The treatment of rheumatoid arthritis by thyroid extract was essentially the same as that by iodides. He pointed out that one of the benefits of cod-liver oil in rickets was due to its forming a soluble soap with calcium. As regards calcium increasing the coagulation of blood, clinical experience seemed to be contrary to recent experimental work. He instanced as morbid conditions in which he had found the administration of calcium beneficial: hæmophilia, epistaxis, chronic sneezing, chilblains, certain headaches, orthostatic albuminuria, and Henoch's purpura. He pointed out the relation of strontium to calcium and its success where the latter salt had failed. He ascribed the failure of calcium to produce benefit in some cases either to non-absorption or to its not being given over sufficiently prolonged periods. The question of calcium metabolism was of great interest with regard to the Bath waters. In these calcium was present only as the sulphate and carbonate and in small quantities. Hence it was probably not absorbed at all, or in such minute quantities as to do no harm. He had never seen thrombosis or other phenomenon which might be due to calcium absorption occur during the drinking of the waters. If, however, excretion of calcium in the body were desired, iodides could be taken with the mineral water. This was a valuable method of administration preventing iodism. He found the best preparations of calcium to be the lactate, the chloride, and the iodide, and mentioned a case of diplopism lasting 12 hours, and a case of "dualism" whilst taking the chloride which passed off without bad effects.—Dr. J. Lindsay read a paper entitled "Bilious Headaches," illustrating it by the case of a man, aged 51 years, in which these headaches recurred at regular intervals, commencing at the age of six.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 9th, at St. John's Hospital, Leicester-square, Dr. P. S. Abraham, the President, being in the chair.—Dr. G. Stopford Taylor (Liverpool) showed a case of Darier's Disease in a man, aged 33 years, with a general hypertrophy of the whole sebaceous system, which had commenced two and a half years ago.—The President showed a boy, aged 5 years, with Dermatitis Herpetiformis in the acute stage, in which staphylococci had been found in the bullæ.—Dr. G. Norman Meachen showed: (1) A child, 5 years of age, with Granuloma Annulare upon the right wrist of three months' duration; and (2) a case of Leukoplakia in a man, aged 83 years.—Mr. Dennis Vinrace showed a girl, aged 8 years, with Multiple Tuberculous Lesions after Varicella.—Dr. W. Knowsley Sibley gave a demonstration of the method of Hyperæmia in the Treatment of Skin Diseases, illustrated with cases.—Dr. W. Griffith showed: 1. A case of Severe Nodular Infiltration of the Thigh in a man aged 25 years. The case excited much interest, and several members expressed the opinion that the condition might be one of mycosis fungoides. 2. Erythema Multiforme in a man aged 24 years.—Dr. Morgan Dockrell showed a case of Syphilis in a young woman who had been treated by two intravenous injections of 0·4 gramme of "606," and Dr. Griffith demonstrated the apparatus used.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held in the library of the Royal Army Medical College, Millbank, on Feb. 8th.—Fleet-Surgeon R. C. Munday, R.N., of H.M.S. *Hyacinth*, East Indies Station, read a paper on Different Types of Beri-beri Occurring in Naval Ships Cruising in the Persian Gulf during 1909-1910. He said that the number of men serving in the Gulf during 1909 was more than double that of any preceding year of modern times. The service is a very arduous one; no leave or exercise can be given to the men and the supply of fresh provisions is very limited and of poor quality. The number of Asiatics serving in the ships of the Persian Gulf numbered 182 in 1909 and 317 during 1910—a very considerable increase. In 1909 19 cases of beri-beri, with 7 deaths, appeared among Asiatics, whose staple diet was white, highly polished, over-milled, uncured rice; and as the result of substituting cured rice, increasing the nitrogenous part of the diet, and instituting other precautions, dietetic and otherwise, only two cases, and those doubtful ones, occurred in 1910. This was most satisfactory, but the extraordinary part was that although no Europeans were attacked in 1909 when the epidemic among the Asiatics occurred, in 1910 there were 17 cases of beri-beri among them, while, with the exceptions before stated, the Asiatics escaped. From the clinical evidence there could be no reasonable doubt that all these 17 cases should be classed as beri-beri. All classes were affected. Uncured, over-milled rice did not form part

of their diet; indeed, in many of the cases no rice was eaten, and Fleet-Surgeon Munday advanced the opinion that when beri-beri occurred in the Asiatic rice-eater the cause lay in the poverty of his rice, which had lost by over-milling certain necessary ingredients, but that when it occurred in the European *non-rice-eater* the cause lay not in the rice (which was not his staple food), but in a deficiency of some other article of food, which, or portions of which, were vital to the proper nutrition of his nervous system; that this lack might be brought about by inability to assimilate the necessary portions, even where present in the diet, through mal-digestion, caused by inferior quality of food, nervous depression due to climate, monotony of service, lack of exercise, &c.—The paper was discussed by Fleet-Surgeon W. E. Home and Staff-Surgeon O. Rees, and the debate was wound up by the President, Sir David Bruce, who expressed a strong hope that over-milled rice would be interdicted for the future. While expecting that the work of Fraser and Stanton and other observers would hold good, he could not help thinking that the explanation they offered was almost too simple. For his own part, he thought that probably some peculiar protein body had disappeared from the over-milled rice, though what it was no one could yet tell. This protein body might be absent from the diet of Europeans, as in the case of the European outbreak described in the paper.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Feb. 9th, Mr. J. Ernest Lane, the President, being in the chair.—Mr. J. Jackson Clarke related the notes of two cases of Abscess of the Liver Complicating Appendicitis. Both patients were boys, one aged 8½ years and the other 4 years. In both the original lesion was an easily accessible, perforated appendix with abscess. The symptoms of liver implication were obscure, there being no downward increase of liver dulness and the upward increase occurring late; the chief symptom was fever of septic type not otherwise accounted for. In both cases exploration through the ninth intercostal space revealed the pus, so that part of the ninth rib was removed. The intrahepatic situation of the abscess was established at the operation. Infection of the pleura followed operation in one case in spite of the usual precautions. Both patients recovered completely.—Dr. Frederick J. McCann read a paper on the Surgical Treatment of Sterility in Women. He said that while sterility in women resulted from both gross and minute changes in the pelvic organs, surgical treatment was applicable only to the former. No major treatment should be undertaken until impotence in the male had been excluded. One-fourth of the cases of sterility were due to this cause. In the past attention had been given chiefly to malpositions of the uterus, and the ovaries had been neglected. Gonococcal and other infections led to adhesions in the tubes and ovaries and occlusion of the tubes. He described the operation of salpingostomy and said that a large incision was desirable; all adhesions must be separated, and the uterus suspended to avoid the formation of new ones. The tubes remained patent as had been proved in subsequent operations; no probe should, however, be passed. Suitable cases were those in which there was increased menstrual loss, with or without pain preceding the period, sacral backache, and possibly dyspareunia. Such cases showed on examination partial fixation of the uterus, though occasionally it was freely moveable, with tenderness if the tubes were thickened. There appeared to be no special liability to tubal pregnancy, although he was aware of one instance after this operation. For uterine displacements he advocated hysteropexy by an open operation rather than that of Alexander-Adams. Pregnancy often followed such operations. Pessaries should not be used. Curetting had very limited indications in the treatment of this condition, only cases of "chronic glandular hypertrophic endometritis" with the uterus normally placed, free loss, and normal tubes being suitable. Division of the cervix was often valuable for sterility associated with spasmodic dysmenorrhœa.—The paper was discussed by the President, Mr. A. C. Butler-Smythe, and Dr. R. Paramore.—Dr. McCann replied.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held in the Radcliffe Infirmary on Feb. 10th, Mr. R. H. A. Whitelocke, the President, being in the chair.—Dr. A. L. Ormerod brought forward a scheme for the Voluntary Notification of Cases of Tuberculosis. He suggested that the practitioner in attendance and the patient should each sign the form of notification, and that such notification should give permission for the medical officer of health or his deputy to visit the house, examine contacts, and give general advice; that the practitioner should receive for each notification a fee of 2*s.* 6*d.*, and that each patient should only be notified once, such notification being made only after confirmation of the diagnosis by a bacteriological or physiological test. If the notification were signed by both the patient and the practitioner the responsibility of medical men became less. The reason for notification once only was obvious when it was considered that in the interests of public health each case must be kept under observation until death, and this in itself would prevent the hasty notification of doubtful cases.—Dr. W. D. Sturrock read a paper on Some Recent Work on Cancer. Having given a definition of an established cancer as a parasite rooted in its host, he outlined the broad divisions of work done on the subject. While work on metabolism was of great value, he had specially chosen for review the transplantation work done by the Cancer Research Fund workers and others. The main points brought out were that a successful transplantation needed a special reaction on the part of the connective tissue, which had to provide a stroma for the support of the growing graft, consequently the absence of such reaction made a graft powerless, and was an expression of immunity. Such immunity could be obtained experimentally and suggested the possibility of similar immunity being established towards secondary growths, which were somewhat analogous to transplanted growths. On the other hand, it appeared that too great a response of the connective tissue might strangle an established growth, and this again suggested a possible means of attack upon the primary growth itself by stimulation of the connective tissue.

# Reviews and Notices of Books.

*The Physiology of Reproduction.* By FRANCIS H. A. MARSHALL, M.A. Cantab., D.Sc. Edin., University Lecturer in Agricultural Physiology, Cambridge. With a preface by Professor E. A. SCHÄFER, Sc.D., LL.D., F.R.S., and contributions by WILLIAM CRAMER, Ph.D., D.Sc., and JAMES LOCHHEAD, M.A., M.D., B.Sc. Edin., F.R.C.S. Edin. With 154 illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, and Co. Pp. 706. Price 21*s.* net.

IT is claimed for this work that for the first time the physiology of the organs of reproduction has been presented in a complete form, and that it furnishes a much needed introduction to eugenics. The book is addressed primarily to the trained biologist, though it is hoped that it may be of interest to medical men engaged in gynæcological practice, veterinarians, and breeders of animals. The physiology of generation in animals, more particularly in the higher forms and mammals—though invertebrates are not omitted—is specially discussed. Heredity, cytology, and variation are omitted intentionally, but a large part of the work deals with morphology. The breeding season in invertebrates and vertebrates is fully discussed, then the œstrous cycle in mammalia, and an account of the changes that occur at this season in the non-pregnant uterus, with details of histological and other changes in the ovary. Some of the figures are original, others are from Sellheim. The author is of opinion that there is no doubt regarding the essential similarity between the menstrual cycle in the primates and the œstrous cycle in the lower mammalia. A very interesting chapter is devoted to the ovary, oögenesis, growth of the follicles, ovulation, and corpora lutea. The account is very full, and confirms the views of Sobotta, that the luteal cells represent the epithelial cells of the undischarged Graafian follicles. Spermatogenesis and insemination are next dealt with, and mention is made of the process of artificial insemination, as first practised by Spallanzani. In discussing fertilisation the author is led to a study of the importance of Mendel's discovery. It forms

a basis for a theory whereby variability can be discussed in terms of the conjugating cells themselves. He states reasons for supposing that sex is a Mendelian phenomenon, but brings forward no good evidence for the existence of what has been called telegony. A full account is given of Loeb's work to elucidate the physico-chemical aspects of the phenomena of fertilisation.

There is a careful account of the accessory reproductive organs of the male. The biochemistry of the sexual organs is dealt with by Dr. Cramer, but really not much is definitely known of this subject, in mammals at least. There is an interesting chapter in which is collected what is known regarding the ovary and testes as organs with internal secretions, while the chapter on fœtal nutrition and the placenta is one of the fullest in the book. A special chapter on the changes in the maternal organism during pregnancy is contributed by Dr. J. Lochhead under the following heads: (1) The stimulus for the maternal changes during pregnancy; (2) changes in the metabolism of the mother; (3) changes in the maternal tissues during pregnancy. The innervation of the female generative organs, uterine contraction, parturition, and the puerperal state are next dealt with. Lactation, fertility, the factors that determine sex, the phases in the life of the individual, the duration of life, and the cause of death complete the wonderfully interesting story set forth by the author with perfect clearness, and with a supply of pictorial illustrations that adds greatly to the value of the work.

We feel sure that this book will be warmly welcomed by the biologist, as well as by the physiologist and those interested in the ever-growing subject of eugenics. The work is dedicated to Walter Heape, whose original work marks a period in the history of this engaging subject.

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*A System of Syphilis*. In Six Volumes. Vol. V. Oxford Medical Publications. Edited by D'ARCY POWER, M.B. Oxon., F.R.C.S. Eng., and J. KEOGH MURPHY, M.C. Cantab., F.R.C.S. Eng. With an Introduction by Sir JONATHAN HUTCHINSON, F.R.S. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 356. Price £2 2*s*. per volume net, or £10 10*s*. net for six volumes.

The fifth volume of this very excellent "System" deals with the Affections of the Skin in Syphilis, by Dr. Phineas S. Abraham and Dr. Haldin D. Davis; Ocular Syphilis, by Mr. C. Devereux Marshall; Aural Syphilis, by Mr. C. Ernest West; and Syphilis in the Upper Air Passages, by Dr. StClair Thomson.

The first section, which deals with diseases of the skin, is excellently written, and contains a good account of the numerous skin eruptions that may be met with in this disease. Of necessity a good deal is repeated which has appeared in previous volumes, but without spoiling the completeness of the description this is inevitable, and it is, indeed, rather an advantage than a drawback, because it eliminates tedious and annoying cross references. The section contains some 30 illustrations, nearly all direct colour photographs, beautifully reproduced and of great merit.

In a short appendix to this section an account is given of the chemical nature and uses of the new remedy, dichlorhydrat-diamidoarsenobenzol, salvarsan, or "606," as it is commonly called. It is a great pity that these volumes have been published so soon after the discovery of this apparently specific drug for syphilis. It would have added greatly to the value of the work if the results of the administration of "606," as far as they have gone, could have been included, but unfortunately the book has been published just a few months too soon. Most of the reports which have so far appeared in our columns and elsewhere lead to the belief that the contentions put forward by Ehrlich with regard to this new remedy are by no means extravagant, and that it is possible that we may find in "606" a most valuable remedy for syphilis. It is already clear, however, that the drug must not be used without care and a proper selection of cases suitable for its administration, and the important question whether the results obtained are permanent or only temporary still remains to be solved.

The article on Ocular Syphilis, contributed by Mr. Devereux Marshall, forms an inclusive, and at the same time succinct, account of these important affections of the eye. Aural syphilis is one of the worst forms of this disease, at any rate when certain parts of the auditory tract are involved—for example, the labyrinth; and although the treatment of syphilis has made such vast strides during the last 50 years, yet the outlook in these distressing cases is still exceedingly hopeless. This has resulted from the extreme intractability of the conditions, the fact that the changes in the labyrinth are painless and insidious, and from their irremediable nature when once established. The very interesting subject of syphilitic affections of the nose, pharynx, and larynx is fully discussed by Dr. StClair Thomson, and there are some good illustrations accompanying this section.

On the whole, this volume is well up to the standard of the preceding ones and carries on the good work of the previous writers. The sixth volume was favourably reviewed in these columns a few weeks ago. The editors are to be congratulated on the uniform success that has attended the issue of each instalment of the book.

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*Lehrbuch der Krankheiten des Herzens und der Blutgefässe* (*Handbook of Diseases of the Heart and Blood-vessels*). Von Dr. ERNST ROMBERG, o. Professor und Direktor der Medizinischen Klinik in Tübingen. Second edition. With 69 illustrations. Stuttgart: Ferdinand Enke. Pp. 588. Price 14 marks, bound.

RESEARCH, both clinical and experimental, in regard to the phenomena presented in disease of the heart and blood-vessels, has proceeded so rapidly during the last few years that the literature is enormous, and much useful information lies more or less hidden in monographs and in papers in periodical medical publications. A text-book affording a critical review of recent work and containing thorough descriptive accounts of the individual diseases and morbid conditions, while providing practical recommendations in regard to their treatment, should be of great value. Such a text-book is Professor Romberg's work. The appearance of a second edition is good evidence of the esteem in which it is held in Germany. In the preface to this edition Professor Romberg strongly urges that we should study the complex problems of the circulatory system in disease from as many aspects as possible, and he utters a strong note of warning against the tendency to over-estimate the value of any one mode of examination. As an example, while admitting the great help that has been afforded by the study of the venous pulse, he is of opinion that at the present time there is some danger of over-estimating the value of the conclusions drawn from it. It is this critical note, as well as its wide range, which gives this book its special value.

The introduction is devoted to general considerations, including anatomical and physiological details, and to the general methods of examining and recording the signs of cardio-vascular disease. The symptoms and physical signs of organic heart lesions are next categorically described in detail, including those due to the congestion of other organs. Chronic insufficiency of the heart muscle apart from valvular disease is fully described, and the various forms are clearly differentiated according to their etiology, each

form being noticed separately. The individual valvular lesions and the clinical manifestations of each are dealt with. Under the physical signs of aortic regurgitation Professor Romberg mentions the occurrence of Flint's murmur, but states that he has never yet observed it, a statement which seems remarkable, since this murmur is by no means extremely rare. He lays special stress on the occurrence of true aortic regurgitation without the presence of a diastolic murmur. Certain other general statements in regard to some of the left-sided lesions are not quite in accord with the generally accepted views in this country—e.g., mitral regurgitation is said to be the most difficult of all acquired valvular defects in diagnosis. Although it is explained that the chief difficulty consists in distinguishing between organic valvular defects and mechanical incompetence from muscular weakness, yet this is surely a lesser difficulty than the diagnosis of aortic stenosis. Again, it is stated that pure mitral stenosis is the rarest of all left-sided lesions; indeed, Professor Romberg states that he has seen only two cases. Admitting that regurgitation is a frequent accompaniment, clinically no inconsiderable portion of cases present physical signs of stenosis only, a fact which Professor Romberg afterwards admits. Congenital heart lesions are dismissed with but very brief notice, and this section is not worthy of the general character of the book. The treatment of chronic heart failure and of valvular defects is exhaustively considered, and constitutes the best feature of the work, while providing a clear account of German practice in this matter. The section is, moreover, admirably arranged, the various factors in treatment being dealt with separately and at considerable length.

Affections of the myocardium and of the endocardium are fully dealt with, and clear accounts are given of their clinical characters, diagnosis, and treatment. For the puncture of the pericardium to withdraw serous effusions, the method advised is to insert the trocar and cannula outside the left nipple line in the fifth or sixth interspace, at a spot where there is dulness, but where no impulse is felt or pericardial rub heard. Under the heading of diseases of the blood-vessels useful descriptions of arterio-sclerosis, aneurysm, thrombosis, embolism, and phlebitis are included. Lastly, the various neuroses of the heart and blood-vessels are considered. A few illustrations and extensive bibliographies at the end of each section add to the value of this useful book.

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*Plant Anatomy.* By WILLIAM CHASE STEVENS. Second edition. London: J. & A. Churchill. 1910. Pp. 379. Price 10*s.* 6*d.* net.

THIS work deals with the anatomy principally of the higher plants from the standpoint of the development and functions of the tissues. It does not profess to be a work of reference comparable to De Bary's "Comparative Anatomy," but rather a book which the student can use when doing his practical work, the necessity of such work being emphasised by the inclusion of illustrative studies at the end of each chapter. We like the treatment of the subject-matter; the anatomy of plants, in our opinion, should be treated first from the physiological rather than the morphological point of view, and such treatment makes the subject of much greater interest to the student. Further, the work is not overloaded with details; this is an important feature, for sometimes text-books of an elementary nature give too many details, so that the tendency of the student is not to differentiate between fundamental and less important facts.

The volume under review starts with the consideration of the cell, and then passes on to the differentiation of the tissues, secondary increase in thickness, protection from injuries and loss of water, gaseous interchange, translocation of food-stuffs, storage of food, secretion, and excretion. Also there is a chapter on reproduction, which includes the development of microspores and macrospores, together with a short account of Mendel's laws and some features arising therefrom, a subject which seems to have been dragged in without reason. The latter portion of the book deals with micro-technique, and the two final chapters are concerned with the micro-chemistry of alkaloids, glucosides, carbohydrates, colouring matters, and other plant products, and with the detection of adulterations in foods and drugs respectively. It is thus seen that the range of the book is pretty wide.

We think that the continuity of protoplasm in sieve-tubes and other elements should have been dealt with in the more descriptive part of the book rather than in the chapter on the micro-chemistry of plant products. As it stands, this important phenomenon may be overlooked. The same criticism also applies to callus, which might have received more attention. In a few cases statements might have been qualified; thus, on p. 36 it is written that "the walls of both sieve-tubes and companion cells remain cellulose." The qualification appears desirable, since in the sunflower, a type very commonly used in this country, lignification of the sieve-tubes may take place. There are 152 illustrations, many of which are original and the majority very good.

We consider the book on the whole distinctly good. The clearness of statement, the sufficiency of figures, and the practical directions make it a work that can be safely recommended, not only to the student working under the direction of a teacher, but also to the amateur who has no such advantage.

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*Manual of Human Embryology.* Edited by FRANZ KEIBEL (Freiburg-i.-Br.) and FRANKLIN MALL (Baltimore, U.S.A.). In two volumes. Vol. I. With 423 illustrations. London and Philadelphia: J. B. Lippincott Company. 1910. Pp. 548. Price 30*s.* net.

THIS is the work of a number of German and American embryologists who have collaborated in its production, and the work itself appears simultaneously in Germany and America. The chapters originally written in German have been translated by Professor McMurrich, while the English chapters have been translated for the German edition by one of the editors—Dr. Franz Keibel, who is also responsible for a short historical introduction. Von Baer he rightly regards as the real founder of comparative embryology; indeed, his epoch-marking treatise was considered by so high an authority as Kölliker to be "the best that embryological literature of all times and all peoples has to show." Dr. Keibel also discourses clearly, suggestively, and comprehensively through 90 pages on the germ cell, fertilisation, segmentation, young human ova and embryos, the formation of the germ layers, the gastrulation problem, and gives a summary of the development of the human embryo and the differentiation of its external form.

The human ovum retains its transparency in all stages of development, but it possesses no micropyle. The author found human spermia still motile on the third day in the testes of an executed criminal, the organs having been placed unopened in picro-sublimate; but gynæcologists have observed motion after much longer periods, while in bats the spermia may remain active for months in the female genitalia. "Nothing is known concerning the fertilisation of the human ovum," and "the segmentation stages of the human ovum have not yet been observed." Nor has the formation of the germ layers been observed in the human ovum. In the description of very young ova the author

makes use of the ovum described by Teacher and Bryce, that described by H. Peters in 1899, and the more or less perfectly described human ova by other observers. The summary of development of the human embryo and the differentiation of its external form follows pretty closely the lines of His, and some of the excellent illustrations are taken from Retzius and from Keibel's own faithful representations of embryos at different stages.

To Grosser of Prague is entrusted the development of the egg membranes and the placenta, and also the subject of menstruation, which together occupy another 90 pages, comparative placentation being omitted. It would appear that the mucous membrane of the corpus uteri is never in a completely resting condition in a fertile female. Growth and degeneration alternate regularly and form together a menstrual cycle of normally 28 days, which cycle may be divided into certain more or less clearly marked periods or phases, which are carefully described, and the morphological changes figured and illustrated by several faithful woodcuts from Hitschmann and Adler. Professor Mall contributes an excellent chapter on the Determination of the Age of the Human Embryo, and also one on the Pathology of the Human Ovum. Both chapters are well illustrated by woodcuts. The latter half of the work is devoted to the Development of the Integument and its Appendages, by F. Pinkus; the Skeleton and the Connective Tissues, by C. R. Bardeen; the Muscular System, by W. H. Lewis; and the Cœlom and Diaphragm, by Professor Mall himself.

So far as it goes, this book is the most complete treatise on human embryology which we possess in English and will be welcomed by all workers in this subject. The bibliography is very full. Many standard works are laid under contribution for illustrations, the whole number, with numerous original figures, making a total of 423. Many of them are rendered more helpful by being coloured. The book, especially those chapters dealing with the integument and connective and muscular tissues, will also prove useful to the histologist, quite apart from the very elaborate treatment of the morphogenesis of the skeletal system, which will appeal to anatomists.

We commend this treatise cordially to the attention both of gynæcologists and of embryologists as a storehouse of information, well arranged, and full of data drawn both from animal and human embryology.

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*Electrotherapeutics and Roentgen Rays.* By MIHRAN KRIKOR KASSABIAN, M.D., Director of the Roentgen Ray Laboratory of Philadelphia General Hospital, &c. Second edition. Revised and enlarged. London and Philadelphia: The J. B. Lippincott Company. 1910. Pp. 540. Price 15*s.* net.

A MELANCHOLY interest attaches to the appearance of this work in this country in that it synchronises with the announcement of the death of the author from the effects of chronic X ray dermatitis. He was a hard and earnest worker, and, in fact, was attending to his duties within a day or two of his end. It was our pleasure to review the first edition of his book some three years ago, and the changes and the additions in the issue before us are a great testimony to the advances made in radiology during recent years. It is not necessary to review the whole book in detail; we notice among the new material chapters dealing with instantaneous radiography, tele-radiography, chromo-stereoradiography, and plastic radiography. These are all very complete and may be considered an accurate guide to the practice of the novel applications of X ray technique.

But we wish Dr. Kassabian, with his large experience, had given us more of his own opinions and not taken up so much of his book in quoting the opinions and experiences of others, although no doubt the preparation of so much material entailed a great deal of work and much reading.

Throughout the book numerous excellent illustrations have been added to demonstrate more clearly the various modifications of practical X ray work.

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*A Practical Guide to the Newer Remedies.* By J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon., Assistant Physician to the Bristol Royal Infirmary; Lecturer in Pharmacology in the University of Oxford; and Clinical Lecturer in the University of Bristol. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1910. Pp. 273. Price 5*s.* net.

THE author is careful to point out in his preface that this book does not concern itself with patent medicines or secret remedies, nor does it deal with therapeutic methods as such. A successful attempt has been made to pass in review the newer drugs (mainly the products of synthetic chemistry) the composition and the pharmacology of which have been more or less accurately ascertained. In order to give a practical value to the work the various drugs described have been criticised and compared, and the experimental and clinical evidence for and against the usefulness of each has been carefully weighed, whilst in all cases directions are given as to dosage and the usual mode of administration. Much valuable information is contained in this work, and the complete manner in which the investigations have been made gives confidence in the opinion expressed by Dr. Fortescue-Brickdale.

The paragraphs on arsenic and its compounds will be found of interest. The cacodylates and arylarsonates are duly described, especial attention being drawn to atoxyl. The conclusion is arrived at that in syphilis injections of atoxyl cannot take the place of the classical treatment by mercury, although in many cases a temporary improvement occurs. One of the best chapters in the book is that on hypnotic drugs. A large number of synthetic hypnotics are now on the market, and, speaking generally, they have been found satisfactory clinically. It is pointed out, however, that they vary considerably, both in their chemical composition and in their physiological effect, so that instead of increasing the dose of a mild hypnotic if it fails to produce sleep the physician may employ another of greater strength, and thus avoid, perhaps, unpleasant after-effects. For purposes of description a practical method of grouping is adopted. The first division is headed "Dangerous Hypnotics"; amongst these are included tetronal, isopral, chloralose, and chloralurethane. Division II. contains those hypnotics "having no special advantages"; amongst these are mentioned trigemin and propion. In Division III. the "mild hypnotics" are discussed, such as urethane, hedonal, and chloralamide. We agree with the opinion expressed that the last named is one of the safest hypnotics, and it is especially indicated when there is cardiac weakness. Division IV. contains the "medium hypnotics," such as paraldehyde and sulphonal. Division V. contains the "powerful hypnotics," such as trional and veronal. Other chapters worthy of study are those devoted to anæsthetics and to antipyretics.

Dr. Fortescue-Brickdale has supplied a useful guide to the use of those drugs which have been more recently introduced.

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## LIBRARY TABLE.

*Diseases of the Skin, including Radiotherapy and Radiumtherapy.* By ERNEST GAUCHER, Physician to the St. Louis Hospital, Paris. Translated by C. F. MARSHALL, M.D. Vict., F.R.C.S. Eng. London: John Murray. 1910. Pp. 460. Price 15*s.* net.—The expectations aroused by the announcement of a volume on skin diseases by Professor Gaucher have

not been disappointed by a perusal of the book. Special articles have been written for the volume, adding greatly to its usefulness and interest. Thus, Wickham, Degrais, and Domenici describe the recent developments of radiumtherapy; Monier-Vinard writes on sporotrichosis, Rubens-Duval on blastomycosis, and Domenici on mycosis fungoides. For the English reader much of the interest of a book on dermatology, written by one of the physicians of the St. Louis Hospital, lies in the novel methods of description and treatment. It appears strange, for example, that at St. Louis psoriasis should be treated chiefly with arsenic, and that no mention is made of the excellent results obtained, especially in acute cases, with salicylic acid. In all English text-books we should find chrysarobin described as the best local remedy. Professor Gaucher mentions it among a list of other drugs, and pauses only to consider its disadvantages. In the descriptions of comedones, acne, and seborrhœa, the conclusions of Dr. Sabouraud are but lightly referred to; perhaps a wise step in a book intended chiefly for students. The practice of radiotherapy in dermatology has been carried probably to a higher degree in France than in any other country, and when this is remembered Professor Gaucher's remarks on p. 40 will be noted with interest and some surprise. In his experience there is a form of skin disease which is peculiar to operators, who, he says, suffer from a radioneuritis due to an ascending neuritis which is manifested by thin glossy skin, telangiectases, ulcerations and fissures, and papillomas which may become epitheliomatous. This condition is caused by repeated small doses of the rays, and Professor Gaucher says he has seen three cases. In this country such conditions have been so frequently seen both in operators and in patients who have had many short exposures to the Roentgen rays that the only conclusion to be drawn from Professor Gaucher's extremely limited experience is that French operators must have employed proper precautions for their safety in advance of other nations. The illustrations have been taken mostly from models in the St. Louis Hospital Museum and from Professor Gaucher's private collection, and it is matter for regret that the process of reproduction has not done justice to the models; few give a clear representation or clinical picture of the disease. This drawback to an excellent text-book should be remedied in a future edition. The book is written with an ease and fluency which render it most attractive reading. The descriptions are vivid, brief yet complete, and stimulate thought. The volume will meet the needs of the advanced student who desires something between the small handbooks and the large volumes such as those of Dr. Radcliffe Crocker.

*West African Hygiene, with Recent Observations on Yellow Fever and West African Fevers.* By EDWARD F. GRUNE, M.R.C.S.—This little pamphlet, which does not appear to be on sale, is stated by its author to have been written with a view "to disseminate the most recent of opinions of those at work on the spot where the diseases are prevalent." Although it has professedly been prepared for the benefit of members of the medical profession as well as for ship captains and others who may be called upon unexpectedly to deal with tropical fevers when skilled advice or assistance is not available, it appears to us that the work is more suited for the latter class than for the former. Perusal of the pamphlet, however, may stimulate some readers to seek further information in the recognised text-books on the subject. Much of the advice given may be regarded as sound and sensible, but we fear some may raise objection to the statement that "in tropical countries it is most important constantly to smoke cigars, and ladies should not hesitate to smoke cigarettes," to keep the mosquito at bay. We were under the impression that there was now a general agreement in the scientific world to designate the transmitter of yellow fever as the "Stegomyia calopus," but in this work the author calls it sometimes the "Culex fasciolata"; at other times the "Stegomaier fasciolata" or the "Stegomayer mosquito." Whether the work is intended for medical or non-medical readers care should be taken that the scientific terms are given correctly.

*Saunders' Question-Compends. No. 1: Essentials of Physiology.* Prepared especially for Students of Medicine. By SIDNEY P. BUDGETT, M.D., Washington. Third edition. Revised by HAVEN EMERSON, A.M., M.D., Demonstrator of Physiology in Columbia University, New York. Arranged with Questions following each Chapter. Illustrated (Figs. 27). London and Philadelphia: W. B. Saunders Company. 1909. Pp. 250. Price 4*s.* net.—These abbreviated lecture notes are intended for students to read with a text-book and not as a substitute for a larger work, which "Compends" often pretend to be, but are not. Histology and reproduction are practically omitted, while the notes on the senses, except the eye, are very condensed. The diagrams of tracts and connexions in the central nervous system are useful. The text runs on pleasantly, and so far as it goes it gives a straightforward account of the subjects with which it deals, but the information given would not meet the requirements of the higher examinations in this country. The book is, however, suitable for a rapid *coup d'œil* to refresh the memory. Names of famous experiments and their authors and dates of great discoveries are strikingly absent, as are descriptions of methods. The words "kymograph" and "sphygmograph" do not find a place in the index, which is copious. Globulicidal is given correctly in the index, but as "globucidal" in the text. On p. 48 it would be more correct to read "ventricles" than "ventricle." The weakest part of the work is that on digestion. Lipase is not mentioned as such, and the text is still in the "amphopeptone" stage. Enterokinase, erepsin, gastrin, secretin, and hormones are conspicuous by their absence. A suggestive feature is the list of questions—"Why does serum remain liquid at 0° C."? Should distilled water not be injected into the blood-vessels? Is the respiratory quotient of a herbivorous animal modified by starvation? Many of the questions are ingenious, and framed to test the student's knowledge of the text.

*Self and the Other.* By VICTORIA CROSS. London: T. Werner Laurie. Pp. 303. Price 6*s.*—The book can be recommended only to those who like sensationalism, wild improbabilities, and medical absurdities. The hero is attacked by "congestion of the lungs" while living in a Civil Service college, and is devotedly nursed by a young Hindoo lady who is studying medicine at a neighbouring college. She looks after him for a fortnight and feeds him on curry. Naturally they fall in love with each other; they go to Constantinople together; the plague breaks out and the Hindoo lady does wonders in nursing the sick. Finally, she is attacked by what we suppose Miss Cross means to be plague, but her description of the disease reads like an account of the symptoms of cholera. She dies, and over her body the hero cuts his throat with a razor, but while "a flood of hot blood streamed down and over her breast and neck" he does not die, although in addition we are informed on p. 290 that he had plague and "brain fever." A note, presumably by the publisher, on the loose cover of this novel informs us that "It is impossible to give a description of this book—the greatest thing Victoria Cross has done," so we shall not make further attempt.

## JOURNALS AND MAGAZINES.

*Annals of Tropical Medicine and Parasitology.* Vol. IV., No. 3. Dec. 20th, 1910. Liverpool: University Press. London: Archibald Constable & Co. Illustrated. Pp. 116. Price 7*s.* 6*d.* net.—The last number of the *Annals of Tropical Medicine and*

*Parasitology* contains the following contributions: (1) Some Enumerative Studies on Malarial Fever, by Major Ronald Ross and David Thomson; (2) A case of Blackwater Fever followed by a Peculiar Relapse without Hæmoglobinuria or Detectible Plasmodia, by the same authors and G. C. E. Simpson; (3) On Hæmoglobin Metabolism in Malarial Fever, by G. C. E. Simpson; (4) Some Observations on a case of Sleeping Sickness, Coagulation Time of Blood, Albumoses, Choline, Cerebral Sections, by Vishnu T. Korke; (5) Some Observations on Malaria in Relation to Splenic Enlargement and the Treatment of the Crescentic Stage, by N. F. Surveyor; (6) On the Peculiar Morphology of a Trypanosome from a Case of Sleeping Sickness and the Possibility of its being a New Species, by J. W. W. Stephens and H. B. Fantham; (7) on the Pathogenicity of a Trypanosome (T. rhodesiense, Stephens and Fantham) from a Case of Sleeping Sickness contracted in Rhodesia, by Warrington Yorke; (8) on Three New Species of the Genus Glossina, together with a description of the Hitherto Unknown Male of Glossina grossa (Bigot), by Robert Newstead; and (9) Descriptions of a New Genus and Three New Species of Anopheline Mosquitoes, by Robert Newstead and H. F. Carter. Of these, Nos. 1, 3, and 6 are reprinted from the Proceedings of the Royal Society, but are not the papers referred to in an annotation in THE LANCET of Jan. 21st, 1911, p. 182. 1. In this paper some observations upon the number of parasites present in relation to the various "pathological and therapeutical reactions" are recorded. The details of 33 cases are given at the end of the paper. The authors have come to the conclusion that there is a very decided correlation between the number of asexual plasmodia found in the blood and the fever; that as a rule no fever exists unless the asexual forms exceed some hundreds per cubic millimetre; that the asexual forms do not always disappear between relapses; that considerable and continued doses of quinine reduce the asexual forms by 50 to 80 per cent.; that it is probable that the sexual forms require 8 to 10 days for development; that quinine does not affect the sexual forms when once produced, but "ultimately reduces their numbers by destroying the generating cells"; and the hæmoglobin falls markedly with fever, but rises rapidly with convalescence. 3. Dr. Simpson comes to the interesting conclusion that "the main excretory channel for the pigment portion of the blood is the alimentary tract," and that urinary urobilin represents only a small overflow from this source. He considers that the elimination of urobilin is chiefly in the fæces. His method of extracting the urobilin from the fæces was by repeated shaking with large amounts of water acidulated with dilute sulphuric acid, and exposing the filtrates to daylight for some time. There appear to be so many sources of error possible here that we are inclined to agree with Dr. Simpson when he says "the figures obtained may later require revision," although his observations seem to show that his general conclusion is correct. 5. Dr. Surveyor records a series of observations made during 1908–10 when the city of Bombay was highly infected with malaria. Several cases were in a moribund state, and "the blood was found to contain typical rings and crescents in large numbers." It was, however, noticed that in spite of severe infection many cases had no fever, and splenic enlargement was absent. His observations with regard to temperature do not appear to agree with those of Major Ross and Dr. Thomson in (1), but it is to be noted that a number of his cases were of the malignant tertian type. His records of the results of treatment with picric acid and with quinine, of cases in which crescents were present, showed greatly in favour of picric acid. 6. Dr. Stephens and Dr. Fantham describe a trypanosome similar in its morphological characters to T. gambiense, except that among the "stout or stumpy" forms some have the nucleus at the posterior or non-flagellar end. This character seems fairly constant. A striking fact with regard to this strain of trypanosomes is that there is considerable evidence against the possibility of the patient from which it was obtained having been infected through Glossina palpalis. Dr. Warrington Yorke (7) shows that this strain is more virulent to rats, monkeys, mice, guinea-pigs, rabbits, and goats than T. gambiense. It seems that the view that we have in T. rhodesiense (as Dr. Stephens and Dr. Fantham propose to name this form) a new species is well founded.

*The Archives of Internal Medicine.* Vol. VI., No. 5. Nov. 15th, 1910. Chicago: American Medical Association. Subscription price, $4.00 per annum; single copies, 50 cents. —The contents of this number are: 1. The Use of Pure Lipoids and Alcoholic Extracts with Active and Inactive Serum in the Complement Fixation Tests for Syphilis, by Thomas MacRae, A. B. Eisenberg, and Homer F. Swift. This paper includes a comparative study of the effects of using ethereal extracts and alcoholic extracts as antigens. It is stated that the Noguchi method, using active serum, gives the most sensitive reaction in syphilis, the Wassermann and the Noguchi inactive methods standing in the order named. 2. The Wassermann Reaction in the Pathology, Diagnosis, and Treatment of Syphilis, by Richard M. Pearce. A valuable summary is given of the Wassermann reaction and of its practical uses, together with an extensive bibliography. 3. Peculiar Elongated and Sickle-shaped Red Blood Corpuscles in a case of Severe Anæmia, by James B. Herrick. Details are given of a case with very unusual forms of erythrocytes, which are well shown in a plate appended to the paper. 4. The Elimination of Bacteria from the Blood through the Wall of the Intestine, by Alfred F. Hess. Dr. Hess records experiments which demonstrate that bacteria are excreted from the blood, not only by way of the liver through the bile and by the kidneys through the urine, but also to a less extent directly through the intestinal wall. The organism used in these experiments was bacillus prodigiosus. 5. Experimental Lung Anthracosis, by Lewis Sayre Mace. Some experiments are described with talc injected into the peritoneal cavity of guinea-pigs, to test the correctness of the intestinal origin of anthracosis. 6. The Induction of Pancreatic Activity by the Removal of the Adrenals, by J. E. Sweet and R. Pemberton. 7. A Case of Fatal Sodium Chloride Poisoning, by Harlow Brooks. 8. An Experimental Study of the Resistance to Compression of the Arterial Wall, by Theodore C. Janeway and Edwards A. Park. These authors find that the arterial wall offers definite resistance to compression; that in infancy and childhood, and in adults with normal arteries and a normal range of blood pressure, the resistance of the arterial wall is practically negligible. Atheroma is without appreciable effect on the compressibility, while calcification of the arterial wall increases only moderately its resistance to compression. They suggest that the only factor capable of introducing an error of marked importance into the clinical estimation of blood pressure is the state of contraction of its walls, and they insist that the point of return of the pulse after obliteration should always be the criterion of systolic blood pressure. 9. Cutaneous Tests with Corn Extracts in Pellagrins. The results are given of some experiments to determine whether patients suffering from pellagra showed any hypersensitiveness to extracts from samples of good or spoiled corn (maize). These were negative in all cases.

*Jahreskurse für Ärztliche Fortbildung.* (*Annual Post-graduate Review.*) Munich: Lehmann. Price 16 marks per annum.—The January part is occupied with general physiology and pathology. Professor Johannes Müller deals in the most interesting manner with the intricate problems of the activity of the heart. In the first place the cardiac

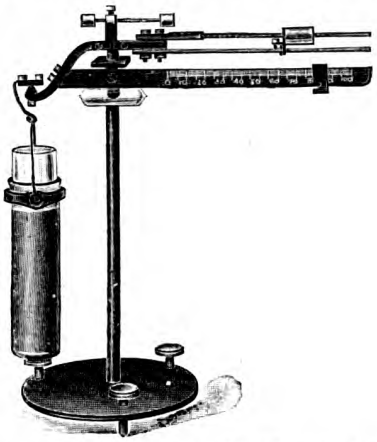
automatism is established on the grounds of numerous experiments. These for the hearts of warm-blooded animals have been made possible by Martin's discovery, that such a heart will go on beating like that of a reptile if only the circulation in the coronary vessels be kept up by injecting an artificial serum into the root of the aorta. Whether any internal glandular secretion is necessary for the maintenance of the cardiac activity is held to be an open question. The region of the roots of the great veins is regarded as the origin of the automatic impulse. The refractory phase, the "all or nothing" law of response to stimuli, and the nervous or muscular origin of the automatism, are carefully discussed. The influence of physical and chemical conditions on the activity of the heart is described under the following heads—viz., temperature variations, oxygen, inorganic salts, and grape sugar. Professor Lubarsch follows with an article on pathology, which is for the most part concerned with the heart. The anatomy, development, and structure of the auriculo-ventricular bundle are shortly described as an introduction to the discussion of the rôle of this structure in relation to disease. In many conditions—e.g., rheumatic carditis and fatty degeneration—the bundle is specially affected by the pathological process. It is regarded as playing a most important part in the conduction of the activity impulse from one part of the heart to another, bridging over, as it does, the fibrous septa which intervene between the auricles and ventricles. This view of its function is of particular interest in connexion with the facts of its relation to cases of the Adams-Stokes syndrome, which is due to the different parts of the heart not acting in harmony. Many cases of sudden heart failure are regarded as the result of disease of this auriculo-ventricular bundle. A few pages are given to the complex and bewildering facts concerning what are called the "chromophile tissues." These, named from their reaction to chromium salts, include the medullary part of the suprarenals, the carotid "gland," and parts of the sympathetic nervous system. Calcium metabolism is in some very close way connected with these structures. Animals deprived of their suprarenals develop a condition like that of rickets or osteomalacia. Further, the excessive administration of adrenal extract causes diabetes in animals. It is considered that there exists a marked antagonism between the functions of the "chromophile tissues" and that of the pancreas. The relation of the pancreas with diabetes is reviewed, and the theory which relates it to the islands of Langerhans is upheld as the result of recent research, especially that of Wechselbaum, who has collected 183 cases and subjected them to careful microscopical examination. The value of Wassermann's reaction in pathology is referred to, as it serves to clear up the nature of many a doubtful post-mortem finding. The reaction is given as well in the dead blood as in the living.

# New Inventions.

## SPECIFIC GRAVITY APPARATUS.

A DESCRIPTION of a new instrument for the determination of the specific gravities of different liquids will, I believe, be appreciated by the members of the medical profession. With the existing instruments (more especially represented by the urinometer) many difficulties and errors tend to make what should be a very simple operation one which is continually doubtful as to obtaining a perfect result. First and foremost is, of course, the expansion of the glass bulb of the instrument by an increase in the temperature. To such an extent does this occur that the variation from a hot to a cold day will produce a very appreciable difference in the result. Again, the annoyance caused by the instrument "climbing the tube" is very real. I refer to the tendency of the urinometer to be attracted to the side of the vessel containing the urine, and to be pulled up the side by capillary attraction.

The difficulty, again, of reading the scale from the under surface of the liquid when the urine is turbid is one which is both most annoying and frequent. Again, in examining candidates for life assurance every medical man must at some time or other have appreciated the difficulty of obtaining sufficient urine for the purpose. The assurance companies lay a special stress on the point that the urine should be passed in the presence of the medical examiner, but in very many cases (owing mostly to nervousness on the part of the candidate) the quantity of urine at the disposal of the examiner is entirely inadequate for the purpose. It is believed that the instrument illustrated will meet all these objections. As will be noticed, it partakes of the form of a small steelyard, fitted with a very sensitive spirit



level. The tube containing the liquid to be examined is suspended from the short arm of the instrument and the weights on the long arm are moved to the right or left, as may be necessary, until the bubble of the spirit level occupies a central position. The tube containing the liquid holds approximately 150 drops, and, of course, may be used for urine, milk, or any other liquid. The upper scale is graduated to divisions of 100, and the lower scale to tens and units, and in addition a small vernier on the rider enables the reading to be carried to a further figure, thus allowing the calculation to be made to four decimal places—e.g., 1·0607. The instrument, as at present made, is constructed with tempered steel knife edges, though, of course, agate bearings may if preferred be substituted. A range may be obtained of from 0·0001 to 2 with the single instrument, and this, I believe, will be admitted to be a large scope for an instrument which measures only 6 inches in length.

Such a method, exact in its results, easy to calculate, and quick in determination, I venture to hope will prove of value to the medical profession generally. Any inquiries regarding the instrument may be made to Mr. W. Martindale, 10, New Cavendish-street, where the instrument may be seen.

Fleet, Hants. C. BUTLER SAVORY, M.D., M.Ch.Edin.

## A TUBULAR MOUTH PROP.

THE importance of a good air-way and the advantages generally of the use of a mouth prop in certain cases have been frequently pointed out by Dr. F. W. Hewitt and others.

The advantages of a tubular prop over a solid were first pointed out by Dr. W. McCardie. For the last three years I have been using a tubular mouth prop which has given me much satisfaction in cases in which the air-way required improving. It is shown in the illustration, and is made for me by Messrs. G. Barth and Co., of Poland-street, W. One end is much smaller than the other, and if the mouth simply requires keeping open or the lower jaw to be pushed forward this smaller end is inserted. This is easily done, as the mouth has to be opened to a small extent only, and even if the patient is not fully under the use of a gag is hardly ever required, as is more often necessary if the mouth has to be opened wider. In edentulous cases the tendency is to blow out a mouth

prop, not to suck it in; therefore the larger end is inserted in these cases, and it remains between the gums and lips, and is not blown out. If an "artificial air-way" is required to conduct the air behind the tongue, the advantages of which in certain cases have been pointed out by Dr. Hewitt, a perfectly efficient one can be made in a moment by pulling a stout piece of indiarubber tubing over the smaller end as shown by the dotted lines in the illustration. There is an advantage in being able to alter the length of the tubing to suit the depth of the mouth, and I carry three lengths with me. The tubing must be of a fairly rigid kind, or it may be pressed flat against the hard palate. Though the mouth is not unduly opened the air-way is of sufficient size. There is a hole in the larger end to tie it to a wooden wedge or other prop outside the mouth. I have found a tubular prop useful even in the case of small children with much blocked post-nasal cavities, and Messrs. Barth and Co. make these props in three sizes. Amongst other uses of a tubular mouth prop, it is occasionally an advantage to pass the metal mouth tube of a Junker's apparatus through it and allow air to enter the mouth, and if the Junker mouth-tube is forgotten or perhaps dirtied the indiarubber tube can safely be passed between the teeth through the tubular prop.

H. M. PAGE, F.R.C.S. Eng.,
South Kensington, S.W. Anæsthetist to Guy's Hospital, &c.

## A NEW NASAL BATH.

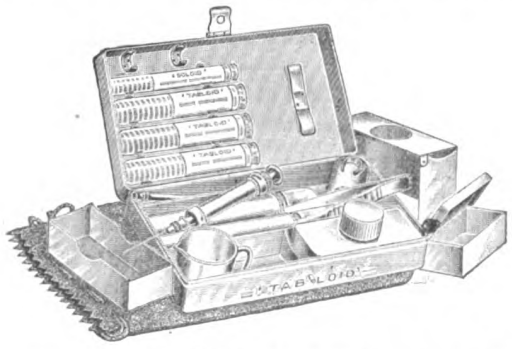
THERE is much divergence of opinion as to the best means of cleansing the nasal cavities, some employing douches, some sprays, and some syringes. Each of these methods has its advantages, but for children and others who are none too careful an apparatus brought to my notice by the Nazene Company of Great Marlborough-street, London, W., and designated by them the nasal bath, seems to be well suited.

It is exceedingly simple in construction, is sterilisable, and is very compact. It can be carried in the pocket quite easily. It is not liable to be broken, nor can it do any damage to the delicate nasal mucous membrane, as sometimes occurs with glass and rubber syringes. Its advantages over the latter are that it will never wear out and is much more cleanly. Patients like this bath, and find it very convenient and effectual.

WILLIAM IBBOTSON, M.R.C.S. Eng., L.R.C.P. Lond.
The London Throat Hospital, Great Portland-street, W.

## A "TABLOID" QUININE INJECTION POCKET-CASE.

THE administration of quinine by hypodermic or intramuscular injection instead of by the mouth is a therapeutic measure which of late years has been growing in favour, and in certain conditions it has advantages over the older



and more usual method. Recognising this, Messrs. Burroughs, Wellcome and Co. have sent for our inspection an outfit which comprises everything necessary for making such injections. The "Tabloid" quinine injection pocket-case is an elegant, compact, and complete outfit. Within a nickel-plated metal case, so small as to be easily slipped into the pocket, are contained a 20-minim all-metal syringe, with needles, a supply of "Tabloid" hypodermic quinine bihydrochloride, a pair of forceps, "Soloid" corrosive sublimate for the preparation of the patient's skin, and all the apparatus—including a sterilising cup and tray, a spirit-lamp, and a match-box—required for the sterilisation of the syringe and the quinine solutions. With the aid of this outfit the practitioner can make sure in practically any circumstances that his injections of quinine are given under aseptic conditions, and the pocket-case should prove useful in all countries where malarial affections are prevalent.

## REPORT ON THE WORK OF THE CENTRAL MIDWIVES BOARD FOR THE YEAR ENDED MARCH 31ST, 1910.

DURING the year under review the Board has met 16 times, including four special meetings for the investigation of cases where a local supervising authority had reported a midwife for malpractice, negligence, or misconduct. Sir Francis Champneys was re-elected chairman, but there have been some changes in the constitution of the Board, for Sir George Fordham has resigned the post of honorary treasurer, Mr. J. Ward Cousins has been succeeded in the representation of the Royal College of Surgeons of England by Mr. C. H. Golding-Bird, and Dr. G. E. Herman represents the Incorporated Midwives Institute in the place of Dr. Stanley Atkinson, deceased. The total number of trained midwives on the roll is 17,790, as against 11,419 untrained, but as a large percentage of trained women obtained their certificates without any intention of ever practising, and many others have ceased to practise or are practising in the colonies or in foreign countries, the untrained practising midwives are largely in excess of the trained. The number of penal cases—namely, 53—when compared with the 92 cases of last year, apparently shows a large diminution in the charges of negligence and misconduct, but this diminution is mainly due to the fact that the penal sittings usually held in March were held in April this year, and do not come under review in this report. The penal procedure of the Board as laid down in Rule D has been under consideration. The rule provides that the "secretary or other person appointed by the Board" shall conduct the case against a midwife charged before the Board, after a *primâ-facie* case has been established against her by the local supervising authority. In one or two cases the local supervising authority has claimed to have the conduct of the case, and as this would introduce confusion into the proceedings the Board has passed a resolution disallowing it, and refusing a hearing to the authorities, except when charges having been brought against its officers an answer is to be reasonably expected. The number of cases of ophthalmia neonatorum coming to the notice of the Board in the course of its penal administration has made it apparent that strong efforts are necessary to combat the ignorance and carelessness which so frequently lead to total destruction of the infant's eyesight. The rules on this subject have accordingly been strengthened and a special leaflet dealing with the nature, causes, consequences, and preventive treatment of the disease adapted for the use of midwives has been prepared and circulated. The Board observes with satisfaction that there is a continued improvement in respect of cleanliness, carefulness, and observance of rules amongst midwives.

DONATIONS AND BEQUESTS.—The late Miss Caroline Catherine Williams of Falmouth has, by will, left £6000 to the Royal Cornwall Infirmary, Truro.—An anonymous gift of £5000 has been made to the Cancer Hospital, Brompton, S.W.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN IN DEVONSHIRE.—At the last meeting of the Devon education committee it was proposed to increase the salary of each medical inspector by £175 per annum, in lieu of allowing any travelling expenses. They will be required to perform some additional duties, amongst these being to deliver addresses on hygiene to the children and lantern lectures for the parents.

# THE LANCET.

*LONDON: SATURDAY, FEBRUARY 25, 1911.*


## The Increase in Crime.

THE volume of Criminal Statistics for 1909, which has recently been issued by the Home Office, has excited a good deal of comment in the public press, not only on account of the evidence which it affords of an upward tendency in the movement of crime in this country of recent years, but also on account of the explanation of that tendency which the editor of the statistics, Mr. H. B. SIMPSON, has given in his introduction to the volume. Mr. SIMPSON, we learn from the prefatory note of Sir EDWARD TROUP, expresses in this introduction merely his personal opinion and not the official views of the department, but naturally the conclusions which he formulates must carry much weight, as being based on long experience and close study of criminal questions. Briefly stated, the main contentions advanced by Mr. SIMPSON are that there has been a steady increase of criminality during the last ten years, which is more marked than at any previous periods for which such statistics are available; that this increase must be due to the operation during these years of some cause favourable to crime, which before then did not exist at all or did not exercise sufficient influence to affect the figures; and finally, that this cause is a change in public sentiment with regard to crime, a change which, to judge from the extreme form in which it sometimes finds expression, is tending to substitute a maudlin sympathy with evil-doers for the natural and healthy reaction of a vigorous community against its anti-social elements. Of course, in any such statement of the question it is necessary to distinguish very carefully between the facts and their interpretation; and this is no easy matter, for in the complex problem of crime not only are the facts very hard to arrive at, but it is also nearly impossible to state them without some involuntary admixture of interpretative tendency. Take this very statement that crime is increasing; what it really means is that there is an increase in the number of persons tried for indictable offences or an increase in the number of such offences reported to the police; but petty larceny and murder are both indictable offences, so that a considerable decrease in the frequency of murder coincident with a more considerable increase in the frequency of petty larceny would appear by this test as an increase of criminality. And Mr. SIMPSON tells us that in fact the recent upward movement of crime is really of this relatively reassuring nature; it is an increase confined to offences of acquisitiveness, while offences of violence, on the contrary, have notably and steadily declined, and not only the offences of a gravely homicidal character, but also assaults.

At the worst, then, the increase of crime would indicate a growth of dishonesty; and before we admit even that interpretation, we have to take note of several qualifying circumstances. In 1909, for instance, pauperism was increasing, drunkenness was decreasing, and the percentage of persons fined who went to prison in default of payment was higher than for many years—all these being phenomena usually indicative of bad economic conditions amongst the class of the population from which the petty offenders are recruited. And over a long stretch of years bad economic conditions have been found to correspond roughly with an increase in crimes of acquisitiveness. Moreover, it must not be forgotten that increased density of population in itself tends to multiply the temptations and the opportunities of dishonesty, and, further, that many modern improvements and innovations create new occasions for crimes of this sort; it is notorious, for instance, that the robbing of penny-in-the-slot gas-meters has become quite an active form of criminal industry in the last few years. When due account is taken of such considerations as these, it will be seen that the increase of crime recorded of late years need not imply any real weakening of the moral fibre in the community. And if, as seems probable, these oscillations in the amount of crimes of acquisitiveness are largely dependent on economic influences, that fact in itself would tend to show that the more lenient attitude of public sentiment towards the criminal, however absurd it may be in some individual instances, is not without justification in the main. It expresses the recognition by the community of its responsibility for the acts of the evil-doer, that, in short, society has the criminals that it deserves. A community which recognises that economic conditions of its own creation, on the one hand, and, on the other hand, morally and mentally feeble adolescents for whose control and segregation it fails to provide, are important factors in its criminal problem, will naturally lean towards tolerance in penal methods. And it will be the more prone to this attitude in an age when there is a general softening of manners and a decline in the spirit of violence and brutality. The figures presented by Mr. SIMPSON show that this improvement in manners is exercising a considerable influence on the anti-social classes and is causing a steady decline in offences of violence. It is only natural, therefore, to find that it is also reacting on the attitude of society towards the criminal and is making that attitude milder and more tolerant. And though this change in public sentiment is attended with some risks, risks on which Mr. SIMPSON rightly and forcibly insists, it must not be forgotten that it is to it that we largely owe the possibility of applying to the treatment of the criminal these humane and scientific methods the initiation of which in this country has been the most notable advance in penal reform in modern days.

The proposal to treat adolescent offenders by reformatory measures, as is done to-day under the Borstal system, would have been scouted as sentimental and impracticable in times when it was confidently believed that crime could be eradicated by laws of Draconian harshness and when legal luminaries could express their intention of "putting down suicide" by penal methods. Of course, there is a danger that the sentimentalists, whose voice is always loud in the land, may exploit this public feeling so as to hinder

the full application and development of these reformatory methods by weakening the element of firmness and discipline which is essential to their success. It is easy to see evidences of this tendency in the outcry against the system of preventive detention for habitual criminals, in the slowness to utilise to the full the provisions of the Prevention of Crime Act for young offenders, and in the hysterical criticisms to which prison administration is so frequently subjected in the public press. Every protest against the emotionalism which inspires these regrettable exhibitions of flabby sentiment is rendering, we think, a genuine service to the progressive spirit on which they are a morbid outgrowth. And this is, in fact, the lesson which it is most necessary to teach at the present moment in the history of penal reform. It is not against sentimentalism that a warning is needed, but against what is the common root both of sentimentalism and of unreasoning severity—namely, the temper of ignorant emotionalism, the temper which will not let action wait on knowledge, the temper which is so eager to treat symptoms that it can never reach to causes, the temper which only sees the immediate result of action and sees that ill. This spirit, of course, works mischief in every branch of social policy, but hardly anywhere has its influence been more pernicious than in regard to the treatment of crime.

## An Act of Homage to a Medical Martyr.

IN compliance with an order issued by the President of the Mexican Republic a marble memorial stone was uncovered in the National Bacteriological Institute of the City of Mexico by the State Secretary of Public Instruction and the Fine Arts on June 24th, 1910, as "an act of homage" to the memory of Dr. HOWARD TAYLOR RICKETTS, who died on May 3rd, having fallen a victim to typhus fever while carrying out important scientific investigations into that disease in the city. As a further recognition of the benefits which Dr. RICKETTS'S work had conferred upon the Mexican nation the President commanded the publication of a commemorative volume in which is given a portrait of the deceased, together with an account of the ceremony and the orations delivered by certain distinguished persons when the memorial stone was uncovered. The volume, which is printed in Spanish, reproduces five papers written by Dr. RICKETTS, mostly in collaboration with his countryman Dr. RUSSELL M. WILDER, on the subject of Mexican typhus, locally known as "tabardillo," four of which have already appeared in the *Journal of the American Medical Association*. By further order of the President the volume has been sent, not only to the Mexican scientific institutions, but also to the principal universities, scientific societies, libraries, and medical publications of those countries which are friendly to Mexico. Dr. RICKETTS at the time of his death was 39 years of age; he had graduated at the University of Chicago in 1894. After holding a number of hospital appointments he spent a considerable time in post-graduate study in Paris, Berlin, and Vienna. In 1903 he was appointed an assistant professor in the University of Chicago, and shortly before his death he accepted the offer of the chair of pathology in the University of Pennsylvania. In 1906 he made an investigation into the disease known as the spotted fever of the Rocky Mountains, and showed himself to be an investigator of the first rank. Subsequently, his attention having been directed to the close clinical resemblance between this spotted fever and Mexican typhus, he proceeded to Mexico to conduct his researches on the spot, utilising with the consent of the authorities the clinical resources of the hospitals, as well as the scientific facilities of the laboratories of the bacteriological institute. Anyone who has had the opportunity of examining month by month the statistical reports of the city of Mexico must have been struck with the amount of "exanthematic typhus" recorded there year after year. To prevent the suffering and loss of life occasioned by this malady Dr. RICKETTS undertook his investigations. His observations demonstrated that the disease is not infectious in the ordinary sense, but that it is conveyed by the bites of the body louse (Pediculus vestimenti). This fact alone points out how the infection may easily be prevented, and must prove of the greatest service to the Mexican people. Shortly before his death Dr. RICKETTS announced that he had found in the blood of typhus patients a bacillus which he believed to be the specific microbe of the disease. It is not certain whether the typhus fever of Mexico is the same as that which is found in the Old World. Observations made by Dr. CHARLES NICOLLE in Tunis gave somewhat different results to those obtained by Dr. RICKETTS, but the mode of transmission is precisely the same, and this has been further established by the work of Dr. JOHN F. ANDERSON and Dr. JOSEPH GOLDBERGER of the United States Public Health Service. We are not here concerned at present with the claims of the different investigators to priority in the discovery of the mode in which typhus fever is spread. It is enough for us that Dr. RICKETTS demonstrated the mode for the Mexican form of the disease, and for this alone he has earned the lasting gratitude of that nation. His death adds one more name to the long list of medical heroes who have given up their lives in the search for knowledge by which their fellow men were to be benefited.

## The London County Council and the Inspection and Treatment of School Children.

EARLY in December, 1910, the annual report for 1909 of the chief medical officer of the Board of Education was presented to Parliament, and in our review of it we stated that it was a document of great interest and extremely cheerful tendency, but we noted at the same time that Sir GEORGE NEWMAN had been compelled to point out that as far as the medical inspection of children was concerned the County of London lagged behind the rest of the kingdom. The complicated difficulties under which the London County Council has found itself in the matter of education are, many of them, well known to all our readers, and there is no reason to doubt that the Council has in many directions made vigorous effort to deal with these difficulties. Mr. R. BLAIR, the education officer, is struggling

manfully with an elaborate system of organisation the whole blessings of which are not yet obvious to those who are considering education from a general point of view, while the facts are indisputable both that too large a percentage of the children in London are not systematically inspected and that too large a percentage of those inspected escape subsequent treatment. The words of the chief medical officer of the Board of Education, in the report to which we have alluded, conveyed a distinct warning that the London County Council, in the matter of its educational functions, would be required to mend its ways, and a good many of our readers must by this time have asked themselves when the necessary reforms would begin to take place. Medical inspection of school children has now been an integral part of the public health administration of the country for some two years, having become a statutory duty upon local education authorities as far back as the passing of the Act of 1907. There is nothing unreasonable in saying that there ought by this time to have been worked out for the metropolis by the London County Council an adequate scheme of medical inspection, and some system of consequent treatment.

We are bringing these conclusions to public notice being perfectly aware that the Council itself does not consider that the treatment of school children has been properly dealt with. At the meeting on Feb. 14th there were open manifestations of the differences of opinion which are known to exist among the members of the Council as to the course to be adopted. At this meeting among the proposals for increasing the salaries of the principal officers was one to raise the salary of Mr. BLAIR, the education officer, and one of the reasons given by the General Purposes Committee for its recommendation to pay this emolument to one of its servants was the growth of that part of the education service which might be summed up in the phrase, "the care of the child." Medical men will be the first among ratepayers to support the provision of adequate sums in respect of the education of the children of London, but they will ask themselves anxiously whether "the care of the child" in this connexion means his medical welfare, and if so whether the education officer was appointed with any recommendations for medical knowledge which he is now expected to display in return for an enhanced salary. It now seems clear that under one course of procedure the education officer may be invited to supervise in some way the inspection and treatment of the school children under the care of the Council, inasmuch as the existing condition of things is admittedly unsatisfactory; and that the situation was thus interpreted was proved by the suggestion of a member of the Council at the meeting on Feb. 14th, that as a result of deliberations now proceeding in committee Mr. BLAIR might be relieved of work of this nature, inasmuch as it might be coördinated under the Public Health Service. The remark went to the root of the matter. Three courses lie before the Council and are quite definite. It can leave matters as they are; it can invite the education officer to supervise the medical inspection and treatment of school children; or it can follow the course which has been successfully taken by the majority of the educational authorities in the kingdom and place the inspection of school children in the department of the medical officer of health. Over a year ago, out of 314 instances where school medical officers had been recognised by local education areas, the medical officer of health had been selected to act as that officer in 230 cases, and the practical coöperation between the medical officer of health and the education medical officer has proved generally—indeed, as far as we know, universally—to result in good work. With regard to leaving matters as they are, the Board of Education seems likely to have a good deal to say against the adoption by the London County Council of such a course, and it is known that the Council does not lean to this apathy. The attitude of the Government Department towards the London County Council was for a long time one of consideration. The difficulties to be encountered in organisation were recognised, and it was not until it became practically public property that the London County Council was unable to administer satisfactorily one of the statutory duties of a local education authority that the Board of Education, as its duty was, began to insist upon reforms being undertaken. We feel certain that the London County Council, against the virtue of whose intentions we are alleging nothing, has come to the conclusion to make a move in one of the other two directions that lie before it. It will construct for the medical inspection and treatment of school children a scheme under the supervision of the education officer, or it will make such inspection a branch of the general health administration of the county. A report from the Children's Care Subcommittee has been, or shortly will be, laid before the Education Committee of the Council recommending that the work, at present under the direction of the medical officer for education purposes, Dr. J. KERR, should be placed under the supervision of Mr. BLAIR, and it remains to be seen how the Council will act thereon

To place the medical officer of the London County Council for education purposes directly under a lay authority is to run great risks that the Act of 1907 will not be administered in accordance with the purposes of legislation. The medical inspection of school children is a medical affair as well as an educational affair—this the most enthusiastic educationist must admit—and while it is as closely as possible connected with sanitary administration, it is only loosely allied to general pedagogy. We know perfectly well that in earlier days there was no universal adherence among medical men to this view; the matter is obviously one of opinion, but opinion has become now, we think, unanimous. Moreover, those who lay stress upon the medical side of medical inspection are in the advantageous position of pointing to the existing and satisfactory organisation of the sanitation of the country as affording machinery for the actual work; while those who would separate the inspection of school children from the public health service have to devise some other scheme. The subcommittee of the Education Committee at the present moment is apparently taking the view that its medical officer for education purposes is a more natural ally of its education officer than of the chief medical officer to the Council. To us it seems inevitable that sooner or later the inspection of school children will become a

department of the general health service, whose finished and comparatively ancient organisation is quite able to expand in the direction of the necessary duties. There may be an attempt to keep the two things apart, and such an attempt may be successful for a time, but, rash as it is usually to prophesy, it is fairly certain that in the end there will be a union. We confess that we wish the Council would ratify that union at once.

# Annotations.

"Ne quid nimis."

## THE PATHOLOGY OF THE ONLY CHILD.

THE vagaries and caprices of the only child are almost proverbial, but so far they have attracted but little notice in text-books on pædiatrics, though they are well known to most experienced practitioners. Dr. Joseph K. Friedjung of Vienna contributes an interesting study of this subject to the *Wiener Medizinische Wochenschrift* of Feb. 4th. He states that practically the only references he has been able to find to it are those by Czerny and Neter, both of whom deal chiefly with the defective development of character which seems to occur in some of these children. Dr. Friedjung bases his observations upon 100 children who were the only offspring of their parents, whom he has studied in his private practice. The cases were not selected but simply taken chronologically. There were 45 boys and 55 girls; 86 of them were between 3 and 11 years of age, 9 between 11 and 15, the remaining 5 being under 2 years. Of the 100 children only 13—viz., 6 boys and 7 girls—could be described as normal; the remaining 87 proved to be neuropathic in organisation in greater or less degree. For comparison Dr. Friedjung studied the nature of 100 children from families with numerous children also casually collected. Of these 69 proved to be normal and only 31 showed neuropathic tendencies. Of the 87 "nervous" only children 18, comprising 7 boys and 11 girls, were severely affected. In general, the girls showed the more marked changes. The manifestations are divided by Dr. Friedjung into general and local. He refers, first, to the mental characteristics of the only child, as described by Neter, especially to his nervousness, lack of self-reliance, precocity, vanity, egotism, and unsociability. One special feature is often extreme timidity, even to the extent of morbid terror. This symptom was present in all but 12 of the 87 children showing abnormal conditions. They were often afraid of dark rooms and of sleeping alone. Occasionally they were nervous of loud noises and of certain animals, though not necessarily of large ones like horses and dogs. In close relation to these morbid fears was the restlessness at night, from various degrees of which up to actual night terrors 49 of these children were found to suffer. Capriciousness and peevishness were complained of spontaneously by the parents of 7 of the boys and 12 of the girls in this series, and on inquiry these characters were found to be present in the majority of the remaining cases. Precocity or too rapid evolution of the intellect was the rule and present in all but 9 of the 87 nervous children, and was also observed in 5 of the 13 normal cases. Thirty-three of the 100 children were brought to Dr. Friedjung for defects in nutrition. Many of them were pale, of weak muscular development, and had but little subcutaneous adipose tissue. In many cases this appeared to be due to severe anorexia, from which 50 of the 87 abnormal children suffered. As many as 37 of them suffered from habitual vomiting and 20 from chronic constipation. Frequency of micturition, apart from cystitis or any abnormality of the urine, was a commonly observed symptom, and enuresis was recorded in 10 boys and 2 girls. Lichen urticatus occurred in 26 boys and 22 girls, and 16 of these were much distressed by the itching produced. Dr. Friedjung is of opinion that diseases with a nervous factor such as pertussis run a more severe course in many of these children, but believes that the supposed severity of many other complaints, as they fall upon only children, is apparent rather than real, being, in fact, an exaggeration on the part of the anxious parents. Dr. Friedjung discusses the causation of the peculiarities he has observed and recorded in his paper. He agrees in the main with Neter's suggestions—viz., that they are due to over-education and to the lack of the influence of brothers and sisters—but he points out that these are not the only factors, since he maintains that the favourite child of large families may show similar peculiarities. His observations are certainly of interest and constitute an addition to our knowledge of the subject which should stimulate further study of the characters of these children.

## HOW TO IMPROVE LONDON'S TRANSPORT.

BEFORE the days of the Bankers' Clearing House we are told that about 40 bankers called individually upon one another, making altogether about 1560 visits in the day. Now the same exchange of business can be accomplished by a single call from each banker at the Clearing House, making altogether 40 visits in the day. Mr. A. W. Gattie proposes to apply the same principles to the handling of goods and parcels and to establish a central goods clearing house in London, where about 100,000 tons of goods could be dealt with in the day with the consequent saving of time and labour that follows good organisation. The necessity for such organisation becomes apparent when we are informed, upon the evidence of facts and figures, that recent increased locomotive power in our railway engines coincides with a decrease in their earning power, and that this is due to the difficulty experienced in transference and handling of goods on account of the badly arranged goods railway stations, and that there are in use in London streets twenty times as many goods vans as are necessary for the work required to be done. In a lecture which Mr. Gattie delivered before the London Chamber of Commerce last July, entitled "How to Improve London's Transport," he outlined the scheme of a goods clearing house. With this report and with the help of an article which appeared in a subsequent number of *The Electrician* some idea can be got of the ambitious scheme which is on foot, and is expected at an estimated cost of £6,000,000 to deal with London's transport and free its streets from 25 per cent. of the total vehicular traffic—viz., that made up of loitering vans and other slow-moving vehicles, thus adding an estimated road space of 33 per cent. of the existing area to the metropolis. The traffic problem will not then seem so pressing. The scheme has a humanitarian and a medical interest, in that its accomplishment will lessen the work of the hospital accident and casualty department, where a large proportion of the serious street injuries dealt with are occasioned by vans and other slow-moving, heavily laden vehicles. The method which it is proposed to adopt is the establishment of a single large depôt or "clearing house," accessible for all railways by underground tunnels, and from the port by means of a tunnel connecting a river wharf with the clearing house. The goods received by rail, road, and river would be sorted for delivery by means of ingenious electrical and mechanical

appliances, and would be distributed over the metropolitan area by a number of motor vehicles. The worst feature of vehicular traffic carrying goods is its lengthy occupation of road space, for standing vehicles form a fixed obstacle to all other traffic, and it is this kind of street difficulty which would at once be removed by the employment of the particular pattern of motor van which it is intended to use to serve the goods clearing house. The van would be provided with a detachable "container" which could be hoisted out of the van into a building by means of a crane, and another container loaded with miscellaneous goods for despatch to various destinations substituted. The double operation with the aid of a suitable crane could be accomplished in about four minutes. Sorting at the clearing house is to be accomplished by means of "belts" or moving platforms fitted with electro-magnetic apparatus which enables them to receive or discharge loads which are deposited beside them on suitable magnetic trays or tables, and by means of an instrument called a controller they are able to do this in a way predetermined by the operator. The result is achieved by the use of reciprocating roller magnets which revolve at the same speed, one set being fixed at the station, the other set being carried by the moving platform. An undertaking of this character and comprehensiveness is one which London might be proud to accomplish. Unlike many private enterprises, this is one which will benefit the public as well as the shareholder, and provide a means of reducing the congestion in our streets at no expense to the ratepayer—a result which everyone will welcome.

## ACUTE SYPHILITIC MENINGITIS.

THE change in view point from which the modern observer regards the relation of syphilis to diseases of the central nervous system is reflected in the general review which Dr. Marcel Miriel gives in the *Gazette des Hôpitaux* of Jan. 7th of the recently differentiated nosological syndrome "acute syphilitic meningitis." The inevitable sequel to the acceptance of syphilitic nervous disease as an infection *viâ* the meninges is the correlation of syphilitic meningitis with other forms of meningitis. For 40 years previous to the important researches of Widal, Sicard, and Ravaut on the cerebro-spinal fluid the reality of acute syphilitic meningitis was questioned by many competent observers; but when in the year 1900 it was conclusively demonstrated that cytological changes in that fluid accompanied meningeal reactions to infective agents, it was felt that a diagnostic criterion had been established by the aid of which the genuineness of acute syphilitic meningitis could be effectively proved. Since that date abundant clinical and pathological evidence has been forthcoming whereby it is easy to-day to furnish a text-book description of a definite form of acute meningitis which is syphilitic in origin, and which can be distinguished from acute tuberculous, or septic, or epidemic cerebro-spinal, or any other variety of the disease. In the great majority of cases acute syphilitic meningitis is preceded by cutaneous manifestations of the infection that are particularly severe. Sometimes there is a definite parallelism between the two, so that the meningeal reaction has been described as a meningeal exanthem. It is during or soon after the appearance of the secondary symptoms that meningeal involvement reveals itself, first of all by the prodromal symptoms of headache and insomnia. The former is continuous, diffused, intractable, and subject to nocturnal exacerbations. Occasionally it is so persistent in its severity as to dominate the clinical picture completely. Insomnia is very common, and ought always to be made a matter for inquiry. At this initial stage there may be little else to attract attention, and even when the syphilitic meningitis is established the paucity of its clinical accompaniments is one of its distinguishing characteristics. Stiffness of the neck is less marked than in other varieties of meningitis. Kernig's sign is common. Convulsions are rare. Palsies are very rare indeed, with the exception of the highly important ocular palsies, notably the third nerve. Fever is by no means frequent; in fact, Dr. Miriel considers it is usually transient and has reported a large number of cases in which it has been awanting. The patient is rarely as affected mentally as in the ordinary forms of meningitis; though suffering from severe headache he will talk lucidly of his illness; he practically never has a meningeal facies. Thus acute syphilitic meningitis is characterised by the restricted nature of its symptomatology, although each and all of the accepted symptoms of meningitis may be detected in any particular case; the moderate type is much more frequently encountered than the advanced. In proportion to the degree of the meningeal implication the comparative mildness of the symptoms, apart from the headache, constitutes an important aid to diagnosis. The cerebro-spinal fluid is almost always clear, free from bacterial infection—some observers have found the treponema in it—and under the microscope reveals an abundant lymphocytosis with occasionally a varying degree of polynuclear leucocytosis. The lymphocytic reaction may be found before any clinical symptoms whatever of meningeal inflammation can be detected, and it may persist after these symptoms vanish. Hence the examination of the fluid is of the utmost significance, for its clear and amicrobic character, coupled with the lymphocytosis, is almost pathognomonic. Treatment by repeated lumbar puncture is often of the greatest value. Dr. Miriel has used intravenous injections of one or even two centigrammes of mercury daily with striking success. He merely mentions "606," the matter being *sub judice*, and says little of serum diagnosis.

## CANNED GOODS AND THE PUBLIC HEALTH.

THE report which Mr. Otto Hehner, analyst for the county of West Sussex, has recently presented to the county council points out the desirability of legislation dealing with the canned goods trade. During last quarter he analysed seven samples of preserved (tinned) lobster and seven samples of preserved (tinned) salmon for the purpose of detecting the quantity of metal that had been dissolved off the surface of the canisters. The following was the result expressed in grains per pound:—Lobster: 1·28, 0·27, 0·12, 4·47, 0·80, 0·51, and 0·09; salmon, 0·46, 0·21, 0·77, 0·24, 0·51, 0·38, and 0·35. These figures show that preserved (tinned) salmon is preferable to lobster, but Mr. Hehner explains that the quantities of tin dissolved in the salmon are comparatively small, probably because the oil in which the salmon is packed to some extent protects the surface. The quantity of contamination increases with the age of the goods, because the acid juices continue to act upon the metal. In course of time, therefore, all such preserved goods as are capable of attacking tin will contain an important quantity of the metal. Such materials are all meats and fruits; not condensed milk or syrup. The fixation of an age limit seems advisable. The date of packing ought to be compulsorily stamped on each can. It would be easy to ascertain when the maximum tolerable quantity, suggested by the Local Government Board at 2 grains of tin per pound, has been reached, but it would vary with the acidity of the material. The suggestion that the date of packing the goods should be clearly indicated on each can is an excellent one, and one which could easily be introduced. Dr. G. S. Buchanan and Dr. S. B. Schryver, on behalf of the Local Government Board, a year or so ago, were not able to gain any decisive evidence that tinned foods caused bodily harm attributable

to tin salts, but it seems a pity that the simple precaution of lining tins with an innocuous varnish is not very generally adopted.

## INFLUENZA AT THE VATICAN.

OUR Roman correspondent writes, under date Feb. 18th :— "Influenza has made a pilgrimage to the Apostolic Palace and has been 'received' by the Holy Father, by Cardinal Rampolla, and by Cardinal Rinaldini. Dr. Petacci, body-physician to his Holiness, was thereafter in prompt attendance, and the Pope, responding to treatment, may now be regarded as convalescent. Exaggerated announcements as to complications, bronchial and other, have been reduced to their proper dimensions by the official press, inspired by Dr. Petacci himself. The postponement of receptions till next week has been *motivé* as a measure of precaution, considering the advanced age of his Holiness, as also the rigour of the season and the danger of infection imported from without. It is from this latter source that the unwelcome visitant has effected admittance, so that until the public health has returned to its normal standard the surveillance imposed at the Vatican on all 'arrivals,' official and non-official, will lose none of its strictness. Meanwhile Cardinal Rampolla's condition causes some anxiety, due to the high temperature and the characteristic pathognomonic signs. Cardinal Rinaldini, too, is not out of danger. For some days confined to bed, he is still feverish enough to require vigilant attendance, as, at no time robust, he has recently betrayed symptoms not conducive to rapid or permanent recovery from infective disease."

## RUPTURE OF THE LARGE INTESTINE DUE TO COMPRESSED AIR.

COMPRESSED air is used commercially for a great number of purposes, including riveting, working small tools, blowing away the filings in rapid lathe work, cleaning engines, &c. It is piped round buildings and applied, like water, through a hose under a pressure of from 40 to 125 pounds per square inch. Its use is much more common in the United States than in this country, and it is not surprising, therefore, that the cases recorded in *Surgery, Gynæcology, and Obstetrics* for January by Dr. Andrews, where this medium has been the cause of several fatal accidents, should be entirely of American origin. Dr. Andrews's case was that of a man admitted nearly moribund, cyanotic, gasping for breath, enormously distended. His neck and chest were emphysematous; the abdomen was globular, tensely inflated, and free air could be felt crackling in both groins. The thorax was rigidly set, respirations were 46 to 52, and the pulse was small, hard, 114. The history was that he was using the air-hose to blow the sawdust off his clothes, and that some of his companions, in jest, caught the hose and pushed it towards his nates. The hose had no nozzle; it was an ordinary flexible $\frac{3}{8}$th inch tube, with a pressure of 60–65 pounds. The tube did not get within an inch of his trousers; nevertheless, with the pressure so high, the column of air several inches in advance of the tube was sufficient to force the anal sphincter as if it had been a solid body. With this history to guide them the surgeons attempted to relieve the pressure by passing a rectal tube. This, however, gave no relief, and accordingly the abdomen was opened, a puncture wound being made in the middle line in front. There was an immediate rush of gas, the abdomen was allowed to empty itself gradually, and the condition of the patient improved so much that an exploratory operation was considered safe. Five hours, therefore, after the accident the abdomen was opened. It was then found that the peritoneum was soiled with fæces, and that the sigmoid flexure was ruptured along its convex border for nearly six inches. The tear was mainly in the serous, muscular, and fibrous coats, the underlying mucous membrane bulged and was torn in three places, showing that it had herniated through the tear in the fibrous layer, ruptured, and then retracted. The ruptured portion of the sigmoid was excised, the ends inverted, and a lateral anastomosis performed. The patient was treated by continuous saline irrigation, and gauze drains were inserted for a few days. Eventually he recovered. Since his attention was thus drawn to the condition, Dr. Andrews has been able to collect details of 15 more cases in the practice of American surgeons, and several useful conclusions can be drawn from them. The air-hose is not dangerous in itself, turned on most parts of the body it produces a stinging effect only. The accidents seem almost wholly to have been due to other employees turning the hose, as a practical joke, towards the victim's anal region. It need not be applied directly to the anus, and the fact that the victim is wearing his clothes is no protection. The nates form a hollow cone of which the anus is the apex, and compressed air expanding in this cone forces the anus without direct application. The bursting-point of the large intestine is probably from 6 to 10 pounds when *in situ*. The rupture is most common in the sigmoid, probably because it is the first unsupported portion of large intestine reached, and also because the rushing air is confined momentarily in the loop. Rupture is, however, sometimes multiple; the splenic flexure has been found the first portion torn, and in one remarkable case that died the sero-muscular coat from the rectum to the cæcum was split, but the mucous membrane though herniating through had managed to remain intact. With regard to the mortality, this, as might have been expected, is at present very high. Of the 16 cases recorded, 13 died. Of these, 7 were submitted to an exploratory laparotomy, with 4 deaths. On the other hand, of the 9 not operated on, all died. None of the cases appear to have been diagnosed apart from the history. Several were treated as "colic" till the details were extracted. It is probable, however, that in future, now that the characteristic features of the condition have been emphasised, diagnosis will be more accurate, and operation, therefore, more rapidly decided upon.

## THE LIGHTING OF SCHOOLS.

AT a meeting of the Illuminating Engineering Society held on Feb. 16th a discussion on the lighting of schools was opened by Dr. James Kerr, medical officer (education) to the London County Council, and Mr. N. Bishop Harman, oculist to the London County Council Education Department. The former confined himself to daylight illumination and described methods for obtaining measurements of sufficient accuracy to ensure good illumination in the worst lit parts of the rooms. He dwelt upon such details as the relation of window area to floor space, the colour of the walls, the disposition of the desks, the elements concerned in retinal and mental fatigue, and so on. Mr. Harman dealt with artificial lighting. He described his experience in visiting various London schools, and emphasised the need for properly designed shades so as to screen the eyes and throw the light where it was wanted, and distribute the light uniformly over the desks and the blackboard. He showed by means of diagrams how different arrangements of lights enabled this to be done, and how glare in the eyes of the children and inconvenient shadows could best be avoided. The President, Professor S. P. Thompson, in his opening remarks, pointed out the good work that was being done by the Illuminating Engineering Society in bringing together the lighting engineer, the architect, and the medical officer, all of whom

ought to have their voice, and coöperate in arranging school lighting. A feature of the discussion was the presentation of the results of a series of measurements of illumination in typical schools in London. At the next meeting of the society on March 14th the more technical aspects of school lighting will be dealt with, and further data gathered in a large number of schools and colleges will be presented.

## THE TRANSVAAL MINING COMMISSION.

THE late Transvaal Government in 1907 appointed a Commission to inquire into mining conditions generally in the Transvaal. Although the Commission submitted its final report in March, 1910, it has only recently become accessible. Its findings in the main are very sound, but all its views will not be accepted by the medical profession, particularly the very low estimate of air-space—200 cubic feet—which is considered sufficient for a native living in a "compound." Nothing can be better than the recommendations of the Commission on the matters of a constant supply of clean water for laying the dust of mining operations, the erection of proper shelters at the shaft-head for underground workers and the prohibition of erection of back-to-back dwellings, and the laying down of a standard of purity for air in the mine-workings.

## CANCER DEATH-RATES: A STATISTICAL STUDY.

WE have received from Mr. G. D. Maynard, F.R.C.S. Edin., of Pretoria, a reprint of his paper on the Statistical Study of Cancer Death-rates, which has appeared in our contemporary *Biometrika*. The etiology of cancer is still a mystery. We therefore welcome Mr. Maynard's present contribution, which approaches the subject from the statistical side, and is based on data not ordinarily accessible in this country. The writer admits, *in limine*, the imperfections that are inherent in death-rates not based on post-mortem examination, but he questions the wisdom of disregarding them entirely as valueless because of their lacking absolute correctness. One must remember, he insists, that in dealing with large masses of figures the errors in excess tend to compensate for those in defect, wrong inclusions in a group in this way counterbalancing accidental exclusions. In this connexion Mr. Maynard appropriately suggests that the value of death-returns would be greatly enhanced if the registrars would add separate tables of the causes of death concerning cases in which the diagnosis has been confirmed by necropsy. In opposition to the theory that much of the undoubted increase in the recorded mortality from cancer is due to improved diagnosis, the writer points out that when the occupational cancer-rates are examined the wealthier classes, although better provided with skilled medical aid, and therefore, presumably, undergoing a stricter process of diagnosis, show the lowest cancer death-rates, while distinctly higher rates are observed among the labouring and agricultural classes. This is the reverse of what might have been expected if the explanation were the true one—that better diagnosis accounts for the increased rate. When first approaching the study of the present problem the writer tells us that, in spite of the trend of modern research, he inclined to the view that the infectious nature of cancer might eventually be demonstrated and that it was either bacterial or protozoic in nature. But subsequently finding that the theory of infectiousness gained no support from his investigations it occurred to him to correlate the rates of cancer with those of diabetes mellitus, the reasons for this decision being as follows: (*a*) the etiology of both diseases is obscure, and they have similar age-distribution; (*b*) they stand almost alone as being on the increase, whilst practically all other diseases show a decrease. The whole essay is replete with formulæ and with tables too numerous for insertion here, and we hesitate to publish a portion of them only for fear of confusing our readers. For full consideration of the statistics we must therefore refer to the original paper.[1] At present we content ourselves with indicating some of the conclusions at which the writer has thus far arrived, and we join him in expressing the hope that the publication of the paper may encourage helpful criticism, and thus enable future work to be more profitably planned. The more important of Mr. Maynard's conclusions are to the following effect: (*a*) That the statistics already dealt with by him give no support to the suggestion that cancer is of infectious origin; (*b*) that whatever theory as to the causation of cancer is adopted some explanation is required of the remarkable correlations between cancer, diabetes, and insanity; (*c*) that the following may be suggested as a probable explanation of the facts as disclosed by statistical analysis—viz., that conditions of modern life, acting on physiologically unsound material, may account for the correlations existing between these three diseases—correlations which are not fortuitous or due to erroneous observation. The increasing mortality of cancer may also be accounted for in the same way.

## THE TYRANNY OF THE TELEPHONE.

BEFORE the introduction of the telephone it was the general habit of medical men to permit no interruption of a consultation for anything short of an imperative necessity. Once the patient was in the consulting room the practitioner's undivided attention was given to that patient until the close of the consultation; and trivial messages and communications had to wait until the medical man was at liberty to attend to them. Now, however, with the telephone on every desk it is no uncommon thing for a consultation to be frequently interrupted while queries are answered from some other patient, or appointments made, some of which may even have no bearing on professional work at all. Many patients resent this, and we think not unreasonably; and in the matter of one well-known consultant formal complaint has been made to us. Surely it would be more fitting on the part of consultants to entrust the telephone during consultation hours to an assistant who could decide whether messages should be brought immediately under the notice of his principal, or should await the termination of a consultation in progress, as in former days verbal messages, notes, or callers had to do. The situation is not so common in the routine of general practice, and here it may be to some extent inevitable, but as far as possible it should be guarded against. Urgencies are no more urgent to-day than they were then; while trivialities should not be allowed, because they are discussed by telephone, to assume a precedence which would be denied to an attempt to intrude them by verbal message, note, or personal interview.

## THE GENERAL INFIRMARY AT LEEDS.

ELSEWHERE in this issue we print the report of a meeting of the citizens of Leeds at which it was decided to take steps to commemorate the reign of His late Majesty King Edward VII. by raising a fund for the purposes of the General Infirmary at Leeds, which stands urgently in need of £150,000 for extensions and for maintenance. In the early days of the Leeds Infirmary the claim which it had upon the public for support was the moral one—that which the sick poor have always upon those who are better off; but to this are added to-day the claims of an institution to which few families in Yorkshire do not owe a

[1] Biometrika, vol. vii., No. 3, April, 1910. Cambridge University Press.

personal debt. With her infirmary and medical school, now part of a great University, Leeds may fairly claim to have played an important part in the progress which has been made in medical and surgical science in recent years, and to be capable of taking her full share in the work of the future. Whether, therefore, Yorkshiremen are guided by enlightened self-interest, by feelings of devotion and loyalty to the memory of the late King, by the more enduring and deeper feelings of sympathy with the poor and needy, or by the desire to repay the infirmary for benefits received, there can be no more worthy manner of expressing these feelings than by a ready and adequate response to the appeal which is being made to them on behalf of the Leeds General Infirmary by the Lord Mayor of Leeds.

## LIFE ASSURANCE MORTALITY RECORDS.

THE records of life assurance offices contain a mass of data bearing on the incidence of fatal disease which is seldom made available for the purposes of general medicine. At the last meeting of the Life Assurance Medical Officers' Association on Feb. 1st a paper was read by Dr. R. Hingston Fox on Mortality Records of Assured Lives. A schedule was submitted for use in the offices upon which all deaths could be entered according to the cause and the age attained. In the discussion which followed the reading of the paper opinions differed as to the use of such records in practical life assurance work, but their value in general medicine was acknowledged. The construction of the detailed schedule of diseases followed the lines of the Bertillon list, modified and expanded for the purpose. This list, which has just been adopted by the Registrars-General of the three kingdoms, has not given unmixed satisfaction to pathologists, as our own columns have shown.[1] Sir John W. Moore is not alone in his grave doubts of the expediency of putting back among local disorders the infective diseases which the Royal College of Physicians of London had placed with their epidemic congeners. On the other hand, there is an obvious and strong motive in conforming to a list which has now been accepted by nearly all the civilised countries of the world as is the case with that of M. Bertillon.

A SMART little outbreak of small-pox has taken place in the Mile End Union area, the first case being diagnosed in the Mile End Infirmary.

THE Morison lectures on Melancholia (the depressive phase of manic-depressive insanity) will be delivered before the Royal College of Physicians of Edinburgh by Dr. George M. Robertson, on March 6th, 8th, and 10th, commencing each day at 5 P.M.

THE hearing of the action brought by Mr. C. R. Thomas against Mr. H. A. Barker, bone-setter, of Park-lane, for damages for negligence in the performance of operations, which were alleged to have led to the amputation of the plaintiff's leg, resulted in the verdict of a special jury for the plaintiff for 20 guineas, judgment and costs being given accordingly

[1] THE LANCET, Jan. 21st, 1911, p. 189.

MEDICAL SOCIETY OF LONDON.—Dr. F. S. Palmer's paper on "Traumatic Neuroses and Psychoses and their Medico-Legal Consideration," which should have been read before this society on Feb. 13th, was postponed. It will be read on April 10th, when papers will also be read by Dr. F. Parkes Weber and Dr. C. W. Chapman.

# MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

*The 10-h.p. Four-Cylinder Darracq Two-Seater.*

ALTHOUGH for four-seaters the modern tendency to employ engines of a very low power is somewhat overdone, there is no doubt that for a two-seater a low-powered engine is the ideal, and therefore this car, the latest production of a firm which has always given attention to the needs of the profession, is worthy of attention as a car for professional use. The engine has four cylinders, cast *en bloc*, with a bore of 68 mm. and a stroke of 120 mm., and as a result of this long stroke the pulling power is good. It also has this advantage, it comes under the £1 11*s.* 6*d.* tax. The valves are all on one side and operated by an easily withdrawn cam shaft. Ignition is by a Bosch high-tension magneto, but though this rarely gives trouble, I must say I prefer a dual method of exploding the mixture, which on this type can be fitted as an extra. If a plug is sooted or fails it is easier to use the switch than the spanner. The firing point is fixed, and thus all ignition timing levers are dispensed with, and with a car of this power the want of a method of altering the ignition point is not felt. Cooling is assisted by a fan placed behind the radiator, and the water is circulated by a gear-driven pump. The water-pipes are of generous size, and the clips used for gripping the rubber tubing are satisfactory. This is, I know, a small point, but from experience I have found out how essential it is that these little accessories should be perfect. To have to fix a broken rubber hose with string or copper wire is worrying, and the advantage of substantial water-pipe clips, like other trifles that are not always found on cheap cars, is great. Lubrication is by a plunger pump in the base chamber, which can easily be withdrawn by unscrewing a plug in the bottom of the crank-case. An oil tank is fitted behind the dash under the bonnet, and in view of the driver on his side of the dash is an adjustable sight drip, which regulates the amount of lubricant delivered. The carburettor is of the latest Darracq type, it is very simple, and permits of the jet being withdrawn in a few seconds. From the float chamber to which the petrol comes by gravity, the jet projects at right angles, and over the latter is the choke pipe that conducts the mixture through a foot-controlled throttle to the inlet valves. So many carburettors are a source of worry, that I welcome this type, as with it complications seem impossible. It is also economical, as I found the car do from 25 to 27 miles to the gallon of petrol, and another characteristic is the ease with which the engine can be started, even the first thing on a frosty morning, after the car has been standing all night. The transmission is by a leather-faced cone clutch with spring buffers to a gate-controlled gearbox, provided with three forward speeds and a reverse, and then by a Cardan shaft with two universal joints to the usual live axle. I had the opportunity while at Walnut Tree Walk of seeing one of these taken to pieces, and was greatly impressed by its simplicity and strength; the differential, too, appeared a sound engineering job, and provided that plenty of grease and oil is placed in the crown wheel casing, these parts should be free from breakdown and, what is more, have a very long life. A thrust ball-bearing is fitted on the crown wheel, otherwise the bearings are of the plain kind, and provided that during the first few runs plenty of grease is supplied to the shafts, to which the back wheels are fixed, they answer very well. On the trial car lent me, I found these bearings, even after an 80-mile run, perfectly cool. The front wheels also run in plain bushes, grease cups providing ample lubrication. The steering gear is of the irreversible pattern, and I found it easy to use and quite free from any loss of motion between the hand wheel and the steering axle. Three brakes are supplied, one pedal applied, acting on the Cardan shaft, and two others controlled by the hand lever, and taking effect upon the back wheels. All are of the internally expanding variety and well provided with means of taking up wear, and designed so that when required new shoes can easily be fitted.

A good many objections have been made to accelerator pedal control, but this has always been because it was in an uncomfortable position; here it is in the most convenient place, with the result that I am sure all will be satisfied with this

easy method of control. I took the car from Walnut Tree Walk and drove through the City. There are occasions on driving a small car in traffic when the engine, after a halt behind slow-going vehicles, falters if asked to pick up again on the top speed; this was not in evidence with this car. In fact, the nicety with which it could be controlled and the refined manner in which the power was developed, impressed me greatly, and certainly gave me the impression that it was an ideal mount for the doctor who drove himself. And yet I had a bad night's rest as a consequence of my drive. While in the Commercial-road there was a halt in the traffic, in front was a van, behind me another, and on each side more vehicles; the brakes stopped the car at once, but I was hemmed in, with the result that when the front van backed the test car's front mud-guard acquired a fantastic and morbid form. The fault was, of course, not mine, and as I was not sure if Messrs. Darracq had insured this car I dismounted to obtain the usual particulars in view of a possible action for damage; this entailed the presence of the police, and later on I heard that they wanted the name of the car owner, and then I discovered that as I was driving with trade numbers, if the car was not entered in the firm's books as lent to me for a trial run they might have been summoned and perhaps fined. Of course, on the following day I ascertained that Messrs. Darracq had complied with all the requirements of the law. Still, this incident resulted in a sleepless night, during which I had time to reflect on the worries of my amateur calling as well as the need for insurance for cars likely to be used in traffic.

I took the car to Orpington, where I showed it to a medical motoring friend, and together we found some hills, which not only by their steep gradient, but by their unexpectedness and many twists, forced the vehicle to do its best, and in every way it was a very good best. With three up it climbed a hill of 1 in 6, and on this hill either set of brakes held it in both directions. Of course, what a prospective owner wants to know is whether the low cost makes its presence felt in any detrimental manner that might lead to wear of important parts, or breakdowns. From my test I am of opinion that cheapness had not been obtained at the price of quality, and that the car can be relied upon to give good results, and is well calculated to satisfy those needing a first-class machine that is essentially economical as regards initial and working costs; but, of course, as in the case of expensive cars, the parts must be kept lubricated and adjusted, especially the plain bearings. This is easily done, and anyone should be able very quickly to acquire the knowledge of how to do it. It is with a small car that most owners become experts in keeping it "tuned up," for whereas with, say a 50 or 60-h.p. the driver can afford to run it in an enfeebled condition, it is not so with a low-powered car, that naturally grumbles when it has to work under disadvantages; a 60-h.p. might go on two cylinders or with leaky valves, or two sooted plugs, a 10-h.p. would, anyway, not climb a hill when so handicapped. The car is turned out with a victoria hood and front screen, and with added side doors is comfortable and practically weather-proof.

*Gold Reflectors for Lamps.*

Messrs. Brown Brothers, Limited, have introduced a gold reflector for use in connexion with their Autoclipse lamps. This projects an agreeable warm-coloured light and in misty or foggy weather has certainly advantages over the ordinary silver variety. It can be fitted without much expense to old lamps.

*The Modern Methods of Setting Motor-Car Springs.*

The comfort of the occupant of a motor carriage depends chiefly on how the car is sprung, and this almost wholly consists on how the springs are set. In the earlier days each leaf of a spring was tempered and set so that before the load was received the distance between each component leaf was the same and corresponded to about the thickness of the most powerful leaf, each leaf, of course, only touching its neighbours at the ends. The longest plates have necessarily the most pull or "nip," and the up-to-date method is to have the distance between each plate graduated, commencing with a distance equivalent to the number of the plates mutiplied by the thickness of the top spring-plate and terminating with practically nothing at the bottom. Those who have old cars, which leave much to be desired in the matter of softness in riding, can by having their springs reset in this way by a capable coach-smith greatly improve the riding of their cars. I recently had the opportunity of a chat with a rather famous coach-smith who had by so doing completely eradicated the jog bumpiness of a friend's car. He complained rather bitterly of the hard lot of the spring, which because it seldom broke received no care. He advocated the taking down once a year of all carriage springs and of cleaning and greasing each plate; especially if they had been subjected to any undue stress, such as may occur through a severe jolt or collision with, say, a curb or bank, he thought that they should be reset, for the use of a dislocated spring may lead to a disaster.

*The Fitting of Speedometers.*

The question whether these useful accessories should be fitted by means of gears attached to the front wheel, or driven by a band off a split pulley attached to the Cardan shaft has been the subject of various letters which I have received from colleagues. Both methods are said to be satisfactory, but I certainly advise the former, although it is slightly noisy. When a belt is employed there is always the likelihood of slip and then inaccuracy.

*Should a Sprag be fitted?*

The answer, I think, is in the affirmative. Those who drive, I am sure, appreciate, when on a hill, being able to start the car without the worry of letting the clutch in just as the brake is taken off. In addition to being of use when after a stop on a hill the climb is continued, it is a sort of moral support to the driver, if new at the work, to know that it is there and down, and that, if in changing speeds he should miss his gears, there will be no backward movement. The old-fashioned variety hinged at its upper end to some part of the frame, with a keen chisel edge for the ground-striking extremity, has many advantages and is less likely to suffer derangement than the pawl and ratchet species.

## THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

*Medical Attendance as an Emolument.*

THE General Purposes Committee having asked the Council to decide whether the emolument of "medical attendance" allowed to certain officers included medical or surgical attendance of an extraordinary kind—for example, a surgical operation, the following regulation was adopted. The words in italic were inserted in the General Purposes Committee's recommendation at the suggestion of the chairman of the Fire Brigade Committee:—

> Officials and employees who receive as an emolument medical attendance shall be entitled to receive advice and treatment by the medical officer under whose care they may be placed by the Council, but, except where *special treatment is necessitated by circumstances due to the nature of the occupation, or where* the Council considers that the particular circumstances of any case warrant special treatment, the Council will not provide special medical advice or any treatment other than that which can be given by such medical officer at the institution of the Council in which such official or employee is residing if in residence at an institution, or, if not in residence at an institution, then at the ordinary place of residence of such official or employee.

*Lunacy Statistics.*

The Asylums Committee has reported that the returns furnished by the clerks to the London boards of guardians and the information available in regard to London county asylums showed the number of lunatics under certificate on Jan. 1st, 1911, to be 26,845, as compared with 26,377 on Jan. 1st, 1910, an increase of 469. This, though greater than the increase recorded in 1910—namely, 84—might be contrasted with increases of 678 in 1909 and 403 in 1908. The average annual increase during the last 21 years of lunatics for whose accommodation the County Council was responsible was 479.

OLD-AGE PENSIONERS AND MEDICAL RELIEF.—At the last meeting of the Okehampton (Devon) board of guardians the clerk stated that every old age pensioner is not entitled to medical relief. He added that some of them had £400 in the bank. The relieving officer remarked that he should give medical relief to any old age pensioner, unless the applicant had sons who were in a position to bear the cost of medical attendance.

# THE LANCET RELIEF FUND.

THIS Fund, which came into operation on the 1st of February, 1889, has for its Almoners the President of the Royal College of Physicians of London (Sir THOMAS BARLOW, Bart., K.C.V.O., F.R.S., M.D. Lond.), the President of the Royal College of Surgeons of England (Mr. HENRY T. BUTLIN, D.C.L., LL.D.), the President of the General Medical Council (Sir DONALD MACALISTER, K.C.B., M.D. Cantab., LL.D., D.C.L., F.R.C.P. Lond.), and the EDITOR of THE LANCET (S. SQUIRE SPRIGGE, Esq., M.D. Cantab.), with Sir JOHN TWEEDY, LL.D., F.R.C.S., as Honorary Auditor.

***Almoners.***

FOR the guidance of those seeking assistance and of those desirous of recommending deserving cases, it may be useful to record that THE LANCET Relief Fund is sustained solely by the Proprietors of THE LANCET, who provide every January the sum of at least £300, which is administered free of cost, with the object of affording immediate pecuniary assistance to registered medical practitioners, or to their widows and orphans, in cases of distress and emergency, by the grant of money by way of loans free of interest, or gifts, as the circumstances of the various cases may require. In the case of widows and orphans, in order to come within the scope of the Fund, the death of the Husband or Father must have been of recent occurrence.

***Scope of the Fund.***

WHEN the Fund was inaugurated considerable misapprehension existed as to the precise objects for which it had been established, and, as a result, the majority of the earlier applications, being cases of *chronic* distress, and not coming, therefore, under the designation of *emergency*, could not be entertained. As the Almoners still receive applications for assistance for cases which are obviously of a *chronic* character, it is thought advisable to append a statement concerning cases of this nature which appeared in THE LANCET of Feb. 16th, 1889:—

***Chronic Cases Ineligible.***

"We are requested by the Almoners to state that, from the character of a number of the applications received, both personally and by letter, for relief, it is evident that in many cases the object for which this Fund has been established is not quite clearly understood; and if relief had been afforded in the cases of those who suffer from chronic distress the Fund would have been completely exhausted within the first few days of its existence. They would therefore be greatly obliged if those readers of THE LANCET who may be asked to endorse applications would carefully peruse the Application Form and explain the precise object of the Fund to those applicants whose cases do not seem to come within the scope of the purpose for which the Fund has been established, which is to afford prompt aid to registered medical practitioners, or to the widows or orphans of members of the profession, who, in consequence of the supervention of some unexpected emergency, which is not likely to recur, have pressing need of immediate and temporary pecuniary relief"—

And who, it may be again pointed out, are likely to be benefited permanently thereby.

## *Twenty-second Annual Report of the Almoners,*

*For the year ending December 31, 1910.*

IN presenting their Twenty-second Annual Report, the Almoners have to record that the balance in hand on Dec. 31st, 1909, was £332 1*s.* 2*d.*, to which on Jan. 5th, 1910, the Proprietors of THE LANCET added the sum of £300, making, with £2 10*s.* repaid on loans account, a total sum of £634 11*s.* 2*d.* available for grants during the year 1910.

The number of applications for assistance received by the Almoners during the year was 32, of which number 5 were declined by the Almoners after due consideration; 7 application forms were not returned—doubtless owing to the applicants realising that their cases were not of a nature qualifying them to receive assistance from the Fund; and 20 applicants were relieved by gifts or loans of money ranging from £2 10*s.* to £30. The relief of these 20 cases, a detailed list of which is given in the accompanying Statement of Accounts, involved the expenditure of the sum of £307 10*s.* The total amount voted by the Almoners since the commencement of the Fund is £6661 16*s.* 3*d.*

The Almoners have received many expressions of gratitude for the assistance which they have afforded to applicants—in some urgent cases the relief being given within a few hours of the application being received. An example of this promptitude was Case No. 842, which was considered and helped within two hours of the appeal being made to the Almoners. The timely help of the Fund has enabled more than one applicant to keep his practice together when pressing claims threatened to destroy his home and his means of livelihood; and the widow and the orphan have also been helped at the moment of their greatest need.

Sir Thomas Barlow, Bart., K.C.V.O., F.R.S., M.D. Lond., having succeeded Sir R. Douglas Powell, Bart., K.C.V.O., as President of the Royal College of Physicians of London in March last, thereupon became an Almoner of the Fund, and kindly consented to act as such. The Almoners desire to record their warm appreciation of the valuable services rendered to the Fund by Sir R. Douglas Powell during the period of his Almonership.

In conclusion, the Almoners would point out that they will

at all times be glad to have their attention called to any cases of genuine distress coming within the scope of the Fund, but they trust that those recommending cases or giving testimonials will first take steps to satisfy themselves of the *bona fides*, as well as of the suitability, of such cases before endorsing them. In the administration of such a Fund as this the Almoners are of necessity largely guided in their decisions by the testimonials accompanying the applications.

(Signed) THOMAS BARLOW. HENRY T. BUTLIN.
DONALD MACALISTER. JOHN TWEEDY.
S. SQUIRE SPRIGGE.

Feb. 6th, 1911.

# THE LANCET RELIEF FUND.

## *STATEMENT OF ACCOUNTS FOR THE YEAR ENDING DEC. 31st, 1910.*

| DR. | £ | s. | d. |
|---|---|---|---|
| To Balance at the London County and Westminster Bank, Limited (Westminster Branch), Jan. 1st, 1910 ... | 332 | 1 | 2 |
| ,, Proprietors of THE LANCET, Jan. 5th, 1910 ... | 300 | 0 | 0 |
| ,, Repayments on Loan :— | | | |
| Case No. 844... ... ... ... ... | 2 | 10 | 0 |
| ,, Cheque unpresented :— | | | |
| Case No. 868... ... ... ... ... | 12 | 0 | 0 |
| | £646 | 11 | 2 |

| CR. | £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| By Loans :— | | | | | | |
| Case No. 843 ... ... ... | 25 | 0 | 0 | | | |
| ,, 844 ... ... ... | 10 | 0 | 0 | | | |
| ,, 847 ... ... ... | 10 | 0 | 0 | | | |
| ,, 851 ... ... ... | 8 | 0 | 0 | | | |
| ,, 861 ... ... ... | 25 | 0 | 0 | | | |
| ,, 866 ... ... ... | 25 | 0 | 0 | | | |
| | | | | 103 | 0 | 0 |
| By Gifts :— | | | | | | |
| Case No. 839 ... ... ... | 20 | 0 | 0 | | | |
| ,, 840 ... ... ... | 30 | 0 | 0 | | | |
| ,, 841 ... ... ... | 5 | 0 | 0 | | | |
| ,, 842 ... ... ... | 15 | 0 | 0 | | | |
| ,, 855 ... ... ... | 15 | 0 | 0 | | | |
| ,, 857 ... ... ... | 15 | 0 | 0 | | | |
| ,, 858 ... ... ... | 25 | 0 | 0 | | | |
| ,, 859 ... ... ... | 15 | 0 | 0 | | | |
| ,, 862 ... ... ... | 10 | 0 | 0 | | | |
| ,, 863 ... ... ... | 20 | 0 | 0 | | | |
| ,, 864 ... ... ... | 10 | 0 | 0 | | | |
| ,, 865 ... ... ... | 10 | 0 | 0 | | | |
| ,, 867 ... ... ... | 2 | 10 | 0 | | | |
| ,, 868 ... ... ... | 12 | 0 | 0 | | | |
| | | | | 204 | 10 | 0 |
| ,, Bank Charges : Cheque Book ... ... ... | | | | 4 | 2 | |
| ***Balance at Bank, Dec. 31, 1910*** ... | | | | 338 | 17 | 0 |
| | | | | £646 | 11 | 2 |

I find by the Banker's Book that the actual Balance on Jan 1st, 1910, to the credit of the Fund was £332 1*s.* 2*d.*, to which the sum of £300 was added by the Proprietors of THE LANCET on Jan. 5th, 1910. The balance at the Bank on Dec. 31st, 1910, was the sum of £338 17*s.* 0*d.*

I have examined this statement and compared it with the Vouchers and Bank Account, and find same correct.

Jan. 30, 1911. JOHN TWEEDY, Hon. Auditor.

EXHIBITION OF FRACTURES.—On the occasion of the Third Congress of the International Society of Surgery which is to be held at Brussels from Sept. 26th to 30th, 1911, it has been decided to hold an Exhibition of Fractures. Exhibits intended for the exhibition must reach the Secretary-General, 75, Avenue Louise, Brussels, from August 20th to 31st, who will return them at the end of the Congress. Specimens of every kind as well as documents relating to the study of fractures may be exhibited, notably (1) pathological specimens (various types of fractures and rare fractures); (2) radiographs, drawings, plaster casts, moulds, &c.; (3) apparatus for bloodless treatment (including apparatus for immobilisation, extension and ambulatory treatment); and (4) specimens and documents relative to osteosynthesis. Non-members approved by the international committee, for which approval the secretary-general will arrange, are invited also to take part. The sessions will be arranged so that exhibitors will be able to show their exhibits to the members of the society during the Congress, and subjects will be placed at the disposal of those who require them. Arrangements are being made for special reductions in the railway transport rates, as was the case with the Cancer Exhibition. Professor J. Lucas-Championnière is the President of the Third Congress, and Monsieur A. Depage is the secretary-general. Monsieur L. Mayer is the secretary of the Congress. Forms of application may be obtained on request.

# MEDICINE IN THE ENCYCLOPÆDIA BRITANNICA.

## I.—HISTORY OF ANATOMY.

IN our issue of Feb. 11th we referred in general terms to the new edition of the Encyclopædia Britannica and to the manner in which the special requirements of the medical profession were provided for. It is our intention in this and succeeding issues to consider more in detail the various articles in the Encyclopædia which deal with medical subjects. Medicine is dealt with as a whole in one article, which has not yet been issued, but the volumes contain a number of articles dealing with the causes, symptoms, and treatment of specific maladies. Among the contributors in the field of Medicine and Surgery are Sir Clifford Allbutt, Sir Lauder Brunton, Professor Robert Muir of Glasgow, Professor Sims Woodhead, Sir John Broadbent, Mr. Edmund Owen, and Mr. Stephen Paget, while Mr. F. G. Parsons has written the article on Anatomy which we deal with below, and has also planned the treatment of the subject throughout the volumes upon a comparative method.

Of Mr. Parsons's contribution we may say that the method of arrangement in this edition shows a marked contrast to that of earlier issues. The whole subject has been broken up from two articles into about 30, the anatomical descriptions of various parts of the body being found under such respective headings as arteries, heart, ear, eye, liver, skull, urinary system, &c. This arrangement has the advantage for the general reader of throwing all the information given about one organ or group of organs into one chapter—in effect a treatise on the biology of certain organs or functions. For a book of general reference this method is undoubtedly sound. The article on "anatomy" is therefore limited to an historical sketch and a few pages on the artistic aspect of the subject with which we are not concerned. The historical *résumé* forms a valuable monograph throwing important lights on the growth of scientific thought.

The history of anatomy as known to the Græco-Roman world is so far crystallised that it has not been deemed necessary to alter in any substantial details the article written by the late Dr. Craigie of Edinburgh for the ninth edition of the Encyclopædia. The number of extant authorities is small, and their writings have been submitted to minute criticism for at least three centuries. But the number of extant writers does not represent the sum total of workers in the anatomical field. Anatomy was a small excrescence on the art of healing, and that art was an hereditary priestcraft, handed on in families of distinction, attached to well-known temple shrines. Such was the family of the Hippocrates, for seven members of the race of the Heracleidæ bore this name in the Island of Cos, the "Father of Medicine" himself being Hippocrates the Second. We may reasonably look for future light on the origins of medicine in Crete when we remember that the Ionian population of the north-eastern Ægean was thrown out from the Mycenean cities of the Peloponnesus under the stress of the successive wars of the Dorian invasions. A curious hint is also afforded by the fact that the earliest anatomical treatise extant is an Egyptian papyrus of the sixteenth century B.C., at the probable zenith of the Minoan civilisation in Crete, just 200 years before the "destruction of the Palace" and the dismemberment of the great Cretan Empire.

It is undoubtedly wise not to attach too much importance to Hippocrates and his school as authorities on anatomy, in spite of the encomiums bestowed upon this branch of attainments by enthusiastic and learned admirers. His knowledge was necessarily defective owing to the impossibility of dissection, for the Greek feeling of respect for the dead offered a bar to its practice as complete as that presented ten centuries after by the Moslem religion. This estimate of Hippocrates' anatomical knowledge is confirmed in the short biographical article under his name from the pen of Sir John Batty Tuke. Hippocrates was one of the master minds of the world, a mind which was part of the huge intellectual output of post-Mycenean Greece, part of an output certainly never surpassed and possibly never equalled. Whatever his defects in anatomy may have been he remains a master at the bedside; Laennec admitted that Hippocrates had taught him "l'auscultation immédiate." If not the first to hold, he was the first to express, the conviction that diseases must be scientifically treated as subject to natural laws, however they may be regarded from the religious point of view. Nor was he anxious, as the author reminds us, to maintain the connexion between philosophy and medicine, for, according to Celsus, Hippocrates of Cos was "*primus quidem ex omnibus memoria dignus, ab studio sapientiæ disciplinam hanc separavit, vir et arte et facundia dignus*" (De Medicina). The article closes with a valuable note on the Hippocratic collection and the reasons for accepting some of the treatises as genuine and others as not so. There is no difficulty now in assigning a proper portion of the various Hippocratic writings to the great physician of Cos, for few writers have been exposed to such continuous criticism in the course of many centuries.

It is unnecessary to reclaim the title of the Father of Medicine. The treatise Περὶ ἀέρων, ὑδάτων, καὶ τόπων (Airs, Waters, and Places) is always the first treatise on public health. There is little to be said anew on such a hero of medicine, but the remark that Hippocrates advocates the use of the trephine with more boldness than the experience of later times has warranted, may suggest that the operation was still a survival of a practice of the Neolithic age. Among the followers and pupils of Hippocrates the most noted is his son-in-law, Polybius, to whom has been ascribed the whole of the book on the "Nature of the Child," and most of that "On Man." There is abundant anatomical matter in both, largely grotesque and inaccurate. The opinions of Syennesis of Cyprus and of Diogenes of Apollonia have been preserved for us briefly by Aristotle, and they indicate no more exact observation. With Aristotle himself anatomy, as a science based on direct observation, really began. The first three books of the "History of Animals" survive out of ten, and the four books of the "Parts of Animals." From them we learn that the errors of the three writers given above on the subject of the distribution of the blood-vessels were becoming recognised. Though Aristotle distinguished between arteries and veins, he confused the vena cava and the pulmonary artery.

The error, which died so hard and so late, that the arteries were air-vessels appears to have originated with Praxagoras of Cos, the last of the Asclepiadæ. The article before us seems to imply that Diocles of Carystus followed Aristotle in date; it was usually supposed that Diocles was a contemporary of Darius Hystaspes, who died in 485 B.C. The real study of human anatomy began in Alexandria during the reign of Ptolemy Soter and his successors. Herophilus and Erasistratus undoubtedly dissected and described the human body and were largely responsible for the high reputation of the Alexandrian medical schools. None of their writings have come down, but sufficient references have been made to them by Galen, Oribasius, and others for us to realise the value of their work. Erasistratus described and named the valves of the heart, the division, cavities, and membranes of the brain, and the folds of the jejunum. Both he and Herophilus described the brain, its shape, cavities, and convolutions, and the latter was the first anatomist to give his name to a part of the body. Mr. Parsons is perhaps wise in not assigning a date to Aretæus, as his exact historical position is not certain, though it was clearly in the first century A.D.

The scanty contributions of the Greek practitioners of the early Empire, who preceded Galen, have received all the attention they deserve. The work of Marinus and Rufus of Ephesus is chiefly conserved in Galen's writings, and with Galen's death in 200 A.D. classical anatomical knowledge ended. Soranus (the anatomist) and Oribasius, Miletius and Theophilus (chief medical officer to Heraclius), strove in vain to wear the mantle. The languid efforts of these compilers did little to improve the standard work carried out and personally recorded by Galen. Whatever value may be claimed for originality of clinical observation on the part of the Arabian physicians, their anatomical learning was borrowed from the Greeks, and Mondinus of Bologna, about 1315, laid the foundation stone of modern anatomy. But even in the Republican cities of Northern Italy the influence of the Church was too strong to permit such original workers as Gabriel de Zerbis of Verona or Achillini of Bologna, at the close of the fifteenth century, to gain a proper hearing in the schools. The infallibility of Galen was a tenet of faith upon which the powers of the Lateran insisted. Even such mental freedom as Sixtus V. afforded to science was a century away. We

recognise, with Mr. Parsons, the immense stimulus which the laborious compendium of Berenger afforded to students of anatomy, a stimulus assisted by the illustrations with which it was furnished. Poor as works of art, these plates were more useful to the student of the day than the artistic but useless drawings of Mondino, or the magnificent studies of Leonardo da Vinci or Albrecht Dürer.

Vesalius has always been claimed as the founder of modern anatomy, and no attempt is made in Mr. Parsons's article to depose him; but the admirable sketch of the work of Jacques Dubois, who was the original master of Vesalius in the science, shows how much the pupil owed. He was not the untaught heaven-born genius that some of his biographers have made him.

From the time of Vesalius to the time of Harvey the names of the greater anatomists seem like the names of the great navigators: they have been attached to bays and promontories, where instead of the titles of Hudson or Magellan we recognise Eustachi of San Severino, Fallopi of Pisa (pupil of Vesalius), Constantio Varoli (physician to Gregory XIII.), Fabricio, who first described the valves of veins, and his pupil, Casserius of Piacenza, with whom closed the illustrious line of Italian anatomists.

Proper space is given to the consideration of the question of provision by the State of subjects for dissection in authorised schools. The necessity of practical dissection was forced upon medical teachers in Great Britain by William Hunter about 1750, with the result that in 1793 there were 200 students studying regular anatomy, and by 1823 the numbers reached at least a thousand. The legalised supply of subjects was confined by a statute of Henry VIII. to the bodies of executed murderers, which happily for morals if not for science was limited even in those cruel days. The practice of "body-snatching" was the natural, if deplorable, outcome of an insufficient supply of subjects. The article under review gives an excellent summary of the difficulties which preceded the passage of the "Anatomy Act" of 1832. There was official opposition on the part of the Royal College of Surgeons of England, whose Fellows were jealous of any advantage which might possibly accrue to private teachers, who formed the majority of the anatomical schools. Other opposition came from parliamentarians like "Orator" Hunt, Michael Sadler, and Sir R. R. Vyvian (then Member for Bristol). Macaulay, in one of his most incisive speeches, illuminated by incidents of mediæval surgery, supported the Bill as one "which tends to the good of the people, and which tends especially to the good of the poor." It is to be regretted that in his final sentence on this subject Mr. Parsons shows that the same sentimentality which influenced Hunt and Sadler in 1832 is influencing boards of guardians to-day; for the Anatomy Act is not compulsory on such boards but only permissive.

Space forbids our entering on a consideration of that part of the article that deals with modern anatomy; suffice it to say that the ground is fully covered and the subject amply treated.

## RECORDS FROM MEDIÆVAL CORONERS' COURTS.

(FROM A CORRESPONDENT.)

IN THE LANCET of Dec. 17th last there were discussed some features of the Coroners' Law and Death Certification Amendment Bill, and an outline was given of the history of the office of coroner and the duties of that officer. It was pointed out that the coroner was closely connected with judicial matters, and that therefore in the beginning he might be expected to be a lawyer. To pursue the subject somewhat further, it may be added that the essential function of the early coroners was to guard the rights of the Crown. Criminals were sought out and deaths by violence and misadventure were inquired into, not so much because someone had died or had been killed, but because the death or the crime was a source of revenue to the Crown.

Coroners had a much wider field of inquiry in early days than they now have, for in addition to the duties mentioned in the article in question they were obliged to hear "appeals" or criminal accusations brought by one person against another. The final trial of the causes was reserved for hearing at the "eyre"—i.e., at the visit of the justices on circuit, the term "eyre" being derived from "in itinere." It was the coroner's duty to be present at the eyre; he held an important position, for he was the link between the itinerant justices and the local administration, and so between the Crown and the people. I propose to cite a few cases both from the records of coroner's courts and from those of the Crown pleas at the eyre, between 1200 and 1413, which I think will be found interesting both from a medical and from a historical point of view. Sundry expressions in the reports are somewhat puzzling unless the reader is aware of the procedure, so I have explained technicalities in the course of this article.

To begin with the inquest jury, the composition of this body varied in different places and at different dates, but about the thirteenth century it commonly consisted of representatives from four neighbouring townships—namely, from that in which the death occurred or in which the body was found, and from the three nearest townships. The number of jurymen varied, but was often, as it is now, 12. Persons declared guilty by the jury, those who were present when the sudden death occurred, and the finders of the dead body were all attached to appear at the eyre before the itinerant justices. The finder of the body was not, however, attached if the deceased had received the last rites of the church, because presumably he would then have been able to state who had attacked him. Thus we have the following entry in the coroners' rolls of Northamptonshire:—

> It happened at Little Houghton that Richard le Muleward was found dead on Saturday next after the feast of St. Dunstan in the sixth year of King Edward III. (May 23rd, 1332). An inquest was held before John de Tuwe the coroner on the aforesaid day and year by the oath of twelve jurors who say that Richard quarrelled with two men who killed him. There was no finder because he had the rites of the church.

That is to say, that no record of the finder of the body was kept because Richard had survived long enough to say who were his assailants and to receive the last rites.

The finder of a person feloniously slain had to raise the hue, and one method of doing this was for the finder to inform his four nearest neighbours, who then notified the bailiff of the hundred, who in turn sent for the coroner. At the inquest the chattels of the person indicted were appraised, and the property thus appraised was placed, as a rule, in the charge of the township in which the death occurred, to be accounted for at the next eyre. If the accused was found guilty his chattels were forfeit to the king. Sometimes the only chattel which a murderer possessed seems to have been the weapon with which he committed the crime. Thus on July 2nd, 1410, Richard Barber killed John Taylor with a sword at Weston in Staffordshire. He was found to have no goods or chattels, but the sword was valued at 2*s*., "for which the township of Weston is to account."

Murder was, as might be expected, a much simpler affair in the Middle Ages than nowadays. Poisoning was almost unknown, or possibly was never discovered as such, for the deaths by violence which are reported in the coroners' rolls are all due to injury by weapon and are often characterised by extreme brutality. On April 23rd, 1271, John Rede, Matilda his wife, and their two servants were sitting at supper in the town of Ravensden in Bedfordshire when certain felons and thieves came to the house. They hit John on the head with an axe and also stabbed him to the heart, so that he died immediately. Then they wounded Matilda in the head, nearly cut off her left hand, and, having heated a trivet, placed her upon it. Having bound the two servants, they despoiled the house and departed, leaving Matilda for dead. One of the servants unbound himself and raised the hue. At the inquest certain persons were ordered to be arrested, Matilda, despite her serious injuries, being able to attend and to give evidence. Our forefathers must have been a hardy race, for they had a wonderful power of recuperation. Witness the following case. At Barford in Bedfordshire, on Oct. 10th, 1271, John of Bretteville was walking with his wife Emma on the King's highway. To them appeared one Simon, who struck John with a sword of iron and steel on the top of his head, on the left side between the parting of the hair and the ear, making a wound 5 inches long, 3 inches wide, and extending down to the brain, so that 13 pieces of bone afterwards came out from the said wound. He also with the sword divided the tendons of the little finger of John's left hand and fractured the third finger of the same hand. Nor did his malice stop there, for he also struck John on the right side of his head with the flat of the sword, many blows which did not bleed

(*orbos ictus et multos*), so that the whole top of his head was excoriated and swelled up and he lost his hearing on the left side. Emma raised the hue, and on the following day she appeared at the county court before the coroner and there said that if her husband recovered he would sue in person at the next county court. Despite his severe injuries John appeared in person at the county court held on Nov. 30th, 1271. Simon was summoned at the following county court held on Dec. 21st, but did not appear. He was summoned again on Jan. 25th, March 21st, Feb. 27th, and finally on April 18th, 1272, John appearing every time. Simon, however, did not appear until the April court, but the record does not go on to say what happened to him.

Another interesting case is that of Henry Costentin, who in the parish of Eaton in Bedfordshire was on Thursday, August 11th, 1267, loading wheat into a cart. His feet slipped and he fell upon a pole of the cart so that the pole went into his fundament. He lived until the following Monday when he died at 6 A.M., having received the rite of the church. A verdict of death by misadventure was returned. The cart, the harness, and the wheat were valued at 6*d*., the horse at 2*s*. 6*d*.

In cases of death by misadventure the deodand was valued and confiscated for the crown. Deodanda was the legal term for any animal or inanimate objects by which a man came to his death. In accordance with its name it was supposed to be applied by the Crown to pious uses—i.e., to be distributed as alms. In an inquest held at Cowly, in Gloucestershire, on the body of a child aged 3 years, by name Robert Fox, a verdict was given that he fell into a pan of milk and was thus drowned. The inquest was held on Sept. 15th, 1396. The pan was valued at 6*d*. Several other inquests deal with the deaths of children from drowning in a well, and the circumstances of the following case are of interest from the point of compensation which would now probably be sought. William and John, both of Goldington in Bedfordshire, had a dispute on Sept. 26th, 1267, concerning some sheep, with the result that William received a wound on the head four inches long. He recovered from this and made it up with John. A little later William had an attack of ague and died, whereupon his wife raised the hue out of spite. The coroner, Simon Ruffus (Read), held an inquest at which Goldington and three other townships were represented. A verdict was returned that William did not die from the wound but from the ague. Nevertheless John was attached.

Inquests on deaths in prison were frequent and throw a sinister light on prison treatment. Thus at the inquest on Robert Rushton, who died in Northampton Castle on March 20th, 1323, 12 jurors say that he died from hunger, cold, and privation. John Swan, who died in the same prison on July 25th of the same year, was found to have died from hunger and the flux. Geoffrey of Steventon, a chaplain who died in the same prison on August 9th of the same year, was found to have died from hunger and thirst. The same was the case with Thomas Philip, Michael Smith, and Roger of Keston, who all died in the same prison.

I have referred above to a case in which 13 pieces of bone were extracted from the skull of a man who had been wounded in the head. But an even more remarkable case was heard at the Cornish eyre of 1201. Here Eadmer of Penwithen appealed Robert and two other men for that Robert wounded him in the head so that 28 pieces of bone were extracted. Robert attended the court and "defended the whole of it word by word." He was, however, sentenced to purge himself by ordeal of iron, and the two others were to be kept in custody until it should be seen how Robert should fare. Despite his injuries Eadmer was present in court. The action appears to have failed, for it is stated that Eadmer afterwards came and withdrew himself "et posuit se in misericordiam de j. marca"—i.e., he agreed to pay a fine of one mark. But that he should have recovered enough to prosecute after such a serious injury is worthy of note, and why he was fined is not clear.

The age was a rough one, but we find no records of such refinements of crime as are found in the criminal records of later days. There is one case noted at the Lincolnshire eyre of 1202, where Thomas appealed Alan for that Alan had taken him by force into his house "et eum tenuit dum uxor ejus (Alan's) abscidit ei unum testiculorum suorum et Radulfus Pilatus alterum"; in this mangled condition Thomas was carried by Alan into the road, where he raised the hue as soon as he could, and the king's serjeant was informed. This official came to Alan's house and "ibi invenit cultellum et testiculos in ciphulo quodam." But as a rule in quarrels or assaults, the simple dictum "when you see a head, hit it" was enough for our forefathers. A study of the volumes containing the pleas and cases upon which we have commented—namely Vols. I. and IX. of the Selden Society's publications—reveals the fact that nearly all the crime in the Middle Ages came under the head of crimes of violence; murder, buglary with or without assault, wounding, rape, and mutilation appear again and again. There are a few instances of petty theft and of cheating by false weights, but the elaborate swindles, the carefully thought-out and planned murder seem to have been unknown. They were reserved for an age in which education, despite all its benefits, may lead the criminally inclined down the road of wickedness no less than the ordinary person up the hill of improvement.

## THE HEALTH OF THE ARMY IN 1909.

### I.

WITH the publication of the fifty-first volume of the Army Medical Reports we notice that the title of the volume has been changed from "Army Medical Department Report" to "Report on the Health of the Army." A designation that has been in use for half a century cannot be dropped without some slight regret; but as there has been, strictly speaking, no "Army Medical Department" for many years past, the continuance of the old title was an anachronism. The new name is also more appropriate, since, although the work dealt with in the report is almost entirely that of the medical service, it derives its importance from the fact that it relates to the army as a whole. Continuing the practice of his predecessor, the Director-General summarises the chief points of interest in an introductory letter. The improvement in the health of the troops that has been noticeable since the conclusion of the war in South Africa is continued, and for 1909 a considerable decrease is noticeable in the four items of admissions to hospital, average number constantly sick, deaths, and numbers invalided. The following short table shows this clearly; the figures are ratios per 1000 :—

| — | Admissions. | Constantly sick. | Deaths. | Invalids. |
|---|---|---|---|---|
| 1889–1898 ... ... | 997·3 | 59·85 | 9·03 | 15·36 |
| 1904–1908 ... ... | 594·5 | 35·40 | 5·47 | 13·73 |
| 1909 ... ... ... | 504·8 | 28·86 | 4·10 | 8·65 |

The improvement, when the 1909 figures are compared with the averages of the preceding five years, is seen to be marked under each heading, and if the decennial ratios of the period immediately before the South African war be regarded, the results are in the highest degree satisfactory. The admissions to hospital and the numbers constantly sick are much below the quinquennial average, and are only about half the averages of ten years ago; the deaths are less than half and the invalids but slightly more than half these averages, and are considerably below the averages of the five years immediately preceding the year under review. The statistics for the years 1899 to 1903 are exceptional, owing to the South African war, and are not therefore properly comparable. As explained in last year's report, the decrease in admissions to hospital and in men constantly sick is due in a considerable degree to the introduction of the out-patient system of treatment in 1904, according to which slight cases of sickness are treated in barracks. The reduction in mortality and invaliding ratios is, however, quite independent of this change in medical administration; the figures for 1909 are appreciably lower than those for 1908, and by far the lowest that have yet been recorded.

The total force, amounting to 217,314 warrant and non-commissioned officers and men, may be divided into three groups from a medico-statistical point of view: the troops serving in the United Kingdom, who form rather more than one-half of this number (viz., 110,492); the Army of India (71,556); and the remainder serving throughout the rest of

the empire (35,266). What has been said above about the improvement in the army's health as a whole will be seen to be equally applicable to each of the three main groups into which it is geographically divided.

*Ratios per 1000.*

| — | Admissions. | Constantly sick. | Deaths. | Invalids. |
|---|---|---|---|---|
| | *United Kingdom.* | | | |
| 1889-1898 ... ... | 712·5 | 41·14 | 4·32 | 16·98 |
| 1904-1908 ... ... | 454·3 | 25·87 | 2·85 | 16·29 |
| 1909 ... ... ... | 378·4 | 21·72 | 2·92 | 10·51 |
| | *India.* | | | |
| 1889-1898 ... ... | 1464·7 | 89·61 | 16·43 | 14·78 |
| 1904-1908 ... ... | 839·1 | 50·68 | 10·07 | 11·24 |
| 1909 ... ... ... | 716·9 | 40·26 | 6·37 | 6·35 |
| | *Colonies.* | | | |
| 1889-1898 ... ... | 869·6 | 54·37 | 8·44 | 11·24 |
| 1909 ... ... ... | 461·6 | 28·10 | 3·77 | 7·37 |

The chief causes combining to bring about this improvement in the army's health have, no doubt, been the same as were alluded to in the previous year's report—viz., changes in medical administration; improved methods of treatment in hospital, especially the great increase in operative surgical measures during recent years; improvements in sanitation; and the employment of medical officers as medical inspectors of recruits, which has led to greater care in their selection.

*Recruiting.*

The number of recruits medically examined has been 50,298; this is a considerable decrease on 1908, when 61,278 were inspected, and is a much smaller number than in any previous year; no reason is suggested for this decrease. The standards have been raised during the year; for infantry of the line the minimum height has been increased from 5 feet 3 inches to 5 feet 4 inches, and the chest measurement from 33½ inches to 35 inches, a range of expansion of 2 inches being required. For garrison artillery the height has been raised 1 inch to 5 feet 8 inches. For departmental corps the standards remain the same, a height of 5 feet 3 inches; chest measurement 33½ inches, with an expansion range of 2 inches. The minimum age is, as before, 18 years, a few special reservists being enlisted at 17. The standard of examination tends to become more uniform year by year, partly owing to the more careful instruction of junior medical officers on joining, and partly owing to the frequent inspections of recruits at depôts by the specially appointed medical inspectors. It is noted that the only question on which there is now any considerable difference of opinion is that of the state of the recruit's teeth in reference to his general physique; facilities for dental treatment are being increased, and the problem will become simplified.

The Director-General considers that the quality of the recruits was, on the whole, satisfactory, and that they would be likely to develop into a good stamp of soldier, with few exceptions, but that they must not be expected to do the work of a seasoned soldier for two or three years at least. The ratio of rejections was 299·04 per 1000, being somewhat higher than in the two years preceding, but lower than the ten-year average of 307·97 (1899–1908). The chief causes of rejection have been, as usual, defective chest measurement (58·27 per 1000), loss and decay of many teeth (54·87), heart disease (33·06), and defective vision (18·35). The rejections for chest measurement, as well as for height, have been in greater proportion this year on account of the raising of the standards. The condition of the teeth of recruits is now receiving attention, and an increased expenditure has been sanctioned for dental treatment; but real improvement is only to be looked for from education of the child in the care of its teeth at an early age. The work that is being done by education authorities throughout the country in this direction must exert a beneficial influence in the near future; but as far as recruiting is concerned, it will be several years before the good effects of preventive dental treatment in schools reach the army. There is no doubt that, as stated in the report, a certain proportion of recruits are able to get good value for the food ingested, and possess an excellent physique, in spite of a low dental efficiency; but, on the other hand, it is quite possible that they would be in even better condition physically if their teeth were in a sound condition; and there are certainly very large numbers of young adults of the age and class in life from which recruits are drawn for whom preventive dental treatment would make all the difference in the world in regard to their physical fitness.

Heart affections have caused a slightly larger number of rejections on first examination (33·06), but fewer within three months of enlistment (1·15). Many of these later rejections are due to disordered action of the heart, which is said to be aggravated, if not induced, by cigarette smoking. It is observed that "there is a possibility, if not an actual probability, that future years may not witness any further marked diminution in these affections as a whole, but that the disease itself and the cause will be changed to another in the same category." This is a cryptic saying which we do not understand. We should have thought, however, that it would not be impossible for military officers to exercise some such control over the young soldiers as would prevent them from injuring their constitutions by excessive smoking. The rejections for defective vision continue to show a diminution, the ratio per 1000 examined being now only 18·35; in the period 1899–1908 the analogous figure was as high as 34·02; the reason is that the method of testing is now by means of Snellen's test types, instead of the test dots formerly in use; the standard required, one quarter of normal vision in each eye, or normal vision in one, and one-sixth in the other eye, cannot be considered too severe.

The determination of the recruit's age in doubtful cases is still "an unsolved problem to the medical examiner of recruits." The main defect of our recruits has always been want of maturity, and in the past year there has been no appreciable improvement in this respect; the quality of the recruits has been, on the whole, satisfactory, and they should develop into a good type of soldier; but it must not be expected that they can "do the work of a seasoned soldier for at least two or three years." We do not think this need cause anxiety; during these two or three years they are being well fed, clothed, and trained; the State gets the benefit of this as well as the individuals. But it must be remembered (though sometimes forgotten by commanding officers) that during these first two or three years they are not capable of doing the work of fully grown men; and it is to be regretted that their services should be lost by discharge so soon after they have reached maturity in bodily development and skill in military training.

Of the total number of recruits finally approved during 1909—viz., 34,731—after deducting those under 18 years of age (3491), the average age was $19\frac{5}{12}$; the height was 66·5 inches; the minimum and maximum chest measurements were 33·6 and 36 inches; the range of expansion, 2·6 inches; and the weight, 130·1 pounds. All of these ratios are higher than the 10-year averages, 1899–1908, with the exception of the age, which in the decennium had averaged 20 years. These figures must be allowed to be satisfactory. The system of physical training introduced at the end of 1906 has now become general throughout the army; it is gradually progressive in easy stages, and is designed to develop the body generally, not mainly to increase muscular development, as in the former system of training. Great care is taken in the selection of the instructors and in medical supervision of the gymnastic courses. There is now a fairly general agreement among medical inspectors of recruits that of the lads discharged medically unfit within three months of enlistment it is cigarette-smoking, and not physical training, that causes their disability.

*Invaliding.*

The invaliding ratio, which was 13·26 per 1000 in 1892, rose to 29 in 1901; for the five years 1904–08 it averaged 13·73; in 1908 it was only 10·32; and in 1909 it fell to 8·65, a much lower figure than has ever before been reported. The chief causes are tuberculous diseases (1·46), nervous diseases (0·91), and valvular heart disease (0·89 per 1000). The most marked reductions have taken place in the group of digestive diseases and in syphilis. Valvular heart disease also, though one of the chief reasons for invaliding, caused only 0·89 compared with 1·57 per 1000 in the preceding

quinquennium; and disordered action of the heart only 0·29 in comparison with 0·56.

Amongst the troops serving at home those quartered in the London District always show more sickness than any others. The ratios for the whole of the troops at home have been stated above. In the London area the admissions were 677, the number constantly sick 40·3, and the invaliding 17·5 per 1000; in the Western Command, on the other hand, these ratios were only 277, 12·9, and 10·5 respectively. Comparing the different arms of the service, the Household Cavalry have the highest admission-rate (654) and the Foot Guards the highest number constantly sick (38·6). The respective figures for Infantry of the Line are 407 admissions and 23·8 constantly sick per 1000. The Foot Guards, however, show a great improvement compared with the corresponding ratios for the past five years, which were 731 admissions and 52·6 constantly sick per 1000; while the Household Cavalry are rather worse this year than their quinquennial average (650 admissions and 25·2 constantly sick per 1000). From a table that is furnished in the report, comparing the death-rates of soldiers with the rates for civilian males, aged 15 to 35, from certain diseases, the advantage appears to be generally on the side of the military. Thus, the enteric fever death-rate was 72 per 1,000,000 compared with 143 for civilians; for tubercle of lung, 273 compared with 1438, and for other tuberculous diseases 40, compared with 211. Alcoholism caused only 24 deaths per 1,000,000 in soldiers, compared with 31 in civilians. Allowance must be made for invaliding, which would discount the apparent advantage in tuberculous diseases, but would not affect enteric fever or alcoholism; these diseases are therefore less fatal in the soldier than in the civilian of similar age.

The most fatal diseases were pneumonia (0·41 death per 1000), tubercle of the lung (0·27), and valvular heart disease (0·18). The diseases causing most sickness were gonorrhœa, syphilis, and soft chancre, which together caused a constantly sick rate of 6·20 out of the total 21·72 per 1000; this, however, is an improvement on the average for 1904–08, which was 7·90. The chief diseases causing invaliding were tubercle (1·74 per 1000), diseases of the nervous system (1·70), and heart disease (1·41); of these the tuberculous group show a slight increase on the quinquennial average (1·69). In last year's report attention was drawn to the need of some coöperation between the military authorities and municipal bodies or charitable institutions possessing open-air sanatoriums, which would offer to men on their discharge from the army some prospect of that after-care and attention which is so necessary if they are to recover their places in civil life as able-bodied citizens. Unfortunately, it has not been found possible, up to the present, to devise any general scheme to this end; but for the Aldershot Command four beds are reserved in the Frimley Sanatorium for discharged soldiers, whose condition gives hope for cure or improvement, on payment of 10*s.* a week, half of which is contributed by the Soldiers and Sailors' Help Society, and half by the regiment. We think, however, that the whole cost of this sanatorium treatment, after discharge from the army, should not fall on the private (or voluntary) charitable resources of the military, whether through regimental agency or the Help Society. Most of the men invalided would become chargeable to the public sooner or later after their discharge; and it seems only fair that the public generally—that is, the civil authorities—should bear some of the burden in the way previously suggested, namely, by allotting accommodation to ex-soldiers in sanatoriums, preferably in the territorial area to which they belong. Diseases of the heart and circulatory system caused nearly as many deaths (0·32 per 1000) as the quinquennial average (0·36); but led to much less invaliding, 1·61 per 1000 compared with 3·09. This indicates the success of the measures now being taken to eliminate heart-strain, as far as possible, from the exercises of the soldier; and especially that the physical training, as now carried on, is in agreement with sound physiological teaching.

Venereal diseases caused 28·6 per cent. of the total amount of sickness; in the decennium, 1891–1900, they caused 31 per cent. The improvement appears to be very slight, but it must be remembered that the *total* sick ratio in that period was 39·52, while in 1909 it was 21·72 per 1000; there is, therefore, really a very considerable reduction in the amount of these diseases. In 1901 there were 847 men constantly sick in hospital with venereal disease, out of a force of 100,811; in 1909 there were 685 men similarly *hors de combat* out of a force of 110,492. There is no doubt that the spread of temperance among soldiers is the chief, though not the only, reason for this improvement. Great variation is seen, as always, in the incidence of these affections. In the London District they caused 160 admissions per 1000, at Aldershot 48, on manœuvres 22. The bad pre-eminence of the London District (that is, the Household Troops) is less marked than in recent years, for in 1907 there were as many as 208 admissions per 1000 for venereal disease, but it is unsatisfactory. None of the specific infectious diseases were prevalent in 1909 except influenza, which caused 18·4 admissions per 1000, but it was not of a severe type.

# PLAGUE IN RUSSIA AND IN THE NEAR AND FAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

### *Plague in Odessa.*

THE following has been the course of the plague outbreak in Odessa since the date of my last letter on this subject (published in THE LANCET of Jan. 7th, p. 59). In the week ending Nov. 5th 4 cases with 1 death occurred in the town, none in the district round. The totals had then reached 140 cases and 43 deaths. Apparently no further cases occurred in November or December, but on Jan. 11th (Dec. 29th, Old Style) 2 fresh cases were reported. Since then Odessa and neighbourhood seem to have been free from plague. It is noted that some time in November, out of 522 rats caught in the town and examined bacteriologically one was found to be plague-infected.

### *Plague in the Kirghiz Steppes.*

A large number of plague centres seem to have formed in the past few months in various parts of the Kirghiz steppes of the Astrakhan government. On the island of Kuklen, in the second arrondissement of the first *okrug* (circuit) of these steppes 6 cases of plague, all fatal, occurred between Oct. 13th and 30th (Old Style). There were no further cases here in the following week. In the Djalpak settlement (*urotchishtché*), situated in the fourth arrondissement of the second *okrug*, 15 cases of the disease with 11 deaths were recorded between Nov. 1st and 12th. In the Djalpak-Tchagyl settlement (probably the same as the one just named) 20 cases with 19 deaths had occurred by Nov. 15th. One further case was reported here on the 22nd. In the Naurzali-Tchagyl settlement, situated in the second arrondissement of the first *okrug*, 4 deaths from pneumonic plague were reported on Nov. 18th. Other reports put the figures for this place at 5 cases and 5 deaths between Nov. 10th and 17th, followed by 1 case on the 21st, which died on the 25th. In the Mueren settlement 1 fatal case occurred on Nov. 4th, and in that of Abil-Ishken (twelfth arrondissement of first *okrug*) single cases (all fatal) were seen on Nov. 9th, 11th, 14th, and 16th. In the Tchushak settlement (second *okrug*, third arrondissement), 1 person fell ill on the 23rd and died on Nov. 24th. In the Biskyz settlement (on the frontier of the second *okrug*) 10 cases of plague with 9 deaths occurred between Nov. 17th and 30th, and 2 further cases were recorded here, at a date not stated. Some time in November the disease appeared in the Boman settlement (second *okrug*, second arrondissement); at that of Kara-Syr (fifteenth arrondissement of first *okrug*), where 7 cases and 6 deaths occurred; and in that of Musrep-Tchagyl, in the sixth arrondissement of the Sarak district, where 5 cases of pneumonic plague, all fatal, were recorded. In the Kolden settlement, in the second arrondissement of the Narynsk district, 4 suspected cases with 1 death occurred on or about Dec. 12th; 1 suspected and fatal case was seen in the Kolybai settlement (sixth arrondissement of the Kamysh-Samara district) at a date not named; and 5 cases with 1 death occurred there between Dec. 10th and 13th, followed by another case on the 16th. In the Iliman settlement (third arrondissement of the second *okrug*) 1 fatal case occurred on Dec. 19th. In the Kosai settlement (second arrondissement of the second *okrug*) 5 cases and 2 deaths had occurred in the first half of December, followed

by 13 cases and 6 deaths between Dec. 17th and 25th; 2 further deaths occurred here on the 26th.

In the settlement of Ak-Tchagyl, in the district of Kamysh-Samara, 9 cases of plague with 2 deaths were recorded between Dec. 22nd and 27th; 2 further deaths occurred here on the 28th, and 4 more between that date and Jan. 3rd. At a place called Sheshekti, in the second *okrug* of the Primorsk (or Maritime) district, 2 fatal cases occurred on Dec. 16th. Finally, at Bezo-Kyzo, in the first *okrug* of the Primorsk district, 1 death from plague occurred on Dec. 22nd, and 2 cases with 1 death on the 30th; these last occurred in members of a family under cordon.

From the above rapid summary it will be seen that plague has been present in at least 17 different places in the Kirghiz steppes of the Astrakhan government, and that these places are situated in many different parts of those regions. All the dates mentioned in this paragraph are according to the Old Style.

*Plague in Transbaikalia and Manchuria.*

From telegrams published in the English papers it would seem that not only has a severe epidemic of plague established itself in Transbaikalia and in Manchuria, but that the disease in its worst form—the pneumonic—has spread thence to some of the most densely inhabited portions of China, where it has already caused a high mortality. No official news has been received here respecting the epidemic in China, but the following information has become available, from Russian official sources, concerning the outbreaks in Transbaikalia and Manchuria.

In the Chinese population in the settlement round the station of Manchuria, on the China-Oriental Railway, from the beginning of October down to Nov. 3rd (Old Style), 212 cases of pneumonic plague, 207 of which were fatal, occurred. At the Tchalainor mines 31 cases, all fatal, were recorded among Chinese labourers between Oct. 20th and Nov. 1st. Single cases had then occurred at the stations of Tchalantun, Bukheidé, Khailar, and Harbin. At the Tarbagatai mines, in Transbaikalia, 2 deaths had occurred; at Verkhneudinsk, 1 death; at Petrovsk, 4 cases and 1 death (these included the cases of Dr. Noniava and 2 sanitary employees). At this time an order was issued forbidding Chinese labourers to enter the Primorskaia (or Maritime) Province from Manchuria until the end of the epidemic, and other measures were taken. In Transbaikalia the outbreak as a whole does not seem to have been a very severe one. From Sept. 15th to Nov. 9th the totals for the province were put at 28 cases with 25 deaths. In November an increasing number of corpses of Chinese found dead in the streets was reported from Harbin; and towards the end of the month the disease was said to be causing an increasing mortality at Fu-Chia-tien, and in towns and villages situated on the trade roads between Tsitsikar and Blagoviésctchensk. In mid-December some 30 cases were daily occurring in the streets and houses of Fu-Chia-tien.

Meanwhile the disease had been causing a high mortality in the region of exploitation of the Manchuria-Oriental Railway. Between Oct. 13th and Nov. 21st 468 cases with 466 deaths had been registered here among Chinese, and 11 cases with 10 deaths among Russians. (The enormously high rate of mortality will be noticed.) Apparently the epidemic died down about this time, as the totals down to Dec. 10th were placed at only 491 cases and 488 deaths among the Chinese, and (as before) 11 cases and 10 deaths among Russians. But by some date not clearly stated, towards the end of December, these same totals were reckoned at 588 cases with 578 deaths for the Chinese and 14 cases with 13 deaths for the Russian population. At the moment of writing a still later official bulletin has come to hand, and this states that in the region above defined 154 cases of plague with 152 deaths occurred between Jan. 1st and 6th; that of these 136 cases with 135 deaths were recorded in the town of Harbin, and the rest in six other stations on the railway, and that the total numbers since Oct. 13th down to Jan. 6th had been 831 cases with 821 deaths among the Chinese, and 25 cases with 24 deaths among Europeans. Professor Zabolotny, the well-known Russian authority on plague, and Dr. Predtéchenski have been sent to the infected districts in Manchuria, with powers to organise measures for the control of what is evidently a serious epidemic of plague, apparently in its most fatal form. In this paragraph, also, all the dates mentioned are according to the Old Style.

*Plague in Batoum and Baku.*

A single suspected case was reported from Batoum on Jan. 24th. On Dec. 2nd (15th) a case also occurred in Baku; the patient, a young girl, died, and there was bacteriological proof that the disease was plague.

*Plague in Jeddah.*

The seasonal revival of plague in Jeddah has again to be reported. The first case was seen on Dec. 22nd; it was only seen after death. The patient, a native porter, had died after a six days' illness. No other case was reported until Jan. 15th, and a few further cases have occurred since, including those of two Indian pilgrims isolated on Jan. 22nd.

Constantinople, Jan. 28th.

## MEDICINE AND THE LAW.

*Medical Treatment after School Inspection: the Legal Position of Parents.*

A CORRESPONDENT calls attention to a prosecution successfully instituted at Bridgwater in December of last year against the father of a little girl attending a local elementary school in the neighbourhood. The school medical officer had found the child's sight to be very defective, and he deposed in the witness box that neglect of treatment would prove detrimental to her physical ability in several ways. In consequence of the report made by the school medical officer the defendant, described as a "groom-gardener," received notice requesting him to send his child to Bridgwater to be examined by the county oculist, the provision of spectacles being apparently the limit of the treatment contemplated. The parents, however, took no steps in the matter, and the father, who pleaded guilty before the magistrates, expressed himself as being personally quite "indifferent." He treated it as the business of his wife to which she should attend, and stated that he could not make her take the child to the oculist. The bench inflicted a fine of £2 with costs, of which none will disapprove, but the correspondent referred to suggests that the success of the prosecution may have been due to the openly expressed indifference of the father to his child's welfare, and to the neglect of both parents to take any steps whatever to remedy a source of suffering to their child, to which their notice had been called and for which a remedy was offered to them. He asks for the expression of an opinion as to what would happen in a parallel case where the parents refused to allow a child to submit to a surgical operation. Our correspondent, no doubt, has in his mind the not infrequent case of the injured workman who claims compensation for an accidental injury, the effects of which might be removed or mitigated by a surgical operation which he declines to undergo. To quote from his letter; he writes, "It would be of great interest to those, like myself, concerned in school management, to know whether, had the condition of the child necessitated operation for its adequate treatment, for instance, had it been deaf owing to adenoid vegetations, it is likely that the parent could have been successfully prosecuted under the same section[1] for failing to take steps to have such operation carried out. My own opinion is that unfortunately such a prosecution would have failed, and that in the case reported it was the admitted indifference of the parent that enabled the prosecution to be successful."

We do not recall any quite similar case brought before the High Court on appeal in which the law relating to the subject has been discussed, and definite principles laid down for the guidance of courts of petty sessions and other tribunals, but possibly other readers may have had experience of prosecutions instituted successfully or unsuccessfully without any further question being raised. In our view all such prosecutions must depend upon the facts of the individual case brought forward and upon the evidence adduced as to the necessity for the operation for the relief of suffering in the child, the certainty of its fulfilling its object, the absence of danger to the patient, the extent to which inconvenience or

[1] Children Act, 1908, Section 12.

suffering is likely to continue or increase in the absence of operative treatment, and the amount of facility at the command of the parents for obtaining such treatment. The facts of cases of the kind indicated are likely to differ widely, and the evidence adduced by the prosecution to be of varying weight. The opinions, possibly preconceived, of magistrates also may vary considerably, and to some extent must be taken into account. If we consider, for instance, the suggested example of the removal of adenoid growths, this operation may have been successfully performed in the case of a child of a magistrate, who may thus himself have been enabled to estimate the relatively small amount of pain and inconvenience entailed and the benefit likely to accrue. Naturally, his attitude towards a parent refusing to secure the performance of a similar operation upon his child would be affected, and rightly so, by his own experience. The magistrates on occasions of this kind are asked to find as a fact that the child or young person concerned has been "neglected in a manner likely to cause such child or young person unnecessary suffering or injury to his health," and a finding that he has been so neglected can only be upset by a divisional court upon the ground that there was not sufficient evidence upon which to found it. The judges are not asked on appeal to say whether or not they would have come to the same conclusion upon the evidence, but whether there is evidence upon which it might reasonably be arrived at.

The exact words of the 12th section of the Children Act are very wide, and the application of them should present little difficulty where there is proof of avoidable suffering existing or being threatened. They are, so far as they are material to the present case, words relating to other forms of cruelty being omitted: "(1) If any person over the age of 16 years who has the custody, charge, or care of any child or young person wilfully neglects such child or young person, or procures such child or young person to be neglected, in a manner likely to cause such child or young person unnecessary suffering or injury to his health (including injury to or loss of sight, or hearing, or limb, or organ of the body, and any mental derangement), that person shall be guilty of a misdemeanour, and shall be liable (*a*) on conviction on indictment, to a fine not exceeding one hundred pounds, or alternatively, or in default of payment of such fine, or in addition thereto, to imprisonment, with or without hard labour, for any term not exceeding two years; and (*b*) on summary conviction, to a fine not exceeding twenty-five pounds, or alternatively, or in default of payment of such fine, or in addition thereto, to imprisonment, with or without hard labour, for any term not exceeding six months; and for the purposes of this section a parent or other person legally liable to maintain a child or young person shall be deemed to have neglected him in a manner likely to cause injury to his health if he fails to provide adequate medical aid for the child or young person, or if being unable otherwise to provide such medical aid he fails to take steps to procure the same to be provided under the Acts relating to the relief of the poor. (2) A person may be convicted of an offence under this section, notwithstanding that actual suffering or injury to health, or the likelihood of such suffering or injury to health was obviated by the action of another person. (3) A person may be convicted of an offence under this section, notwithstanding the death of the child or young person in respect of whom the offence is committed." It will be observed that special mention is made of neglect likely to affect the sight or hearing of the child, so that the actual case of the visit to the oculist, and the suggested one with regard to adenoid growths and their removal are both within the section. Note also that it is obligatory upon the parent to take steps to provide medical aid or to procure it under the Poor-law. He is not merely to accept it when offered or brought to his door. The neglect, however, must be "wilful."

*Substantial Fines for Watering Milk.*

The defences raised by defendants in cases where the alleged adulteration of food is the subject of the prosecution against them sometimes almost provoke a smile. At the Stratford police court recently a milk-seller was summoned on two informations respectively charging him with selling milk containing 19 and 35 per cent. of added water. The suggestion made on his behalf was that the lad, 13 years of age, who was in charge of his milk cart, was so confused by the appearance of the inspector that on being asked for samples he forgot to mention that the milk was sold as skimmed milk. The possible omission to give this information in the case of customers purchasing for their own consumption appears to have been taken into consideration by the bench in imposing fines of £5 and £10, the magistrate saying that the case was the worst he had met with in an experience of 23 years.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8035 births and 5673 deaths were registered during the week ending Feb. 18th. The annual rate of mortality in these towns, which had been equal to 16·1, 16·0, and 17·6 per 1000 in the three preceding weeks, declined to 17·2 in the week under notice. During the first seven weeks of the current quarter the recorded death-rate in these towns averaged 16·2 per 1000, and corresponded to the recorded rate in London during the same period. The annual death-rates in the 77 towns during last week ranged from 8·4 in Smethwick, 9·8 in Handsworth (Staffs), 9 9 in East Ham, and 10·1 in King's Norton and in Tynemouth, to 23·2 in Plymouth, 23·4 in Oldham, 24·1 in Swansea, and 26·1 in St. Helens. The 5673 deaths from all causes in the 77 towns showed a decline of 110 from the number returned in the previous week, and included 621 which were referred to the principal epidemic diseases, against 461, 477, and 525 in the three preceding weeks; of these 621 deaths, 333 resulted from measles, 132 from whooping-cough, 64 (of infants under two years of age) from diarrhœa, 55 from diphtheria, 21 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The fatal cases of measles, which had steadily increased during the first six weeks of the current year from 160 to 249, further rose last week to 333, and caused the highest annual rates of 2·6 in Bury, 2·7 in Gateshead, 2·9 in Rochdale, 3·0 in Devonport, 4·6 in Rotherham, 4·8 in St. Helens and in Rhondda, and 7·4 in Sheffield. The deaths from whooping-cough, which had increased from 85 to 123 in the four preceding weeks, further rose last week to 132; the highest rates from this disease were 2·4 in Willesden, 2·5 in Norwich, and 4·3 in Reading. The deaths of infants under two years of age attributed to diarrhœa, which had been 47 and 55 in the two preceding weeks, rose again last week to 64, and caused a death-rate of 1·4 in Burnley. The 55 fatal cases of diphtheria showed a decline of 3 from the number returned in the previous week, and included 17 in London and its suburban districts, 6 in Liverpool, 5 in Leeds, and 3 in Northampton. The 21 fatal cases of scarlet fever were equal to the number returned in each of the two preceding weeks; 5 deaths occurred in Liverpool and 2 in Manchester. The 16 deaths referred to enteric fever showed a decline of 3 from the number in the previous week, and included 3 fatal cases in Stoke-on-Trent, and 2 each in London, Liverpool, and Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined in the 14 preceding weeks from 1882 to 1257, had increased to 1276 on Saturday last; 166 new cases of this disease were admitted to these hospitals during last week, against 129, 130, and 147 in the three preceding weeks. These hospitals also contained on Saturday last 865 cases of diphtheria, 469 of measles, 183 of whooping-cough, and 48 of enteric fever. The 1613 deaths from all causes in London last week (showing a decline of 16 from the number in the previous week) included 421 which were referred to diseases of the respiratory system, against 374, 365, and 404 in the three preceding weeks. In the 77 towns 163 deaths resulted from different forms of violence, against 178 and 187 in the two preceding weeks, and 438 inquest cases were registered. The causes of 50, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 47 smaller towns; the 50 uncertified causes of death in the 77

towns last week included 12 in Birmingham, 10 in Liverpool, 3 in St. Helens, and 3 in South Shields.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 843 births and 698 deaths were registered during the week ending Feb. 11th. The annual rate of mortality in these towns, which had steadily increased from 14·8 to 19 8 in the four preceding weeks, declined to 19·0 in the week under notice. During the first seven weeks of the current quarter the death-rate in these towns averaged 16·9 per 1000, and was 0·7 above the mean rate during the same period in the 77 English towns. The annual death-rates last week in the eight Scotch towns ranged from 13·2 and 13·7 in Aberdeen and Edinburgh to 21·1 in Greenock and 25·3 in Dundee. The 698 deaths from all causes in the eight towns last week showed a decrease of 30 from the number returned in the previous week, and included 68 which were referred to the principal epidemic diseases, against 46, 63, and 69 in the three previous weeks; these 68 deaths were equal to an annual rate of 1·9 per 1000, the highest epidemic rates being 2·2 in Glasgow and 8·9 in Leith. Of these 68 deaths from the principal epidemic diseases, 45 resulted from whooping-cough, 9 from diarrhœa, 7 from diphtheria, 4 from measles, 2 from enteric fever, and 1 from scarlet fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 14, 22, and 33 in the three previous weeks, further rose to 45 last week, of which 26 occurred in Glasgow, 13 in Leith, and 3 in Dundee. The 9 deaths attributed to diarrhœa showed a decline upon recent weekly numbers, and included 6 of infants under two years of age. The deaths from diphtheria, which had been 8, 9, and 11 in the three preceding weeks, declined last week to 7, of which 4 deaths occurred in Glasgow. Of the 4 deaths from measles, 2 were recorded in Edinburgh. The 2 fatal cases of enteric fever were registered in Glasgow, and that of scarlet fever in Greenock. The deaths in the eight towns referred to diseases of the respiratory system, which had been 117, 138, and 161 in the three previous weeks, further rose last week to 181, and were 46 above the number returned in the corresponding week of last year. The deaths resulting from different forms of violence, which had been 27 and 28 in the two preceding weeks, declined to 22 last week. Of the 698 deaths from all causes in the eight towns last week, 201, or 29 per cent., occurred in public institutions. The causes of 19, or 2·7 per cent., of the total deaths were not certified or not stated; in the 77 towns last week the proportion of uncertified causes of death did not exceed 0·9 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 600 births and 507 deaths were registered during the week ending Feb. 18th. The annual rate of mortality in these towns, which had been 19·6 and 24·1 per 1000 in the two preceding weeks, declined to 22·7 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 20·9 per 1000, whereas in the 77 largest English towns during the same period the death-rate did not exceed 16·2, and in the eight principal Scotch towns it was equal to 16·9 per 1000. The annual death-rate last week was equal to 25·5 in Dublin, 19·5 in Belfast, 25·3 in Cork, 29·7 in Londonderry, 10·9 in Limerick, and 23·4 in Waterford; in the 16 smallest of the Irish town districts the annual death-rate last week averaged 23·8 per 1000. The 507 deaths from all causes in the 22 towns last week showed a decrease of 31 on the number returned in the previous week, and included 29 which were referred to the principal epidemic diseases, against 30 and 26 in the two preceding weeks; these 29 deaths were equal to an annual rate of 1·3 per 1000, the highest epidemic rates being 2·9 in Dublin and 7·1 in Londonderry. Of these 29 deaths from the principal epidemic diseases, 11 resulted from whooping-cough, 6 from scarlet fever, 4 from diarrhœa, 3 from enteric fever, 3 from diphtheria, and 2 from measles. The deaths from whooping-cough, which had been 18, 9, and 8 in the three preceding weeks, rose to 11 last week; 6 deaths were recorded in Dublin and 5 in Londonderry. The fatal cases of measles, scarlet fever, diphtheria, and 2 of the 3 deaths from enteric fever were registered in Dublin. In 20 of the 22 town districts no death from the principal epidemic diseases was recorded last week. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 107 and 141 in the two preceding weeks, declined to 137 in the week under notice. The 507 deaths from all causes last week included 151, or 30 per cent., which occurred in public institutions. The causes of 17, or 3·4 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner; the proportion of uncertified causes last week did not exceed 0·9 per cent. in the 77 English towns, but was equal to 2·7 per cent. in the principal Scotch towns.

### VITAL STATISTICS OF LONDON DURING 1910.

In the accompanying table statistics of sickness and mortality in the City of London and in each of the metropolitan boroughs are summarised for the year 1910. The mortality figures in the table relate to the deaths of persons actually belonging to the various boroughs, and are obtained by distributing the deaths in institutions among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to a rate of 4·5 per 1000 of the population, estimated at 4,872,702 persons in the middle of last year; in the three preceding years the rates had been 8·6, 7·4, and 6·1 per 1000 respectively. Among the various boroughs the rates last year ranged from 2·6 in Hampstead, 3·1 in the City of Westminster, 3·2 in Chelsea, 3·3 in Kensington and in Stoke Newington, and 3·4 in Holborn, to 5·4 in Poplar and in Lewisham, 5·5 in Bethnal Green, 5·6 in Finsbury, 5·9 in Bermondsey, and 6·0 in Woolwich. Only 7 cases of small-pox were notified last year, against 8, 4, and 21 in the three preceding years; of these 7 cases, 2 belonged to Shoreditch and 1 each to Westminster, Islington, Poplar, Bermondsey, and Woolwich. Scarlet fever showed a markedly decreased prevalence, only 10,509 cases being notified, against 25,925, 22,072, and 17,251 in the three preceding years. Among the metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, St. Pancras, Poplar, Bermondsey, Lambeth, Battersea, Lewisham, and Woolwich. There were 9889 scarlet fever patients admitted into the Metropolitan Asylums Hospitals last year, against 23,953, 20,862, and 16,183 in the three preceding years; 1574 cases remained under treatment at the end of the year, against 4956, 3498, and 2329 at the end of the three preceding years. Diphtheria also showed a decreased prevalence last year, the number of cases notified being 5494, against 8771, 8002, and 6685 in the three preceding years. The greatest proportional prevalence of this disease occurred in Fulham, Islington, Finsbury, Bethnal Green, Southwark, Bermondsey, Greenwich, and Lewisham. The Metropolitan Asylums Hospitals contained 827 diphtheria patients at the end of last year, against 1168, 1241, and 904 at the end of the three preceding years; the number of new cases admitted, which had been 7303, 6797, and 5799 in the three preceding years, declined to 4882 last year. Enteric fever was rather more prevalent than it had been in the preceding year; the number of notified cases of this disease, which had been 1394, 1357, and 1042 in the three preceding years, rose again to 1284 last year. This disease was proportionally most prevalent in Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals during the year was 745, against 768, 708, and 539 in the three preceding years; 88 cases remained under treatment at the end of the year, against 119, 147, and 62 at the end of the three preceding years. The greatest proportional prevalence of erysipelas occurred in Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Deptford. The 292 cases of puerperal fever notified during the year included 29 belonging to Stepney, 20 to Fulham, 20 to Islington, 20 to Wandsworth, and 19 to Lambeth. Of the 115 notified cases of cerebro-spinal meningitis 16 belonged to Islington, 10 to St. Pancras, and 7 each to Paddington, Fulham, Bethnal Green, and Stepney.

During the year under notice the deaths of 61,756 London

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1910.

*(Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1910. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | |
| **LONDON** | 4,872,702 | 7 | 10,509 | 5494 | 3 | 1284 | 16 | 292 | 3982 | 115 | 21,702 | 4·5 | — | 1980 | 214 | 434 | 1362 | — | 196 | 4 | 1368 | 5558 | 1·1 | 61,756 | 13·3 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington | 153,004 | — | 261 | 120 | — | 40 | — | 9 | 100 | 7 | 537 | 3·5 | — | 69 | 7 | 9 | 32 | — | 4 | — | 43 | 164 | 1·1 | 1796 | 12·6 |
| Kensington | 184,635 | — | 263 | 155 | — | 37 | 3 | 10 | 142 | 2 | 612 | 3·3 | — | 53 | 1 | 16 | 32 | — | 5 | — | 34 | 141 | 0·8 | 2190 | 12·8 |
| Hammersmith | 127,413 | — | 341 | 165 | — | 31 | 2 | 9 | 62 | 2 | 612 | 4·8 | — | 70 | 7 | 22 | 26 | — | 4 | — | 41 | 170 | 1·3 | 1548 | 12·7 |
| Fulham | 181,282 | — | 354 | 257 | — | 18 | 2 | 20 | 112 | 7 | 770 | 4·3 | — | 65 | 7 | 14 | 60 | — | 2 | — | 56 | 204 | 1·1 | 1908 | 11·1 |
| Chelsea | 75,457 | — | 120 | 83 | — | 16 | — | 3 | 20 | — | 242 | 3·2 | — | 19 | — | 4 | 12 | — | 2 | — | 12 | 49 | 0·7 | 950 | 13·1 |
| City of Westminster | 167,233 | 1 | 248 | 149 | — | 48 | — | 6 | 61 | 2 | 515 | 3·1 | — | 21 | 4 | 10 | 18 | — | 6 | — | 19 | 78 | 0·5 | 1894 | 12·8 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone | 125,195 | — | 208 | 127 | 1 | 22 | — | 4 | 117 | 2 | 481 | 3·9 | — | 28 | 7 | 9 | 44 | — | 6 | — | 22 | 116 | 0·9 | 1600 | 13·6 |
| Hampstead | 95,729 | — | 144 | 51 | — | 20 | — | 2 | 32 | 2 | 251 | 2·6 | — | 15 | 2 | 5 | 11 | — | 3 | — | 8 | 44 | 0·5 | 822 | 9·7 |
| St. Pancras | 237,792 | — | 681 | 263 | — | 63 | — | 13 | 191 | 10 | 1221 | 5·1 | — | 140 | 17 | 21 | 96 | — | 4 | — | 52 | 330 | 1·4 | 3261 | 14·4 |
| Islington | 353,356 | 1 | 731 | 473 | 1 | 89 | 1 | 20 | 213 | 16 | 1545 | 4·4 | — | 168 | 11 | 33 | 124 | — | 17 | 1 | 78 | 432 | 1·2 | 4529 | 13·3 |
| Stoke Newington | 54,838 | — | 85 | 53 | — | 10 | — | 3 | 31 | 1 | 183 | 3·3 | — | 11 | 1 | 2 | 7 | — | 2 | — | 8 | 31 | 0·6 | 600 | 11·5 |
| Hackney | 239,979 | — | 403 | 190 | — | 64 | — | 16 | 254 | 6 | 933 | 3·9 | — | 66 | 5 | 8 | 61 | — | 10 | — | 52 | 202 | 0·8 | 2796 | 12·2 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn | 53,142 | — | 68 | 45 | — | 25 | — | — | 42 | 1 | 181 | 3·4 | — | 14 | — | 4 | 16 | — | 5 | — | 10 | 49 | 0·9 | 795 | 16·1 |
| Finsbury | 94,578 | — | 165 | 150 | — | 30 | — | 7 | 170 | 4 | 526 | 5·6 | — | 66 | 4 | 21 | 36 | — | 4 | 1 | 50 | 182 | 1·9 | 1653 | 18·1 |
| City of London | 17,132 | — | 21 | 20 | — | 4 | — | 1 | 16 | 1 | 63 | 3·7 | — | — | 1 | — | 2 | — | 2 | — | 3 | 8 | 0·5 | 265 | 17·0 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch | 114,387 | 2 | 213 | 131 | — | 48 | — | 8 | 130 | 5 | 537 | 4·7 | — | 84 | 4 | 14 | 46 | — | 8 | — | 61 | 217 | 1·9 | 1905 | 17·5 |
| Bethnal Green | 131,579 | — | 236 | 182 | — | 108 | 1 | 13 | 174 | 7 | 721 | 5·5 | — | 59 | 9 | 20 | 35 | — | 18 | — | 51 | 192 | 1·5 | 2010 | 15·5 |
| Stepney | 314,379 | — | 554 | 404 | — | 118 | — | 29 | 381 | 7 | 1493 | 4·8 | — | 103 | 12 | 29 | 114 | — | 15 | — | 141 | 414 | 1·3 | 4302 | 14·3 |
| Poplar | 172,432 | 1 | 470 | 175 | 1 | 62 | — | 15 | 209 | 3 | 936 | 5·4 | — | 42 | 12 | 21 | 84 | — | 13 | — | 87 | 259 | 1·5 | 2609 | 15·7 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark | 211,832 | — | 419 | 284 | — | 54 | — | 16 | 244 | 3 | 1020 | 4·8 | — | 226 | 9 | 35 | 60 | — | 7 | — | 90 | 427 | 2·0 | 3360 | 16·6 |
| Bermondsey | 127,238 | 1 | 364 | 210 | — | 38 | — | 6 | 130 | 5 | 754 | 5·9 | — | 145 | 14 | 19 | 43 | — | 4 | — | 85 | 310 | 2·4 | 2240 | 18·1 |
| Lambeth | 327,074 | — | 908 | 327 | — | 78 | 1 | 19 | 193 | 5 | 1531 | 4·7 | — | 122 | 22 | 26 | 53 | — | 18 | — | 80 | 321 | 1·0 | 4091 | 12·9 |
| Battersea | 188,222 | — | 488 | 227 | — | 45 | 2 | 16 | 170 | 5 | 953 | 5·1 | — | 74 | 7 | 12 | 51 | — | 7 | 1 | 57 | 209 | 1·1 | 2128 | 12·1 |
| Wandsworth | 305,838 | — | 681 | 286 | — | 54 | — | 20 | 182 | 5 | 1228 | 4·0 | — | 43 | 11 | 13 | 70 | — | 9 | — | 39 | 185 | 0·6 | 3093 | 10·7 |
| Camberwell | 286,058 | — | 511 | 272 | — | 76 | 2 | 7 | 219 | 2 | 1089 | 3·8 | — | 136 | 10 | 22 | 70 | — | 9 | — | 61 | 308 | 1·1 | 3440 | 12·5 |
| Deptford | 119,642 | — | 301 | 130 | — | 24 | 2 | 2 | 144 | 1 | 604 | 5·1 | — | 59 | 3 | 11 | 48 | — | 5 | — | 50 | 176 | 1·5 | 1666 | 14·7 |
| Greenwich | 112,935 | — | 171 | 168 | — | 20 | — | 5 | 89 | 1 | 454 | 4·0 | — | 48 | 3 | 10 | 57 | — | 3 | — | 37 | 158 | 1·4 | 1305 | 11·8 |
| Lewisham | 164,899 | — | 573 | 224 | — | 29 | — | 5 | 61 | 2 | 894 | 5·4 | — | 12 | 12 | 20 | 29 | — | 3 | — | 24 | 100 | 0·6 | 1585 | 10·0 |
| Woolwich | 135,422 | 1 | 526 | 172 | — | 10 | — | 8 | 90 | 1 | 808 | 6·0 | — | 22 | 12 | 4 | 25 | — | 1 | 1 | 17 | 82 | 0·6 | 1415 | 11·2 |
| Port of London | — | — | 1 | 1 | — | 3 | — | — | 3 | — | 8 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

residents were registered, being equal to a corrected death-rate of 13·3 per 1000, against 15·2, 14·4, and 14·6 in the three preceding years, the average rate for the ten years 1900–09 being 16·4 per 1000. Among the several boroughs the lowest death-rates last year were 9·7 in Hampstead, 10·0 in Lewisham, 10·7 in Wandsworth, 11·1 in Fulham, 11·2 in Woolwich, 11·5 in Stoke Newington, and 11·8 in Greenwich; and the highest rates 16·1 in Holborn, 16·6 in Southwark, 17·0 in the City of London, 17·5 in Shoreditch, and 18·1 in Finsbury and in Bermondsey. The deaths from all causes included 5558 which were referred to the principal infectious diseases; of these, 1980 resulted from measles, 214 from scarlet fever, 434 from diphtheria, 1362 from whooping-cough, 196 from enteric fever, 4 from ill-defined pyrexia, and 1368 from diarrhœa, but not any from small-pox or from typhus fever. These 5558 deaths were equal to a rate of 1·1 per 1000, the death-rate from the same diseases in the three preceding years being 1·4, 1·4, and 1·3 per 1000, and averaging 1·8 per 1000 for the ten years 1900–09. The death-rates last year from these diseases ranged from 0·5 in the City of Westminster, in Hampstead, and in the City of London, and 0·6 in Stoke Newington, Wandsworth, Lewisham, and Woolwich, to 1·5 in Poplar and in Deptford, 1·9 in Finsbury and in Shoreditch, 2·0 in Southwark, and 2·4 in Bermondsey. The 1980 deaths from measles were 100 in excess of the corrected average number for the five preceding years; this disease was proportionally most fatal in Hammersmith, St. Pancras, Finsbury, Shoreditch, Southwark, and Bermondsey. The 214 fatal cases of scarlet fever were 329 fewer than the corrected average number; the greatest proportional mortality from this disease occurred in St. Pancras, Bethnal Green, Poplar, Bermondsey, Lambeth, Lewisham, and Woolwich. The 434 deaths from diphtheria were 248 below the corrected average number; the highest death-rates from this disease were recorded in Hammersmith, Finsbury, Bethnal Green, Southwark, and Bermondsey. The 1362 fatal cases of whooping-cough showed a slight decline from the corrected average number; the greatest proportional mortality from this disease occurred in St. Pancras, Finsbury, Shoreditch, Stepney, Poplar, Deptford, and Greenwich. The 200 deaths referred to "fever" were 26 fewer than the corrected average number for the five preceding years; the highest "fever" death-rates were recorded in Holborn, the City of London, Shoreditch, Bethnal Green, and Poplar. The 1368 fatal cases of diarrhœa were equal to only one-half of the corrected average number; this disease was porportionally most fatal in Finsbury, Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Deptford. In conclusion, it may be stated that the aggregate mortality in London last year from these principal infectious diseases was 25·6 per cent. below the average for the five preceding years.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointment has been notified:—Surgeon: G. P. Adshead to Haslar Hospital.

### ARMY MEDICAL SERVICE.

Colonel Thomas F. MacNeece, on completion of four years' service in his rank, retires on retired pay (dated Feb. 16th, 1911). Lieutenant-Colonel Henry H. Johnston, C.B., from the Royal Army Medical Corps, to be Colonel, vice T. F. MacNeece (dated Feb. 16th, 1911).

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Richard E. R. Morse retires on retired pay (dated Feb. 18th, 1911).

The under-mentioned to be Lieutenants (on probation) (dated Jan. 27th, 1911): Benjamin Biggar, James Dunlop Kidd, Charles Morgan Finny, Gordon Wilson, William Struan Robertson Steven, Edward Geoffrey Stayner Cane, William Arthur Frost, Lieutenant William Thomson Graham (from the Royal Army Medical Corps Special Reserve), Francis Aidan Robinson, Douglas Reynolds, John Sutherland Levack, Pierce Morgan Joseph Brett, Patrick Hayes, Lieutenant Thomas Alexander Weston (from the Royal Army Medical Corps Special Reserve), Walter Bisset, Tom Chamney Russell Archer, William Lionel Evelyn Fretz, and Charles Douglas Kingsley Seaver.

The under-mentioned Lieutenants are seconded under the provisions of Article 300, Royal Warrant for Pay and Promotion, 1909 (dated Jan. 27th, 1911): Benjamin Biggar, John S. Levack, and Thomas A. Weston.

Colonel H. H. Johnston, C.B., from the Curragh, has been appointed Administrative Medical Officer at Chatham in succession to Colonel T. F. MacNeece. Colonel D. Wardrop, C.V.O., has been appointed House Governor and Medical Superintendent of the Convalescent Home for Officers at Osborne, in succession to Lieutenant-Colonel C. R. Kilkelly, C.M.G., M.V.O., resigned. Lieutenant-Colonel J. A. Jones has been selected for appointment as an Administrative Medical Officer of the Welsh Territorial Division, vice Colonel P. E. Hill, resigned. Lieutenant-Colonel G. F. Gubbin, on completion of a tour of service in India, has been posted to the Dublin District. Lieutenant-Colonel S. G. Allen, from the London District, has taken up duty at Gibraltar. Lieutenant-Colonel L T. M. Nash has been transferred from Hyderabad, Sind, to the Station Hospital at Karachi, relieving Lieutenant-Colonel R. L. R. Macleod, who has been posted to Aden. Major H. V. Prynne has taken over duty as Medical Officer in Charge of the Royal Military Academy at Woolwich, vice Major G. A. Moore, whose tenure of the appointment has expired. Major C. A. Young has been selected for appointment as Staff Officer to the Administrative Medical Officer of the Welsh Division at Shrewsbury, with effect from April 1st next. Major C. G. Spencer, from Queen Alexandra's Military Hospital, London, has taken up the appointment of Specialist in Advanced Operative Surgery at York. Major A. E. Thorp, from Tidworth Park, has joined for duty at Pretoria. Major J. F. Burke has been transferred from Lancaster to Falmouth. Major M. D. Erskine has been selected for appointment as Staff Officer to the Administrative Medical Officer of the Lowland Division. Major John M. Buist has taken over duty at Pontypridd from the Royal Victoria Hospital, Netley Abbey. Major J. S. Gaillie has been appointed Specialist in Dermatology and Venereal Diseases to the Sixth (Poona) Division. Captain A. W. Sampey, from Colchester, has taken over medical charge of the staff and families at Warley. Captain E. J. H. Luxmoore, on return from India, has been appointed for duty at the Military Hospital, Dover. Captain W. F. Tyndale, C.M.G., from the Curragh, has been posted to Dublin. Captain L. Bousfield has been transferred from Falmouth to Devonport. Captain D. O. Hyde, at present serving in Dublin, has been selected for appointment as Staff Officer to the Administrative Medical Officer of the West Riding Division at York, with effect from April 1st next. Captain A. McMunn has taken up duty at Portobello Barracks, Dublin. Captain S. M. Adye-Curran has taken over charge of the Brigade Research Laboratory at Sialkot. Captain D. P. Watson, from Pembroke Dock, has joined at Lancaster. The following officers (lieutenants) have, on arrival in India, been posted to Rawal Pindi to undergo a special course of instruction in Indian Sanitation: D. H. C. MacArthur, H. Gall, A. W. Byrne, and T. J. Mitchell. Lieutenant C. H. O'Rorke, from Newbridge, has taken up duty at the Curragh. Lieutenant J. A. Manifold has been transferred from Piershill to Fort George. Lieutenant J. B. Hanafin, from Sialkot, has been posted to Kalabagh. Lieutenant E C. Lambkin, from Windsor, has joined for duty at the Guards Depôt, Caterham.

### INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. R. Adie, Bengal Presidency, has been placed on special duty in connexion with the investigation of malarial fevers in India. Lieutenant-Colonel J. K. Close has arrived home on leave of absence from Bombay. Major E. Ludlow Perry has been placed at the disposal of the Sanitary Commissioner with the Government of India. Major A. H. Moorhead, Bengal, and Major J. C. H. Leicester, civil surgeon of Simla, have arrived home on leave of absence from India. Major F. N. Windsor has been transferred from Rangoon to Calcutta as Chemical Examiner. Major G. McI. C. Smith has been appointed Civil Surgeon at Shapur in succession to Captain W. W. Leudwine. Captain D. N. Anderson has been granted six months' extension of his leave on medical certificate by the Secretary of State for India. Captain T. F. Owens, chemical examiner and bacteriologist to the Government of Burma has been transferred for temporary inspection duty to Madras. Captain C. F. Weinman has been appointed to

officiate as Resident Physician at the Medical College Hospital, Calcutta, during the absence on deputation of Captain C. J. Coppinger. Captain C. A. F. Hingston, late medical officer of the 76th Punjabis, has been selected for duty in the Madras Presidency. Captain N. M. Wilson has been appointed Agency Surgeon at Meshed and Assistant to the Agent at Khorasan by the Foreign Department of the Government of India. Captain A. B. Fry has been appointed to act as an additional Deputy Secretary to the Commissioner in Bengal in connexion with the investigation of Malarial Fevers in India. Captain G. D. Franklin, Captain F. O. D. Fawcett, and Captain D. Munro have arrived home on leave of absence from India.

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

2nd Highland Field Ambulance, Royal Army Medical Corps: Major Alexander Ogston, from the 1st Highland Field Ambulance, Royal Army Medical Corps, to be Major (dated May 22nd, 1910).

2nd London (City of London) Field Ambulance, Royal Army Medical Corps: Frederic Morres to be Lieutenant (dated Dec. 10th, 1910).

1st Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant Ernest A. Boxer resigns his commission (dated Feb. 18th, 1911).

1st Northumbrian Field Ambulance, Royal Army Medical Corps: Lieutenant Frederick G. Armstrong resigns his commission (dated Feb. 18th, 1911).

*Attached to Units other than Medical Units.*—Lieutenant Wilfred E. Alderson to be Captain (dated Oct. 26th, 1910). Lieutenant Frederick K. Smith to be Captain (dated Nov. 1st, 1910). Lieutenant-Colonel Duncan W. Currie resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Feb. 18th, 1911).

### DEATHS IN THE SERVICES.

The death of Charles Alexander MacMunn, M.D. Dub., at the age of 58 years, is announced. He took part in the South African War 1899–02, and was appointed by Lord Roberts as Staff Officer on the commission which inquired into the administration of the medical service during the war. He was medical attendant to Lord Roberts, was mentioned in despatches, and received the Queen's medal with three clasps. He was formerly colonel commandant of the branch of the Royal Army Medical Corps (Territorials) which he founded at Wolverhampton, and he also acted as brigade surgeon of the North Midland Division of the Territorial Force. He was a surgeon-lieutenant-colonel of the Army Medical Reserve, and held the Jubilee medal, the Volunteer long service decoration, and the Coronation medal.—Surgeon-Lieutenant-Colonel Henry Frank Hensman, C.M.G., late 1st Life Guards, at Rodbaston, Penkridge, Staffordshire, on Feb. 21st, aged 72 years. He entered the service as assistant surgeon in 1862 and retired in 1894. He served in the Umbeylu campaign on the North-west Frontier of India in 1863–4, and in the South African war in 1899–1900 (promoted colonel, mentioned in despatches, and received the C.M.G.). He was an Honorary Associate of the Order of St. John of Jerusalem.

### MEASLES AT THE NAVAL COLLEGES.

Replying to a question by Mr. W. T. Wilson in the House of Commons on Feb. 21st, Mr. McKenna said that the Admiralty had no reason to suppose that the firms employed by the parents of naval cadets to make uniforms did not take proper precautions for the protection of their customers, or that infectious disease had ever been introduced into the colleges by infected uniforms.

### THE RED CROSS IN THE FRANCO-GERMAN WAR.

Although some 40 years have passed away since the Franco-German war, the memories of 1870–71 still remain strong in the minds of those who remember the war, and cannot be recalled without a thrill of emotion by those who took part in it. The recollections of the medical side of the campaign, more especially as seen from the German lines, which Mr. Henry Rundle[1] has republished in book form, much of the matter for the small volume having already appeared in the *St. Bartholomew's Hospital Journal*, will be read from first page to last with increasing interest. Starting with a brief sketch of the events which led up to the quarrel between France and Germany, he describes how he, together with other volunteers, set out for the seat of war under the auspices of the Red Cross Society, and the part they played in ministering to the sick and wounded. Though the war was brief, its horrors were sufficiently great, but Mr. Rundle describes them without in any way harrowing the feelings of his readers. The book is well printed on thick paper, the type is large, the illustrations are good, and there is an introductory note by Professor Howard Marsh. Members of the various voluntary aid societies now being formed throughout the country will read this book with profit, as it practically illustrates some of the work of the Red Cross, "the one link that remains unbroken between nations" when wars arise. The profits on the sales of the book will be given to the building fund of the Nurses' Homes at the Royal Portsmouth Hospital, which is to be the Portsmouth memorial to King Edward VII.

At a meeting held at Truro on Feb. 18th for the purpose of forming a branch of the British Red Cross Society, Inspector-General A. W. May, R.N., said that Cornwall was far behind the rest of the country in the matter of voluntary aid associations.

[1] With the Red Cross in the Franco-German War: Some Reminiscences by Henry Rundle, F.R.C.S. London: Werner Laurie. Pp. 90. Price 2*s.* 6*d.* net.

# Correspondence.

"Audi alteram partem."

## THE CLIMATIC ADAPTATION OF THE IMMIGRANT.

*To the Editor of* THE LANCET.

SIR,—Your annotation on the above subject with reference to Major Woodruff's article in the *Eugenics Review* moves me to offer some comments. In a paper I read at the British Medical Association annual meeting in 1910 I traced the evolution of the blonde Nordic type, showing that, by reason of its development, its postulates for vigorous health are comparative dryness of soil and climate, plenty of elbow-room, a bright summer, and a frosty rather than a rainy winter.

Tacitus, in his celebrated treatise on the "Germans" (i.e., the various tribes of Nordic race), remarks: "It is well known that none of the German nations inhabit cities or even admit of contiguous settlements. They dwell scattered and separate, as a spring, a meadow, or a grove may chance to invite them. Their villages are laid out, not like ours in rows of adjoining buildings, but every one surrounds his house with a vacant space." This passage is of interest in view of the well-ascertained inability of blondes to adapt themselves to urban existence at the present day. As regards their susceptibility to sunlight, I have been making observations on this point for some years, and am convinced that so far from it having a deleterious effect on them they need plenty, provided it be not associated with tropical heat or great humidity.

The most popular holiday resorts of our upper classes, among whom the blonder British types are mostly found, are the east coast in summer, the high Alps in winter, the latter evidently ministering to some physiological need. The purest blonde types are found round the shores of the Baltic, and the climatic conditions prevailing there can be taken as a model for the requirements of this race. It is notable that the south-west of Norway, where there is a pelagic climate with high rainfall, is peopled by a race closely resembling that of the central mountain ranges of Europe—the Alpine type. Similarly, in Holland the brunets, are found on the damper levels west of the Zuyder Zee and in the cities, the blondes predominating in Friesland and other eastern districts. This is well shown in a map in Professor Ripley's "Races of Europe."

The dominant Australian type, the "Cornstalk," familiar to us in the Antipodean athletes, cricketers, &c., who visit England from time to time, is "Nordic" in type, the freer open-air life and dry climate favouring this race. The Boer is also mainly a Nordic with a strain of darker races, and here again the climate of the veldt presents most, if not all, of the requisite conditions. The Canadian plains also should provide a favourable environment for immigrants of

fair complexion, and such information as I have been able to obtain tends to confirm this opinion.

It is, however, unnecessary to go so far afield as the colonies to study the effects of migration. It confronts us at our very doors. The British people is largely a migrated community not yet fully adapted to its environment. When, however, the greater migrations into this country ended with the Normans, and local communities of mixed origin settled down into pastoral and agricultural pursuits, local types were gradually evolved through the circumscribed character of the said communities. These local types were, so to speak, specialised for particular climatic and social conditions, a variety of factors determining the preponderance of one or other racial type in surviving individuals.

In this way considerable progress must have been made towards a natural equilibrium of adaptation. At the beginning of the industrial era we were probably the most virile people in Europe. The rise of industrialism, however, together with greater facilities of transit, has signalised the disintegration of rural communities, the dislocation of rural types, and their migration into the cities, where the aggregation of mixed elements has been subjected to the stress of natural selection in a severe form pending the evolution of an industrial type.

Major Woodruff's suggested investigation among the "failures" has much to recommend it, but the difficulty lies in obtaining the coöperation of a sufficient number of adequately trained observers. When similar investigations have been attempted trouble has constantly arisen from disagreement as to standards, criteria, &c., and the inability to procure uniformly accurate returns. Your annotation closes with the suggestion that "the production of a higher mental type depends probably, at any rate in great degree, on first acquiring a physique perfectly adapted to its climatic environment." But surely the human brain has achieved its extraordinary development through man's long contention with environments to which he was *not* perfectly adapted, having left the regions of his origin to spread himself over the earth. It is only when he is crushed by too severe or sudden a change that he degenerates.

I am, Sir, yours faithfully,

Hampstead, N.W., Feb. 20th, 1911. J. S. MACKINTOSH.

## A COMBINATION TEST FOR COLOUR VISION.

*To the Editor of* THE LANCET.

SIR,—Some of your readers may remember seeing an article which I published in THE LANCET of July 15th, 1893, with this title. This article described a lantern which I had brought out, and which in many particulars anticipated the lantern which Dr. F. W. Edridge-Green described in his very interesting Hunterian lectures on Feb. 1st and 3rd.

My telechrome, as it is called, consists of an apparatus in which six colours—yellow, blue, pale green, signal-green, rose, and red—are shown by transmitted light to the patient through two apertures (one at a time, of course). One of these apertures is the perspective, when seen at 6 metres, of a 6-inch lamp at 100 yards; the other of the same lamp at 2000 yards. With the exception of purple, which I did not consider necessary, the colours are almost identical, it would appear, with those of Dr. Edridge-Green's.

My test possesses two points, however, which I think have an advantage over Dr. Edridge-Green's. The first is that the illumination can be readily varied, and this is important; while the second point is that the reflected colours from, say, a set of Holmgren's wools are shown to the patient at the same time—and he is required to compare the luminous colours of the telechrome with the non-luminous colours of the wools. If he should be faulty in either case the test detects the fact.

In other respects the telechrome may be used much as Dr. Edridge-Green uses his lantern. I also employ a "fogging" glass—and originally had a neutral tint modifier as well, but discarded it eventually, as I found that simple ground glass was apparently quite sufficient. May I add in conclusion that my telechrome has been used regularly at the Admiralty for many years, with (I am told) excellent results? Staff-Surgeon Preston, R.N., spoke very favourably of it upon the Commission on Colour Vision in 1892—as may be seen in the report of that committee published as a Blue-book—and it has continued to be in use ever since.

I am, Sir, yours faithfully,

A. ST. CLAIR BUXTON,

Consulting Surgeon to the Western Ophthalmic Hospital.

PS.—An illustrated leaflet on the telechrome may be obtained from Messrs. Curry and Paxton.

Mansfield-street, W., Feb. 16th, 1911.

## GIRLS' SCHOOLS, GAMES, AND NEURASTHENIA.

*To the Editor of* THE LANCET.

SIR,—It seems to me that Dr. Robert Jones has, in his letter in THE LANCET of Feb. 4th, to use a homely but expressive metaphor, got the wrong sow by the ear. It is true that in accounting for neurasthenia and disinclination for domestic life in girls educated in high-class schools, he mentions two factors—the nature of their studies and the nature of their games—but his letter is subsequently devoted wholly to inveighing against the latter. Now, if neurasthenia and disinclination for domestic life are particularly prevalent among this class of girls, I contend that it is more likely to be due to the first factor. Among the ancient Greeks, a people noted for even balance between and perfection of mind and body, the women were trained in gymnastics, and particular importance was attached to ball games. But is it among such girls, whose splendidly improved physique is the constant theme of all sufficiently long-lived observers, that neurasthenia, at any rate, is most prevalent? My experience is that it is among such a class as Board School mistresses of inferior physique, who have been exposed to severe mental competition, without the time and opportunity for games, that it is more often to be found.

I am, Sir, yours faithfully,

GILBERT E. MOULD.

The Grange, near Rotherham, Feb. 9th, 1911.

## EYE-STRAIN IN RELATION TO GENERAL HEALTH.

*To the Editor of* THE LANCET.

SIR,—In the article on the above-mentioned subject, contributed to this week's LANCET by Dr. James Hinshelwood, I find the following: "In fact, my experience is that the small amounts of astigmatism give rise to symptoms of discomfort more frequently than the high degrees. The explanation, I think, is that a person with a high degree of astigmatism makes no effort to see better, as his vision is so defective, *but that the smaller degrees of astigmatism, only causing a slight blurring, induce the patient to make a continuous accommodative effort to counteract it* and get clear images, and hence cause continuous ciliary strain." I do not wish, in criticising a very interesting paper, to be captious, but I certainly demur to that part of the extract I have italicised. The inference here plainly is that certain isolated fibres of the ciliary muscle are capable of independent action, so that a static corneal astigmatism can be neutralised by a dynamic lenticular astigmatism. The ciliary muscle (so far as its meridianal fibres are concerned) is one muscle controlled by one centre and not several muscles controlled by several centres. This being so, how can one part act independently of other parts? Will Dr. Hinshelwood kindly inform your many ophthalmic readers upon what recent investigations he bases his statement?

I am, Sir, yours faithfully,

London, Feb. 18th, 1911. KENNETH CAMPBELL.

## THE HYPERÆMIA TREATMENT OF UNUNITED FRACTURE.

*To the Editor of* THE LANCET.

SIR,—I am led by Mr. A. E. Barker's interesting narrative in THE LANCET of Feb. 4th, giving a series of cases occurring in his practice in which the hyperæmia treatment of ununited fracture was strikingly successful, to relate the following example of its application.

A middle-aged gentleman, the victim of melancholia, leaped from his bedroom window, a height of 30 feet, falling on the lawn, and striking in his fall his left forearm on the

edge of a garden box. Simple fracture of both bones midway between elbow and wrist was his only injury. Splints were applied from above the elbow to the finger-tips. Eight weeks later there was no sign of bony union, the lower segment rocking flailwise on the upper. The only change of treatment now made was the application, morning and evening, for three hours at a time, of a broad elastic band about the upper arm, maintained at such tension as to induce flushing and turgor, without œdema or pain. Within three weeks the solidarity of the forearm was restored and the fragments of each bone were found to be reunited.

In this case the methods advocated by Lucas-Championnière were not employed at any stage of the treatment, not that they were undervalued, but because the partial disablement of this suicidal patient so sensibly relieved the cares of the nurses, and justified such a relaxation of the restraints imposed upon the sufferer, that there was no strong motive for hastening the processes of repair. If the omission of these methods may help to account for the failure of bony union in the first eight weeks, it may fairly be argued that their continued omission during the three weeks of Bier's treatment speaks strongly in favour of induced hyperæmia.

I am, Sir, yours faithfully,

S. N. BRUCE, M.R.C.S. Eng.

Queensborough-terrace, W., Feb. 16th, 1911.

## CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

*To the Editor of* THE LANCET.

SIR,—While Professor Waller might have been justified (THE LANCET, Feb. 18th, p. 470) in presuming my ignorance of the statement made regarding the discoveries of Sir Charles Bell in his "Introduction to Human Physiology," he is under a misapprehension when he presumes my ignorance of the original works of Sir Charles Bell. Professor Waller must forgive me if I refuse to accept a quotation from his well-known text-book as authoritative. I do not recollect any statement by Sir Charles Bell in either the "Idea of a New Anatomy of the Brain" or in the paper in the Philosophical Transactions of 1821 which justifies Professor Waller's quotation that Sir Charles Bell "inferred that the anterior or 'cerebral' roots are motor and sensory and the posterior or cerebellar roots serve to govern vital actions." Before awakening the long-dead discussion regarding the priority of Magendie, whose claims were ardently advocated in 1822 by a former and somewhat unfriendly pupil of Bell's —Professor H. Mayo—it would be well for Professor Waller to quote, not from his own works, but from the original works of the author in dispute, so that readers of THE LANCET may form an unbiassed opinion as to the nature and time of Sir Charles Bell's discoveries.

I am, Sir, yours faithfully,

A. KEITH.

Royal College of Surgeons of England, Feb. 18th, 1911.

## THE SANITARY OFFICERS (OUTSIDE LONDON) ORDER, 1910.

*To the Editor of* THE LANCET.

SIR,—This important document, dated Dec. 13th, 1910, reached the local sanitary authorities concerned on Dec. 16th, 1910. It was accompanied by a circular dated Dec. 14th, 1910, and a memorandum vaguely dated "December, 1910." Throughout the Order the term "the Council" replaces that of "the Sanitary Authority," which was used in the Orders of March, 1891, which Orders are hereby rescinded. The Order came into force on Jan. 1st of this year, except Article X., which does not do so until April 1st, 1911. It is addressed to the councils not only of "municipal boroughs and other urban districts," but also to "the councils of the several rural districts" in England and Wales.

This new Order is not meeting with a cordial reception from medical officers of health or sanitary inspectors because, whilst making alterations in a few petty details, the great opportunity has been missed to rectify the mistakes and omissions of the old Orders. The medical officer of health or sanitary inspector who is too zealous or energetic is still left to the mercy of his laggard council, who can subject him to the indignity and risks of annual re-election as of yore. He now holds his important office only on tenure equivalent to an ordinary house tenancy. No qualification by examination is yet asked for from the candidates for inspectors' posts. So we shall still see blacksmiths, bankrupt farmers, corn dealers, &c., filling these appointments, where special knowledge of their work is absolutely necessary. Men who have studied their subject and proved their knowledge before the examiners of the Sanitary Inspectors' Board or the Royal Sanitary Institute will have no chance against the candidate who has local influence or, perhaps, is himself a member of the council requiring an inspector.

The Order does not define the municipal status of the medical officer, although the Circular states that "the inspector of nuisances, *as a rule*, should act under the supervision of the medical officer of health, who must be regarded as the head of the Public Health Department of the Council." (The italics are mine.) In other particulars the Order and the Circular are contradictory. This may be due to the haste with which the new Order was devised. Thus Article XX. (14) orders "that the inspector shall, if directed by the M.O.H.," &c.; the Circular says, "Article XX. (14) requires the officer, if so directed by the Council," &c. Which is the correct version? Again, Article XX. (16) of the Order says that the inspector shall furnish the medical officer of health, as soon as practicable after Dec. 31st in each year, particulars of the work he has done during the year; the Circular says, "By subclause 16 the inspector is to make an annual report to the Council on the work performed by him during the year." Which are we to stand by—the terms of the Order or the interpretation of the Order by the Circular? In the preamble (p. 2) of the Order the first word "county" in the penultimate line is a mistake for "municipal"—another specimen of hasty revision!

Of course, the Order places fresh duties on the officers concerned (see Articles XIX. (7), (13), (15), and XX. (14), (15), (16)), but by Article XIX. (14) the medical officer of health is spared the trouble of referring in his annual report to his council and the Local Government Board as to offensive trades, factories, and workshops in his district. He is also relieved from reporting anything about school closure to the Board. Why?

The *Memorandum* is important, as it records publicly the opinion of the Board that the appointment of part-time medical officers of health or sanitary inspectors is not to be desired. In either case it gives a list of other duties which (in the Board's opinion) may be allotted (in small districts) to these officers. I venture to think that few medical officers of health will agree that the duties of police surgeon (which are analogous to private practice) are compatible with their primary duty. These "omnibus" appointments, recommended though they are by the Local Government Board, are most undesirable, as they encourage pluralism and create officers who as regards any one of his several appointments would be "an official part-timer." Is this consistent on the part of the Board? In the Memorandum, too, the Board advocates adequate salaries, but at the same time, in the penultimate paragraph of p. 2, gives its approval to an iniquitous plan by means of which economical (or mean) authorities can and do arrange to give a part-time salary to a medical officer of health, who is not allowed to engage in private practice and yet cannot do anything practicable to supplement his inadequate salary, because his council takes care to give him enough work to occupy his *whole time*. In the last paragraph of the Memorandum the Board offers councils the most proper advice about the travelling expenses of the sanitary inspector. Why did not the Board offer the same with reference to medical officers, to whom the necessity of adequate travelling allowance, especially over large areas, is equally great?

In conclusion, Sir, let me remind you that it is nearly 20 years since the last Orders were issued. Perusal of the new Order will convince anyone that the Local Government Board has done thereby little or nothing to remove the difficulty of honest and efficient administration of the numerous Acts of Parliament, Regulations, Orders, &c., concerning the improvement of the public health. I am exceptionally situated for obtaining the views of many medical officers of health on matters concerning their arduous work, and I can therefore claim that the foregoing

criticism of the latest effusion of the Local Government Board is something more than a merely personal one.

I am, Sir, yours faithfully,

Feb. 13th, 1911. ENERGY.

## OMNOPON.

*To the Editor of* THE LANCET.

SIR,—I find that "pantopon" is now officially styled "*omnopon*," and Messrs. Hoffmann-La Roche, the sole makers of this preparation, have been good enough to supply me with samples of the drug under that name. They are in every way similar to the "pantopon" used in the cases referred to in my article, "Some Remarks on Pantopon Anæsthesia," and I should like to add that my remarks with regard to "pantopon" apply equally to "omnopon." The only difference is in the name, since I am told there is a legal difficulty in registering the name "pantopon" in this country. In justice to Messrs. Hoffmann-La Roche I hope you will be good enough to publish this addendum.

I am, Sir, yours faithfully,

Buckingham-street, W.C., Feb. 20th, 1911. C. LOUIS LEIPOLDT.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Infants' Health Society.*

THE Birmingham Infants' Health Society, founded in 1907, is one of the most prominent of the agencies attempting to grapple with the problem of infant mortality. It concentrates its energies upon St. Bartholomew's Ward, where the infant mortality is particularly heavy, and endeavours not only to enlighten ignorant mothers as to their maternal duties, but to study at first hand the nature of the factors which give this ward an unenviable reputation. A considerable amount of apathy and prejudice has been overcome, and the annual report just issued gives abundant evidence of progress. At the weekly "infant consultations" where babies under 12 months of age are weighed and the mothers advised as to feeding, clothing, and general management, 411 children were examined last year, as compared with 353 in 1909 and 204 in 1908. The infant mortality among these "consultation infants" was 46·4, as against 201 for the whole of St. Bartholomew's Ward. The consultation mortality in 1908 was 95·2, and in 1909 49·8. The part played by feeding is strikingly illustrated by the fact that whereas there were only 8 deaths out of 171 breast-fed children, 7 bottle-fed children out of 53 died. Breast-fed babies 12 weeks old weighed on an average 4914 grammes, bottle-fed children of the same age 3813 grammes. At 12 months of age the difference was still more in favour of natural feeding. The effects of poverty on the physique of the child, even when breast-fed, are indicated in a series of tables contained in the report. Though practically all the mothers attending are in very poor circumstances, yet it is possible to divide them into two groups: (*a*) those distinctly suffering from poverty; and (*b*) those in slightly better circumstances. A three months old child belonging to group (*a*) fed at the breast weighs 4787 grammes, while the weight in group (*b*) was 5048 grammes. The average mortality-rate in St. Bartholomew's Ward for the five years ended Dec. 31st, 1909, was 205·8, and it is encouraging to note that the very class which in times past furnished the greater proportion of the infant mortality of the ward is the class which is now coming under the influence of the society. The society has "At Homes," at which the women learn knitting and sewing; evening educational classes, at which the lady superintendent, Miss Vine, instructs mothers in the feeding, bathing, and general management of babies; and also lectures on personal hygiene, home nursing, and cooking. The maternity department is very helpful to prospective mothers, and there is a system of home visitation which ensures proper attention for mother and child. At the annual meeting presided over by the Lady Mayoress, Dr. J. Robertson, medical officer of health, in moving the adoption of the report, said that, as to the methods of reducing infant mortality, he for many years sat on the hedge, and looking back he was not sure that he was not right, because many of the methods proposed 10 or 15 years ago had proved fallacious. Milk depôts where a pure article could be obtained at a cheap rate were supposed to be the method of dealing satisfactorily with the problem, but the Birmingham figures showed all along that the babies did not die because they got bad milk. By the health visitors they found that those districts where ignorance, carelessness, and poverty prevailed were associated with high mortality. If they could do something to stop babies from dying they also did much more for those who survived but whose lives at present were more or less wrecked by carelessness on the part of the mothers. There was a large proportion of babies who weathered the storm of the first year but who grew up into stunted men and women. Mr. Steel-Maitland, M.P., in supporting the resolution, referred to two dangers which occurred when public attention was attracted to a particular subject. One was what he might call washy semi-scientific talk and the other sentimental talk actuated by no wish for knowledge and activities directed by no knowledge. There was hardly any subject, he thought, about which these two faults were more apparent than the birth-rate. Many people uttered a dirge over the decline in the rate, while others regarded it as a good sign. There could be no doubt that if the birth-rate continued to fall without any counteracting influences, it would be a great disadvantage. There was ample room in this country for a vaster population if properly organised, while in our dominions abroad the room was unlimited. They wanted, not so much that the birth-rate should not decrease, but that the survival-rate of the adult active population should increase. Greater attention, he considered, should be paid to the ante-natal influence in mothers who had to go to work.

*Staffordshire and King Edward Memorial.*

A meeting to consider the proposal for a scheme to deal with consumption in Staffordshire as a memorial to the late King was held on Feb. 11th, at Stafford, under the presidency of the Lord Lieutenant, Lord Dartmouth. Dr. G. Reid, the county medical officer of health, had drawn up a memorandum on the question. In the course of it Dr. Reid stated that the results obtained by the sanatorium method of treatment had not so far justified the enthusiasm with which it was at first advocated. Experience showed that, with the inadequate means at present available of getting to know of cases early enough, in only about one-fifth of the definite cases could one look for really successful results from such treatment. On the other hand, a sanatorium used for isolation purposes was of great value, because the chief danger of infection was home contact, and the incurable cases were the most dangerous. No matter what form of treatment was adopted, some machinery for home supervision and the detection of the disease in its early stage must be provided. No matter how far local authorities might be induced to go in their efforts to deal with the problem, there would be ample scope for philanthropic help, and he suggested that any fund which might be collected in the county should be utilised in that direction. By means of such a fund it would be possible to organise a system by which, with the coöperation of local nursing associations, subsidised by the local health authorities, district nurses might be employed as house visitors to act under the direction of the medical officers of health, whom they would keep informed regarding the progress of cases which had undergone treatment. The nurses would also exercise supervision with the families as regarded home preventive measures and note from time to time any signs of ill-health suggestive of commencing consumption, in order that, if verified by medical examination, early, and therefore far more effective, steps might be taken in the way of treatment. It would be necessary to have classes for nurses to instruct them in their duties. The organisation of such a scheme might be entrusted to the County Nursing Association, and arrangements could also be made for lectures to be given in populous centres. The following resolutions were passed at the meeting:—

(1) That it was not advisable that the fund to be raised in the county should be utilised for the assistance of institutions already in existence; (2) that a fund be raised to be known as the King Edward VII. Tuberculosis Prevention Fund, and that it be utilised from time to time towards the cost of general measures for combating tuberculosis; and that (3) having regard to future possibilities, it is not considered expedient to expend any monies in the erection of a sanatorium at present.

Feb. 20th.

## LEEDS.

(FROM OUR OWN CORRESPONDENT.)

*King Edward West Riding Memorial Fund: Special Effort in connexion with the General Infirmary at Leeds.*

A MEETING convened by Lord Harewood, Lord Lieutenant of the West Riding, after consultation with the Lord Mayor of Leeds, was held in the town-hall, Leeds, recently, at which it was decided that the most appropriate memorial the West Riding could raise to the memory of King Edward would be a large fund for the subsidising of the hospitals in the West Riding. It was specially emphasised at the meeting that it was not desired in any way in thus making a general fund to interfere with or dilute the efforts of the larger towns in the same direction, and it was arranged that anyone who became a subscriber to the general fund could allocate his subscription to any hospital or infirmary in which he was more particularly interested. For some time it has been known that a large appeal would require to be made on behalf of the General Infirmary at Leeds, and the chairman, Mr. Charles Lupton, as the result of a personal canvass which he has undertaken, has secured promises of £56,000 towards the funds of that institution. The Lord Mayor of Leeds, Mr. W. Middlebrook, M.P., and Mr. Lupton, having held a consultation on the matter, the former called a meeting of those interested in the infirmary, and made the proposal that Leeds should coöperate with the West Riding in raising a large sum, and that the citizens of Leeds should be recommended to allocate their subscriptions to the uses of the General Infirmary at Leeds. This was agreed to, and the handsome nucleus of £56,000, all of which, of course, is allocated to the infirmary, goes to swell the West Riding fund. Since the opening of the Lord Mayor's fund this special Leeds portion has increased to nearly £70,000. No worthier memorial could be raised to the honoured memory of our late King, and it is earnestly to be hoped that throughout the Riding strenuous efforts will be made to secure a sum worthy of the occasion and in some degree adequate to the magnitude of the demands. In regard to the General Infirmary at Leeds, so well known throughout the country, it may be well to note that its development has been steady and rapid since that memorable occasion, now 143 years ago, when the following minute of a meeting held in an inn in Upperhead-row marked its inception: "That Mr. Andrew Wilson's house in Kirkgate be taken for an infirmary at £16 by the year." The buildings, sites, and furniture of the infirmary now represent a capital expenditure of £250,286, and there is urgent need for further extension and development. The expenditure is in excess of the income, and is bound to increase when these extensions are carried out. Among the more important requirements are the provision of four new operating theatres, the extension of the laboratory and pathological departments, the provision of additional accommodation for nurses, the provision of two additional wards, and the modernising of some of the wards. It must be remembered that the greater part of the present building is now about 45 years old, and structural alterations and repairs become decade by decade an increasing source of expense. The recent fire at the infirmary, happily unattended with loss of life, which was commented on in your columns, has emphasised the necessity of there being greater facilities for the removal of the patients in the event of a catastrophe, and has drawn attention to the existence of certain defects in construction which may be removed at some expense, and which must be rectified if all due precautions are to be taken against such a disaster. It had therefore some months ago been decided by the authorities of the infirmary that an appeal should be made to the public of Leeds, of the West Riding, and of Yorkshire generally for a sum of not less than £150,000. Unless this is forthcoming there must of necessity be some arrest of development and some crippling of the work of this, the greatest of the charities of Yorkshire. The appeal is to Yorkshire, but it must be remembered that many of the patients who are treated within the walls of the infirmary, both on the medical and on the surgical side, come from beyond the limits of Yorkshire, and it is hoped that many subscriptions may be obtained from areas outside that of the three Ridings. The connexion of the infirmary with the medical school, now a part of the University of Leeds, has been productive of much mutual benefit, and all who are acquainted with the methods of medical education will cordially endorse the statement that it is doubtful if there is a single family in Yorkshire which cannot trace some benefit it has received to the work carried on at the Leeds Infirmary. The infirmary is fortunate in having at the head of its board, in the person of Mr. Charles Lupton, a man thoroughly versed in hospital management and fully alive to the necessity of continuous development along the lines of scientific advance. He has, as he remarked once to your correspondent, determined that, when the time comes for him to resign the important position he holds he must have the satisfaction of feeling that the General Infirmary at Leeds is an institution thoroughly modern in equipment and abreast with the best standard of efficiency.

Feb. 20th.

## NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

*Durham University College of Medicine.*

THE annual Court of Governors of the above College was held on Feb. 9th, under the presidency of Sir George Hare Philipson. Amongst others present were Councillor Johnstone Wallace, Alderman Sutton, Mr. Cecil Cochrane, Professor R. Howden, and Professor R. P. R. Lyle. Apologies for absence were read from the Duke of Northumberland, Viscount Ridley, the Lord Mayor of Newcastle, Sir Hugh Bell, and Mr. A. F. Ericsson. The annual report was read by the secretary, Professor Howden, and stated that during the past year the College had been recognised by the Board of Education as a technical institution and had received a grant of £36. It was confidently hoped that the grant for the current year would be much larger. In order to clear off a deficit which had been made necessary by the establishment of a suspense account, which the Board of Education desired, an appeal had been made for subscriptions which so far had resulted in the collection of £1229. The entry of students was satisfactory, though not quite up to the previous year. Mr. H. Brunton Angus had been appointed lecturer in surgery; Dr. T. Beattie professor of therapeutics, and Dr. William E. Hume lecturer in materia medica. Mr. Frank Howson, the lecturer in physiology, had been appointed to a post in the University of Sydney and steps were being taken to appoint a successor, while the Joint Pathological Board of the Royal Victoria Infirmary and the College of Medicine had advertised for an assistant to the professor of pathology. The report was adopted on the motion of Sir George Hare Philipson. At the council meeting of the College a letter was read from Dr. H. E. Armstrong, stating that, owing to pressure of public engagements and other circumstances, he had decided to resign his position as lecturer and examiner in hygiene, but he would hold office until the end of September. The letter was received with regret and a suitable resolution was framed and carried referring to Dr. Armstrong's valuable services over the long period of 38 years to the College and the esteem in which he was held by his colleagues.

*Past and Present Students' Dinner, College of Medicine.*

This dinner was held on Feb. 15th, the guest of the evening being Mr. W. Arbuthnot Lane, of Guy's Hospital, London. The chair was occupied by Mr. H. B. Angus, and the company included Sir George Hare Philipson (President of the College), Professor Howden, Professor Lyle, Professor Bolam, and Professor Hutchens. After the loyal toast, the health of the guest was proposed by the chairman, and suitably replied to by Mr. Lane. In the afternoon of the same day Mr. Lane gave an address in the College of Medicine on "Some Methods of Treating Fractures." This was well attended and received with interest and enthusiasm.

*Royal Victoria Infirmary.*

During the past week there has appeared in the local press a short statement that the difficulties between the honorary staff and the house committee had been settled. Owing to the decision of the honorary staff to maintain silence as to its differences with the committee no information other than sketchy references to the matter in the newspapers has been available. It appears, however, that in December last the honorary staff took exception to some statements in connexion with a report submitted to the house committee by the patients

admission committee, with the result that the resignation of the staff was handed in. It is now officially stated in the press that the resignations of the staff have been withdrawn, the committee having withdrawn the statements complained of and rescinded a resolution adopted as to a scheme of admission of patients, and that the honorary staff had agreed to meet the house committee to discuss the admission of patients. There is general satisfaction in the city and district over this happy issue from the difficulty.

Feb. 20th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Royal Medical Society of Edinburgh.*

THE annual dinner of the Royal Medical Society of Edinburgh was held in the society's rooms on the evening of Feb. 15th, Dr. Francis R. Fraser, Senior President, being in the chair. The guest of the evening was Sir James Crichton-Browne. The President referred to the unavoidable absence, owing to professional and Parliamentary business, of Sir Robert Finlay, who had intended to be present that night. In proposing the toast of "The Guest" he said that 52 years ago a seat in that hall had been requested for Mr. James Crichton-Browne. A year later that gentleman was secretary of the society, and in the year 1860–61 he had been one of the presidents of the society. Sir James Crichton-Browne, as Vice-President of the Royal Institution for more than 20 years, had endeavoured to acquaint the public with the discoveries of medical and scientific research. Sir James Crichton-Browne, who was received with loud applause, spoke of the memories conjured up in those surroundings by old associations rising from the depths of memory. He spoke at length of the work of one of his *confrères* in the Royal Medical Society, James Bell Pettigrew, who became professor of medicine in the University of St. Andrews, and who was admitted to the Royal Medical Society immediately after he had won the Goodsir gold medal for his essay on the "Muscular Structure of the Heart." He remembered how at one of the society's meetings Pettigrew had vaguely adumbrated his theory of flight, and referred to his discovery of the figure-of-eight movements of the wings of birds and insects—a discovery which, in his opinion, was at the root of modern aviation. In 1873 Pettigrew published his book on "Animal Locomotion," a work which anticipated much which had now been accomplished, and much which was still to come. In conclusion, Sir James Crichton-Browne proposed the toast of "The Royal Medical Society." He referred to the fact that the President that evening was the son of his lifelong friend Sir Thomas Fraser. His earnest wish was that the society might continue to prosper.

*Scottish Birth-rate.*

In the Registrar-General's returns for Scotland for the quarter ending Dec. 31st, 1910, it is shown that the equivalent annual birth-rate is 23·9 per 1000 of the estimated population, a rate 2·9 less than the mean of the birth-rates of the fourth quarter of the preceding ten years, and the lowest quarterly birth-rate recorded in these reports, that is, since 1855. The equivalent annual death-rate is 14·3 per 1000 of the estimated population, which is the lowest Scottish death-rate of any fourth quarter.

*Edinburgh Indian Medical Service Dinner.*

There was no Edinburgh Indian Medical Service dinner last year owing to the lamented death of H.M. King Edward. It is proposed to hold the dinner this year as usual at the Caledonian United Service Club, Edinburgh, on the last Friday in May. It is hoped that Sir Alexander Christison will again be chairman. Further particulars may be obtained from Lieutenant Colonel J. Arnott, I.M.S., retired, 8, Rothesay-place, Edinburgh.

*Sutherland and Caithness Medical Officerships.*

On Feb. 17th a special meeting of the county council of Sutherland was held at Golspie, when a letter from Dr. G. Dick, medical officer of health, was under consideration. An offer had been made by the Caithness County Council and the Caithness County Committee to appoint Dr. Dick medical officer of health and school medical officer for the county of Caithness alone. By reason of the connexion in the matter of the medical officership of health between the two counties there has been some difficulty in arranging matters, and the decision reached by the meeting brings to a satisfactory point negotiations which have been going on for over a year. The meeting decided to separate the posts of medical officer of health for the counties of Sutherland and Caithness, and that the posts of medical officer of health and medical inspector of schools for Sutherland should be held together. It was also decided that a committee of eight members should be appointed to act as a joint committee along with eight members from the county committee on secondary education, with full powers, after Dr. Dick had sent in his resignation, to arrange terms and conditions for the appointment of a medical officer for the combined offices and to make the appointment.

*New Perth Infirmary.*

The annual meeting of subscribers to Perth Infirmary was held on Feb. 13th. The total number of cases treated last year was 3697, 342 fewer than the previous year. The ordinary income was £4260, and the expenditure £4441, leaving a deficiency of £181, which was, however, covered by legacies received. It is hoped that the new infirmary may be on the way next month. The estimated cost is £36,190, to meet which there is a sum of £33,012 available. Private offers have been made for the present infirmary, but the directors mean to expose it for public sale.

*Death of Dr. Duncan Sinclair Kennedy of Perth.*

The death of Dr. Duncan Sinclair Kennedy occurred at his residence, Perth, on Feb. 17th, at the age of 60 years. Dr. Kennedy was a native of Oban, and went to Perth 30 years ago, when he took over the practice of the late Dr. Nairn. He held for several years the post of indoor medical officer for the Perth parish council. He was also public health and medical officer of the burgh of Auchterarder. He was at his death an elder of St. John's parish church, which he joined from the "Wee Frees," being out of sympathy with their leaders. Dr. Kennedy was highly respected in the community. He leaves a widow and a grown-up family.

*Medical Officer Appointed to Aberdeen Poorhouse.*

At a meeting of the Aberdeen parish council held on Feb. 14th Dr. Clifford Bell was appointed resident medical officer. Dr. Bell graduated at Aberdeen University in 1896 and started practice in Aberdeen a little over ten years ago, and at present holds the appointment of assistant medical electrician at the Aberdeen Royal Infirmary. The duties of the new medical officer have been embodied in a set of rules. With regard to post-mortem examinations it is provided that he shall make a post-mortem examination of a body when called upon to do so by the procurator-fiscal, or if the procurator-fiscal intimates that he does not require a post-mortem examination, he shall make such examination if he is of opinion that it is necessary, provided always that the consent of relatives (if any) has first been obtained. It is reported by the poorhouse committee of the Aberdeen parish council that the following letter has been received by the inspector from the Local Government Board:—

> With reference to your letter dated 11th inst., I am instructed to say that the Board are gratified to learn that the parish council of Aberdeen have decided to appoint an additional resident medical officer at Old Mill Poorhouse. The Board accordingly sanction a salary for the senior resident medical officer at the rate of £200 per annum, in addition to board and apartments. Kindly inform me what amount it is proposed to claim against the medical relief grant in respect of board and apartments. I append a note showing what is allowed in similar circumstances in other poorhouses.

With regard to the last paragraph of the above letter the board recommends that £1 per week should be claimed for the board and lodging of the male resident in the Aberdeen poorhouse. This is the charge made against the Government grant for the resident's board in Dundee East poorhouse, Craiglochart, Craigleith, Stobhill, and Barnhill poorhouses, as seen from the list accompanying the letter.

Feb. 21st.

CATS AND DIPHTHERIA.—Mr. H. Ubsdell, the medical officer of health for the Buckfastleigh (Devon) urban district council, in his annual report for 1910 states that during the year 17 cases of diphtheria were notified. Mr. Ubsdell is of opinion, verified by post-mortem examination, that three of the cases were due to contagion from a cat.

# IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Irish Medical Association and Parliamentary Representation.*

THE Irish Medical Association, in common with other professional bodies, has often felt the disadvantage under which medical men suffer in their lack of representation in Parliament. For some time it has had under consideration the best method of obtaining for the interests of the profession in Ireland a hearing in the House of Commons. At the last meeting of the council of the association the following resolution was passed unanimously :—

That we are in favour of approaching at least two Members of Parliament to represent the interests of the Irish Medical Association in Parliament.

It is understood that the council is already in touch with two Members of Parliament, one on each side in party politics, who are willing to act as spokesmen for the profession when matters concerning its interests are under discussion.

*Boycotting of Irish Qualifications.*

The Council of the Association of Fellows of the Royal College of Surgeons in Ireland, a body which charges itself with the protection of the interests of the Fellows, has recently brought out a pamphlet dealing with the exclusion of candidates holding Irish qualifications from competition for certain posts in English hospitals. Detailed reference is given to the case of the Manchester Royal Infirmary which recently demanded Fellowship of the Royal College of Surgeons of England as a necessary qualification for candidates for an assistant surgeoncy. It is stated that similar demands have been made by the Queen's Hospital for Children, Bethnal Green ; Cancer Hospital, Fulham-road ; Seamen's Hospital, Greenwich ; King's College Hospital, London ; Manchester Children's Hospital ; and the Royal Waterloo Hospital, London.

*Infective Disease in Dublin.*

The outbreak of infective disease shows some signs of abatement, coincident, apparently, with the close of the dry spell which had lasted nearly since the beginning of the year. The death-rate from all causes for the week ending Feb. 11th was 30·6 per 1000 per annum, and from infective diseases 2·3 per 1000 per annum. From the beginning of the year up to Feb. 15th 63 deaths have taken place from the four diseases—scarlet fever, diphtheria, typhoid fever, and whooping-cough. Measles was responsible for many more. Sir Charles Cameron, medical officer of health, has addressed a letter to the daily papers stating that most of the cases of disease have been among the middle classes and well-to-do working people rather than among the very poor, and on the outskirts of the city rather than in the slums.

*Compliment to Sir Charles Cameron.*

A special meeting of the Dublin city council was held on Feb. 20th to witness the signing by Sir Charles Cameron of the roll of honorary burgesses of the city, and to present him with a casket containing the certificate of honorary freedom. The resolution conferring the honour on Sir Charles Cameron had been passed some months ago. Sir Charles Cameron, who is 80 years of age, has been medical officer of health of Dublin since 1862.

*Honorary Medical Degrees.*

At an extraordinary meeting of Convocation of the Queen's University of Belfast, held in the large hall of the University on Feb. 4th, the Right Hon. Thomas Sinclair, presiding over a large attendence, Dr. R. W. Leslie proposed, and Dr. W. Calwell seconded, the following resolution, of which due notice had been given :—

That we, Convocation of Queen's University of Belfast, emphatically protest against the disability imposed on the University by the Statutes, Chap. XXXIII., Clause (1), which prohibits the conferring of honorary degrees in the Faculty of Medicine ; and, having regard to the fact that this privilege was exercised respectively by the old Queen's University and by the Royal University throughout their careers and is enjoyed to-day by the University of Dublin, by the National University, and by the Royal College of Physicians and Surgeons in Ireland, we call upon the Senate to take such steps by appeal to the Privy Council or otherwise as will remove this anomalous disability.

The resolution was passed unanimously. In Ireland every university and examining medical college has had in the past the power of conferring a honorary medical degree or Fellowship. When the Royal University was abolished and in its place the two new institutions—the National and the Queen's Universities—were established, the Commission which drew up the statutes of the National University—presided over by Chief Baron Palles, and of which Dr. B. C. A. Windle and Dr. D. J. Coffey were the medical members—gave that body the option of conferring honorary medical degrees ; while the Belfast Commission, of which Sir Donald MacAlister, K.C.B., and Dr. J. Symington were the medical members, drew up the following Statute :—

The Senate may confer honorary degrees other than degrees in the Faculty of Medicine upon persons of distinction in letters, art, science, professional life, or the service of the public, and upon eminent benefactors of the University.

This provision, which distinctly forbids the conferring of honorary medical degrees, has caused great dissatisfaction to the medical profession in the North of Ireland.

*Sanitary Congresses in Ireland.*

The public health committee of the Edinburgh town council has decided not to send delegates either to the Conference of the Royal Institute of Public Health in Dublin next August, or to the Royal Sanitary Institute Congress in July at Belfast. The holding of two conferences in one year is looked upon as a needless waste of expenditure. It certainly seems ridiculous to hold two sanitary congresses in Ireland in two successive months.

Feb. 20th.

# PARIS.

(FROM OUR OWN CORRESPONDENT.)

*A Military Medical Officer threatened with an Action-at-law.*

AN officer of the colonial military force who has been under treatment at the Hospital of Val de Grâce, in Paris, since April, 1907, has recently made application to the Procureur of the Republic for legal assistance to enable him to bring an action for damages against a member of the medical staff of the hospital. He was admitted on account of spasmodic paresis of the upper limbs and he complains that the medical man treated him with injections of excessive doses of anilarseniate of soda, the result being that he immediately lost the use of his lower limbs. An inquiry which was held in February, 1909, by the Minister of War exonerated the medical man, but the patient says that he is applying to the law courts because the inquiry was biassed and he had not an opportunity of proving his statements.

*A New Application of Radiography.*

At a recent meeting of the Academy of Sciences M. Vaillant said that by means of radiography it was, he believed, possible to ascertain whether an infant had lived or not. When the infant had been born alive the abdominal organs—i.e., the stomach and intestines—were visible in the radiographic picture, but when the infant had not been born alive these organs were not shown in the picture.

*Chronic Appendicitis simulating Pulmonary Tuberculosis.*

In a communication made to the Société Médicale des Hôpitaux on Jan. 28th M. Faisans said that he had frequently observed patients who presented many of the signs of pulmonary tuberculosis, such as loss of flesh during successive short periods, progressive lassitude, pain in the right side of the back, cough without expectoration, long-continued pyrexia, and short febrile attacks after walking. In some cases there were physical signs in the lungs, including subcrepitant râles, a rough murmur at the right base, and a diminution of the vesicular murmur at the right apex. These physical signs did not last long, rather taking the form of sudden short attacks. The symptoms might lead to an erroneous diagnosis of tuberculous disease of the lungs, but they were in reality often due to chronic appendicitis, and the usual signs might be elicited at MacBurney's point. M. Faisans said that these patients ought to be operated on, the result being usually favourable, and one of the subsequent speakers, M. Comby Siredey, concurred in this opinion.

*Treatment of Cerebral Tumours.*

Speaking at the same meeting, M. Sicard described some cases of cerebral tumour in which localised cranial headache, either spontaneous or elicited by percussion or the use of a

large tuning-fork, served to indicate the position of the new growth. He spoke very highly of the information which radiography was capable of giving with regard to both the nature and position of the tumour. A whitish mark on the negative plate, indicating rarefaction and osseous eburnation, made it almost certain that the tumour was malignant. With regard to treatment, he advised decompressive craniectomy. He also recommended the judicious employment of lumbar puncture as a means of accustoming the nervous centres to the shock of operation. When the growth was comparatively superficial he was in favour of applying radiotherapy through an aperture in the cranium, the nervous ectoderm being less sensitive to the X rays than the cutaneous ectoderm.

*Freund's Operation for Pulmonary Œdema.*

Two patients on whom M. Tuffier had performed Freund's operation for pulmonary œdema have been shown by him at a meeting of the Surgical Society. The operations had taken place more than 18 months ago. The first patient was a woman, aged 28 years, who when she came under M. Tuffier's care was no longer able to work and had to pass her time sitting up in bed. He resected the first, second, third, fourth, fifth, and sixth costal cartilages on the right side, and since that time she had been able to earn her livelihood without a single day's interruption. The second patient was a man in the state of cyanosis and permanent respiratory anxiety characteristic of the last stage of emphysema. M. Tuffier performed bilateral resection of all the costal cartilages, and the man has now for two winters been employed as the chauffeur of a taxicab without having ever had to leave off work.

*Treatment of a Bullet Wound of the Stomach.*

At a meeting of the same society M. Hartmann communicated on behalf of M. Baudet a case in which a woman was shot with a revolver on a level with the eighth left intercostal space. Vomiting of blood showed that the bullet had penetrated the stomach. At the end of two and a half hours after the injury an incision was made parallel to the costal margin, the cartilages were divided as far as the seventh rib, and a flap which was made was turned up; the wound where the bullet entered the stomach then came into view and was sutured. The patient recovered. M. Hartmann called attention to the fact that only one wound of the stomach had been sutured, although there must have been another, because radiography showed that the ball was lodged near the vertebral column.

*Number of Medical Students in France.*

According to the official report, in the year 1910 there were 3756 registered students of medicine, being an increase of 346 over the number for the previous year. These 3756 students included 3330 men and 426 women; classified according to nationality, there were 3020 French students, of whom 124 were women, and 736 foreigners, of whom 302 were women. Of the total number of students, one-fifth were therefore foreigners.

Feb. 13th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Statistics of the German Universities.*

ACCORDING to the *Deutsche Medizinische Wochenschrift* the number of students attending the German universities has increased from 13,000 in 1871 to 54,822 in the present year. From 1910 to 1911 there was an increase of 2415, the same as for 1909 to 1910. A similar desire for a university education exists in foreign countries also: in France, for instance, the number of students is estimated at about 42,000. Of the students in the German universities, 52,404 are men and 2418 are women, as compared with 50,557 men and 1850 women in the previous year. The number of medical students is rising, being 11,240, as compared with 10,135 in the previous year and 8088 five years ago. A similar increase has occurred among the students of philology, philosophy, and history. The number of students of theology, which has of recent years been lower than in any preceding period, begins to rise again, being 2535 for Protestant and 1766 for Roman Catholic theology. The number of law students has decreased from 12,160 to 10,890, that of dental students from 1395 to 1146, and that of pharmaceutical students from 1279 to 954. The three largest universities are those of Berlin with 9686 students, Munich with 6905, and Leipsic with 4900 students; the three smaller are those of Erlangen with 1011 students, Greifswald with 948, and Rostock with 816. In addition to the duly matriculated students 3528 men and 1772 women were granted permission to attend the lectures, so that a total number of 60,552 persons received instruction in various branches of knowledge at the universities. Of the matriculated students, 841 men and 103 women were foreigners, of whom no less than 406 men and 74 women were Russians; 39 men and 8 women were British; and 145 men and 65 women were American. The number of women students continues to increase, so that they now form 4·4 per cent. of the general body of students as compared with 3·5 per cent. in the previous year. The distribution of the women students among the various faculties of the universities is as follows: 1370 are students of philosophy, history, and similar subjects, as compared with 975 in the previous year; 527 are medical students, as compared with 476 in the previous year; 356 are students of mathematics and natural sciences, as compared with 287 in the previous year; 49 study dentistry; 60 study political economy and agriculture; 7 study theology; and 5 study pharmacy. The female students show a decided preference for the University of Berlin, 806, or about one-third of the total number of female students, being matriculated there. Together with the 1772 who, without being duly matriculated, are admitted to attend the lectures, the female students at the German universities have now reached the record number of 4184.

*Conviction of a Quack.*

Prosecutions of irregular practitioners in Germany have hitherto usually resulted in an acquittal, but in a recent case the offender was less fortunate. The circumstances were as follows. A woman suffering from a cancer of the mamma had consulted a surgeon who advised an operation. She then saw a well-known quack, who said that she could be restored to health by medicine without operation and he prescribed something for her, but she died within a year. The public prosecutor then charged the quack with having caused death by negligence. When brought to trial the accused pleaded that the success of an operation for cancer was always very doubtful, and that the woman might have died from the cancer even if she had been operated on. The surgeon gave evidence to the effect that the disease was in an early stage when he first saw her, that he had advised an operation, and that in his opinion the performance of the operation would have postponed the fatal issue for some years. According to his experience and that of other surgeons he was sure that the patient might have been saved, or at least the fatal issue postponed for years, if she had been operated on in due time. The court found the prisoner guilty of having caused death by negligence and condemned him to six months' imprisonment. This decision is rather remarkable as the courts have hitherto, as a rule, given a verdict of not guilty when a quack was charged not with direct neglect but only with giving wrong advice as in the above case. In Germany there is an unfortunate tendency to sympathise with medical impostors, and the confidence which some of the better classes place in them has even been shown during the discussions on the new anti-quackery Bill now under consideration by a committee of the Reichstag.

*Malignant Growths treated by Radium.*

At a recent meeting of the Berlin Medical Society Dr. Arendt read a paper on the effects produced by radium rays acting on malignant growths of the female genitals. For this purpose he used an ore of uranium obtained from Joachimsthal in Bohemia. The powdered mineral was put into an elongated pouch made of a very thin flexible material, and this pouch, after being coated with iodoform, was introduced into the vagina. At the commencement of the treatment the carcinomatous tissue must be removed as much as possible by means of a curette, and then cauterised with Paquelin's apparatus. The application of the radium-containing substance was begun two days afterwards, the pouches being changed every third day. The treatment had a distinctly palliative effect, checking the discharge and fœtor and relieving the pain. Complete recovery from the disease was, of course, not to be expected, but in inoperable

cases the patient's general condition improved to some extent and there was obvious mitigation of the symptoms.

*A Colony for Children Suffering from Whooping-cough.*

A limited liability company was recently formed for the purpose of establishing on the shore of the Baltic a health resort for children suffering from whooping-cough. Hitherto those children when a change of air had been prescribed for them by a medical man were usually taken to some place on the seaside or in the mountains, where they associated with healthy children, who were thereby liable to be infected; it moreover often happened that the patients were requested by the hotel proprietors to take their departure as soon as the nature of the disease was known. In order to avoid these risks and inconveniences the above mentioned company undertakes to form a kind of colony where only families with children suffering from the disease will stay. The establishment will include a number of isolated houses, each for one family; playgrounds and other opportunities for recreation will be provided and there will be a large separate kitchen in which all the food will be prepared. The colony is at some distance from other habitations as well as from any frequented main road. It is, of course, intended for well-to-do people only, but if the undertaking proves successful similar institutions for children of the humbler classes will no doubt be established by some of the municipal authorities.

*Radium in the Treatment of Gout and Rheumatism.*

In a communication to the Berlin Medical Society Professor His not long ago gave an account of the results which he had obtained in the treatment of gout and rheumatism by radium. He said that of 100 patients who had been under his care suffering from chronic rheumatism 50 per cent. showed an obvious amelioration, a great number showed a remarkable improvement, and five recovered completely. All the cases were very severe and had been treated without success by other methods. The success obtained in 28 cases of gout was still more striking, as only four showed no change, whilst of the remaining 24 some were considerably improved and some recovered completely. The differential diagnosis between chronic rheumatism and genuine gout was sometimes rather difficult; he maintained it was essential to examine the blood as to the presence of uric acid. In cases of real gout the uric acid generally disappeared under the radium treatment in a period varying from a few days to several weeks, its gradual diminution being accompanied by an improvement in the clinical symptoms. With regard to the administration of radium Professor His recommended the inhalation of radium emanation, a procedure in which the patients must spend two hours daily in an "emanatorium." The administration of a fluid containing radium by injections made in the neighbourhood of the affected joints was also very efficacious. Radium influenced metabolism and, moreover, made the ferments of the organism active. It was, of course, not a panacea for every case of gout; in inveterate cases accompanied by osseous ankylosis of the joints success could not be expected. The dose must be graduated according to the state of the individual patient. In the discussion Dr. Fürstenberg called attention to the soporific action of radium. Dr. Gudzent said that after the use of radium some patients fell asleep, but others on the contrary became excited.

Feb. 20th.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

*The Limitation of Families and the Superior Hygienic Committee.*

THE census held in the first two weeks of January, 1911, has had the unexpected result of showing that the increase of the population is far from being satisfactory. In large towns the general increase is not more than from 10 to 15 per cent., whilst in small provincial towns it varies from 3 to 5 per cent., and there are villages the inhabitants of which have even decreased in number during the last decade in consequence of emigration. This state of affairs has naturally caused some uneasiness among those who regard increase of population as an indication of national prosperity. The first and most obvious cause of the diminished rate of increase is emigration. Although multitudes of emigrants come back penniless from America, hundreds and hundreds continue to ask for emigration passports to that country. Another factor in the question is the dangerous spread of the "only child" system, which is threatening to place us in a position similar to that of France some 10 or 15 years ago. It seems strange that the hygienic authorities of the State should be so apathetic as they are in regard to this problem, for it might be possible to convince some delinquents of the error of their ways, and popular lectures on the perils of artificially induced abortion might act as a deterrent. In some parts of the country, as, for instance, in the county of Baranya, ordinary peasant women can manipulate the uterine sound (or a catheter) for the purpose in question with admirable skill, observing all the rules of antisepsis in their work. The police are aware of these facts, but can do nothing because offenders evade detection by performing these operations mostly in the second or third month of pregnancy, before the woman's condition has become noticeable. Hungary being an agricultural country the shortage of able-bodied men is especially felt by farmers and landed proprietors—so much so indeed that last summer in some parts of the country harvesting had to be put off from week to week for want of hands. This fact induced the board of the "National Hungarian Agricultural Society" to ask the Government to take some measures against this national peril which in popular language is called "egyke" (onelet, only child). They were particularly desirous that the Government should prohibit the sale of articles for the mechanical prevention of conception (*condomes*), which, according to the board, are mostly to blame for the prevalence of the only child system. The question being to some extent connected with public hygiene the Government requested the Superior Hygienic Committee to give an opinion thereon. The text of this opinion was compiled by Dr. W. Tauffer, professor of gynæcology at the University of Budapest, who acknowledged that the law relating to artificially induced abortion is rather lax, and promised that the committee will also see that in future the medical students in the University and the midwives in the midwifery schools shall be instructed to enlighten their patients as to the dangers and evil consequences of artificial miscarriage. In discussing the general subject of the limitation of families Professor Tauffer said that, in his opinion, the increase of population, looking at it from a hygienic point of view, was a question of food-supply only, for the propagating rate of mankind, when left to itself, tended to rapid increase, but the supply of food was limited and increased but slowly. In consequence of these views being generally accepted heads of families were now becoming anxious to limit the number of their descendants. Professor Tauffer further remarked that criticism of the means with which ministers of religion, moralists, politicians, whether military or agrarian, and capitalists tried to check the spread of this habit was not the task of the Superior Hygienic Committee. The publication of Professor Tauffer's opinions gave rise to acrimonious discussions in the newspapers, the agrarian party being prominent in expressing their dissatisfaction with his views, and in bringing this to his notice they did not select the politest phrases. Even in the dignified *Fiqyelo* there is a long article wherein Professor Tauffer's opinion is discredited and his teaching condemned. Count Apponyi, the late Minister for Public Instruction, has challenged the advocates of restriction to meet him in a discussion on this question, but Professor Tauffer has told an interviewer that he would not enter into a controversy of that kind with Count Apponyi, who is not a medical man. This agitation has induced Francis Herczegh, a sympathiser with the agrarian party and the foremost Hungarian dramatist and novelist, to write a long article with the title "Marginal Notes to the Only-child Question," wherein he seeks to prove the errors of Professor Tauffer's opinion. In the concluding part of his article he says that the essential condition of the medical calling is the defence of the principles of life, and that only on such grounds could medical men be entrusted as they are with powers greater than those of any other human authority. After denouncing the attitude of the Superior Hygienic Committee he expresses a hope that the Hungarian medical men will not be influenced by that pernicious example, but will follow the path in which they are led by their knowledge, conscience, and patriotism. In reply to this critic Professor Tauffer has

published a rejoinder in which he says that the physical well-being of the people, their education, the increase of public wealth, the improvement of the hygienic administration of the country, the inspection and disciplining of individuals dealing with obstetrics, the directing and controlling of the nursing hygiene of infants,—these are some of the things most urgently required to be done, and as a result of them a numerical increase of the population of the country may be expected, even if the births do not increase in the same proportion.

Feb. 18th.

## SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

*Successful Removal of a Subdural Tumour of the Spinal Tract.*

Dr. O. Veragut, *privat-docent* on neurology in Zürich, and Dr. H. Brun, surgeon in Lucerne, report on the following interesting case in the *Korrespondenzblatt für Schweizer Aerzte* of Nov. 20th and Dec. 1st, 1910. The patient was a man, aged 32 years, a widower, with one healthy boy, aged 3 years; his wife died from consumption and one of his brothers from tuberculous hip disease. Four years ago he was under treatment for consumption, but was afterwards able to continue his work. In December, 1909, he complained of stiffness and pain in the nape of the neck and left shoulder; in January, 1910, of numbness of the left arm which disappeared again, but afterwards the arm felt weaker. Later the right also felt numb and weak. He felt himself growing gradually weaker. At the end of January a burning sensation was felt in the nape of the neck and a burning sensation round the navel, also drawing pains in the left leg. The apex of the left lung was retracted and dull to percussion; catarrhal sounds were heard; tubercle bacilli in small quantities were found in the sputum. The patient held his head forward in a stiff manner; on rotation he complained of pain. Pressure on the head and spine was painless. Roentgen ray pictures showed a normal condition. There was hypæsthesia over the left shoulder. Passive movements of the left thumb and fingers were not perceived if the patient shut his eyes; he could not distinguish small objects placed in his left hand. There was contraction of the pectoral and teretes muscles. Abduction of the left arm was deficient; adduction with the elbow bent was less energetic than on the right side. Spontaneous fibrillary movement was seen in the deltoid and triceps muscles. The muscular power of the upper arm was considerably diminished. Spontaneous flexion and extension of the arm at the elbow-joint were executed very incompletely and with difficulty. The left leg trembled in the standing position and there was slight spasm in walking. The faradic and galvanic reaction of deficient muscles was normal. The triceps reflex on the left side was increased, as were also the periosteal and tendon reflexes. Slight pressure in the lacertus fibrosus of the upper arm on the left side caused rotatory clonus (clonic rotatory contractions) which ceased with the pressure. This clonus could only be produced in half-abduction of the upper arm and rectangular flexion of the elbow. The patellar reflexes on both sides were increased and there was clonic foot spasm. The Babinski sign and Oppenheim sign were present on the left side only. A diagnosis of tumour in the spinal cord compressing it at the level of the fourth cervical segment was made. The examination of five cubic centimetres of cerebro-spinal fluid proved negative. (Hygiene Institute of Zürich: Professor Silberschmid.) By Feb. 17th hypæsthesia over the left shoulder was more complete. There was reduced sensitiveness of the whole right side from the fourth cervical segment downward, but no feeling of vibration (tuning fork), except in the shoulder on the right side. On the left side this was present, and was only absent round the patella and on the shoulder. Astereognosis was total on the left side, partial on the right. The left arm could only be moved at the finger-joints. Passive movements were resisted. The right arm had less power. The left leg could only be slightly moved at the hip and knee. The power of the right leg was reduced. The patient walked like a case of spastic hemiplegia. Shortness of breath, due to paresis of the left phrenic nerve, was present, corroborated by Roentgen ray examination; respirations 27 per minute. As regards the left arm, the triceps, periosteal, and tendon reflexes were increased. The rotatory clonic spasm supervened in every position of the arm, and on slight pressure, also on tickling the left foot. The Babinski sign was present on both sides, and Oppenheim's sign only on the left side. The cremasteric reflex was present on the right side. The abdominal reflexes had disappeared. By Feb. 18th the left arm was totally anæsthetic. A diagnosis of a localised meningitis was excluded by the normal condition of the cerebro-spinal fluid. The slow progress of symptoms pointed to a growth of intradural but extra-medullary position, probably a sarcoma or fibro-sarcoma. On Feb. 18th, 1910, under ether narcosis, an operation was performed. The third and fourth spinous processes were removed and the laminæ resected. Hæmorrhage was successfully treated by compression. The dura mater was normal, not thickened, and the subdural cavity was empty. No pulsation of the cord was seen. No tumour. The medulla was slightly thickened over the third segment. Slight injection of the blood-vessels of the pia mater was present. Palpation revealed a greater resistance, pointing to circumscribed intra-medullary tumour. The pia mater was incised and there appeared a small spot 2 millimetres in circumference, the yellow colour of which contrasted with the white nerve substance. A small tumour of the shape of a hazel-nut was peeled out of the medulla like the yelk out of a hard-boiled egg. Scarcely any hæmorrhage occurred. The medulla began to pulsate again. The pia was replaced and the dura carefully sutured with silk. Catgut sutures of soft parts were used and the wound was drained. The tumour weighed 1¼ grammes, = 20 grains. Dimensions, 17 mm. by 11·5 mm. by 9·5 mm. Professor Schmid, of the Pathological Institute of Zürich, found it to be a solitary tubercle with thick elastic capsule. The patient breathed much more freely on recovering from narcosis. After eight hours feeling returned slowly in the left shoulder and arm. The gradual recovery was indicated in the original paper by tabulated reports and numerous diagrams. The patient was discharged on the fifty-sixth day after the operation and began work as a telephone operator. On June 26th he walked four miles as well as a healthy subject, and could lift a chair with his left arm. Slight differences of sensibility in the hand still existed.

Feb. 18th.

## NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

*Pneumonic and Septicæmic Plague Epidemic.*

SINCE my last letter events with regard to the spread of this epidemic have marched rapidly, and you will doubtless have read many telegraphic reports in the lay papers. As far as medical records go this epidemic differs in several particulars from previous plague outbreaks—e.g., in its influenza-like infectiousness, its invariably fatal issue, its types, and its incidence. At the present moment it is accounting for 500 deaths daily, and there is no evidence that it is in any way abating.

*History of the epidemic.*—The first signs of plague occurred in the mountainous north-west region of the province of Manchuria. It is said to have originated among the trappers of the *tarabagan*, a small marmot-like rodent, the fur of which is exported to Europe through the station of Manchuria on the Trans-Siberian line. In the summer months the Chinese population of this district, which amounts normally to about 3000, is augmented by some 50,000. In a report of Nov. 24th last it was stated that up to that time 300 persons had been afflicted with plague, not a single one of whom had recovered. It is said that the precautionary and antiplague measures adopted, in the first instance, by the Russian authorities at Manchuria station were of an indifferent order. Be that as it may, by the time the epidemic spread to Harbin the Russians had become alive to the situation and have since done all that was possible. A perusal of the various reports gives ample ground for saying that if the Chinese officials had fallen in with the active measures proposed by the Russians at Harbin the epidemic most probably would have been limited to North Manchuria. But the Chinese prefect (who has since been cashiered) showed himself obstructive and lax to a degree, refusing assistance to the authorities, and allowing the Chinese of the now

thoroughly infected district to use the south bound railway. Fu-Chia-Tien, the Chinatown of Harbin, speedily became a hotbed of plague, and the absence of all restrictions in the way of segregation and quarantine has been followed by the steady spread of the epidemic southwards along the railway. From Changchun it spread to Mukden, and from there south-east to Dalny and south-west to Shan-hai-Kuan, where it passed through the Great Wall into China. Yung-ping-fu, a country town a short distance south of Shan-hai-Kuan (the portal of the Great Wall), became infected, and cases have occurred at Tientsin and Peking. From Tientsin it spread down another railway into the heart of the province of Shantung; and from Peking the infection spread by the Peking-Hankow railway S.S.W. to Paoting-fu and Lung-hua-Tien, on the way to Mid-China. By steamers and native traffic infection was carried across the Gulf of Chihli to Chefoo. And now it remains to be seen if it will maintain its virulence till it reaches the humid zone of Mid-China, with all its teeming millions of people. Up to the time of writing the spread in Tientsin and Peking, two large cities, has been very slow, being limited in each to a mere handful of cases, the contacts from one infection.

*Character of the epidemic.*—Although Chinese figures indicate a certain number of recoveries, all the information given by foreign medical men on the spot points to a mortality of 100 per cent. Rats and fleas do not come into the question as propagators; there has been no noticeable mortality among the former. The transmission has been, like influenza, from man to man, and by direct contact with excretions, or indirectly through the air by the breath and moist particles a few yards round the patient. The majority (about 90 per cent.) of the cases have been of the pneumonic variety, the rest septicæmic plague. The following extract from a letter to me from Dr. W. H. Graham Aspland, now on plague duty at Harbin, gives an idea of the conditions there: "Daily mortality during past week 160; about 40 to 60 die in our hospitals, the remainder picked up by our sanitary men in the streets. In the Russian quarter 40 to 50 deaths daily. Duration of disease after becoming suspects is 2 hours to 2 days. All pneumonic and septicæmic cases with temperature 104° are found going about the streets and declare they have no sickness. Three hours after they are dead. It is simply incredible. Such a condition of life and death is unparalleled in its severity." Except for the deaths of two European medical men and 25 Russians at Harbin (out of a population of 30,000 Russians) the epidemic has been confined to the Chinese coolie classes. So far not a single death has been noted among the Japanese, of whom there are thousands in Manchuria, many living among the Chinese under very similar conditions—the only difference being that they are a cleaner race. In Fu-Chia-Tien—Chinese Harbin—the reduction in population, according to Chinese official estimates, from plague and departures in consequence of it, is from 40,000 to 15,000. It is impossible for anyone to give figures or say what dimensions the epidemic has assumed, owing to the native habit of concealment, against which the plague officials are unable to fight and before which all attempts at obtaining reliable statistics fail lamentably. The mortality rate may be taken at 99–100 per cent.

*Local conditions.*—Owing to severe cold in Manchuria the populace remain indoors as much as possible, and in small unventilated rooms which are usually overcrowded. At night they sleep in rows on "k'angs"—raised mud platforms occupying from three- to four-fifths of the sleeping-room. Wrapping themselves in dirty furs and wadded coverlets, four to six people lie together in a confined, close atmosphere that most Europeans would find insupportable. The sanitary conditions of towns in Manchuria are notoriously bad, and the soil is impregnated with filth and unremoved garbage.

*Manner of spread.*—This is mainly due to the railway (the Imperial Railway of North China). Though the necessary quarantine and inspection measures were not put into force till many people had come through from the infected area, the railway traffic may now be said to be under proper supervision. Foreign medical men are in charge of all the main stations, and by order of the Prince Regent all traffic has been entirely suspended from Mukden in Central Manchuria to the Great Wall. But this has been only a part of the battle. Finding the trains stopped, the Chinese took to the road. Manchuria is invaded every year by thousands of coolies and agricultural labourers from the large provinces of Shantung and Chihli, who go north to earn the high wages prevalent there. With the approach of the Chinese New Year they return in legions, keen to be home for their great annual festival. They will go through fire and water to get back, and it is to such that practically all the cases south of the Great Wall are due. If stopped travelling by train, they tramp the distance by roads—on which no adequate precautions against infection have been taken—and nothing short of the most drastic measures will keep them back. To prevent this flood of coolies pouring into Dairen, the port from which they cross into Shantung, the Japanese have stretched a military cordon across the neck of the peninsula by Kiuchow, and are threatening to strengthen this cordon with a live (electric) wire fence.

In the beginning of January the Imperial Government sent Dr. J. G. Gibb of the Union Medical College to help Dr. Gnoh Lean Tuck at Harbin (to whom I referred in my last letter). Shortly after this Dr. Mesny, the French medical man, became infected while visiting the Russian Hospital and died two days later from pneumonic plague. Since then Dr. Aspland and Dr. J. M. Stenhouse, also of the Union Medical College, have gone up on behalf of the Imperial Government and have been doing all they can to fight the epidemic. At every station down the line medical missionaries have come forward in the most gallant way and borne the brunt in combating the most appalling conditions. At Mukden Dr. A. F. Jackson, of the Scotch Presbyterian Mission, has succumbed to plague, as well as three trained Chinese medical men. The medical profession at the present moment, by these sacrifices and by the number of willing volunteer practitioners, stands higher in the estimation of the Chinese Government than it ever did before. The struggle has been almost entirely in the hands of medical missionaries. If it were not for them China would have to meet this epidemic with a few foreign-trained Chinese medical men of little experience, and lacking in the necessary foresight for preventive measures. The Central Government has been fortunate in having an able and enlightened official at the head of plague affairs. The Honourable Saoke A. Sze (an American M.A.) has from the beginning taken a wide view of the whole question, and if only his orders had been carried out by local officials it is probable that many lives would have been spared. Mr. Sze has concerted with foreign medical men, followed their advice, and by dint of hard work has got quarantine stations established and much preventive work put in hand. The local officials in Manchuria have not only remained apathetic and indifferent but have consistently maintained their dislike and disregard of anything savouring of foreign intervention, even though obviously in their own interests. The Chinese Government has acceded to the request of the Russian Government to appoint an international commission of plague experts from certain Powers. It is doubtful if there are any experts available who can come with an experience gained from similar epidemics, for the local conditions differ very much from those of bubonic plague. No doubt such a commission will be of value later, but for the present there is dire need of foreign medical men at the various stricken towns. The Government offers all local travelling expenses, 300 taels a month (a tael is worth 2*s.* 9*d.*), and an indemnity in case of death of 10,000 taels, to any medical man who may volunteer to help.

*Inoculation.*—It is too early yet to give figures of the value of Haffkine's prophylactic vaccine. I am at present endeavouring to gather information on this point. Medical advices from Harbin have not spoken favourably of Yersin's serum, though they incline to think favourably of Haffkine's vaccine. There is ample scope for bacteriological work, as it is increasingly felt that the difference in type of the epidemic from those recorded elsewhere calls for the manufacture of vaccine on the spot from the local bacillus.

Peking, Jan. 30th.

ROYAL SOCIETY OF MEDICINE: BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.—After the meeting of the section on Wednesday next, as announced in the weekly diary of events, the members will dine together at 7 P.M. at Pagani's Restaurant, Great Portland-street, W. The charge for the dinner is 3*s.* 6*d.*, and members may bring their friends. Dr. A. Manuel, 14, Clarges-street, Mayfair, London, W., would be glad to receive names of those intending to dine.

# Obituary.

## JAMES EDMUNDS, M.D. ST. AND., M.R.C.P. LOND., M.R.C.S. ENG.

THE death of Dr. James Edmunds, consulting physician to the London Temperance Hospital, is announced to have taken place on Feb. 16th at Brighton, where he had lived in retirement for some years past. He was born in 1832, and was the eldest son of the Rev. James Edmunds, an independent minister working among the people in the East-End of London. He received his medical education at the London Hospital, where he gained many distinctions, and qualified M.R.C.S. Eng. and L.S.A. in 1854. He took the degree of M.D. of the University of St. Andrews in 1862, and became a Member of the Royal College of Physicians in 1874. He was for 27 years medical officer of health and public analyst of the parish of St. James's, Westminster, and for seven years medical officer of the H division of the Metropolitan Police. After practising in the City of London for some years he interested himself in the question of the use of alcohol in disease, and wrote various papers on the Physiological Influence of Alcohol. He was one of the founders of the British Medical Temperance Association, and its president from 1876–79, and one of the founders of the London Temperance Hospital and its senior physician. He associated himself intimately with Cardinal Manning in the foundation of the Red Cross Temperance Society and with Canon Fleming in the Church of England Temperance and General Benevolent Society. A temperance advocate of great force and earnestness, Dr. Edmunds was not a fanatic, and his contributions to the literature of this subject were of a progressive and enlightening character. Dr. Edmunds was also a reformer in sanitation. He was cholera medical officer at Newcastle and Dundee in 1853, and contributed the article on the Chemical Analysis of Drinking Water in Sutton's "Volumetric Analysis." Another sphere of action in which Dr. Edmunds was a pioneer was the medical education of women. He founded a society called the Female Medical Society, which was merged afterwards in the London School of Medicine for Women, but as he was not in favour of carrying the medical education of women to the point of qualification and registration as medical practitioners he soon retired from his connexion with the movement.

Amongst his contributions to medical journals should be mentioned the article "Will-making in Aphasic Paralysis," published in the *British Medical Journal* in 1900. He then described the case of a lady, 60 years of age, who suffered from partial right-sided hemiplegia and motor aphasia, with agraphia and word-deafness, though the visual speech centre was unaffected, and who desired to make her will. Dr. Edmunds and Mr. Samuel Garrett, the lady's solicitor, devised a method for ascertaining the wishes of the testatrix by means of printed cards. The will was proved in due course in solemn form, the President of the Probate Court signifying his approval of the method adopted.

Dr. Edmunds was a frequent contributor to the *English Mechanic and World of Science* on all sorts of practical scientific subjects. His modification of Wenham's paraboloid illuminator for the microscope, by cutting the top off flat and fixing it to the slide by a drop of glycerine, thereby rendering it an immersion paraboloid, giving a dark background and luminous object, was described and figured in the same newspaper more than 20 years ago. Quite recently the same principle has been applied to the examination of bacteria and protozoa, with very gratifying results.

Dr. Edmunds leaves a widow, three sons (two of whom are members of the medical profession), and a married daughter.

## GIUSEPPE MYA.

PÆDIATRY has just lost one of its ablest promoters and masters in Dr. Giuseppe Mya, who held the chair set apart for that subject in the Florentine school.

Born at Turin on Sept. 25th, 1857, he became a student of medicine at the local university, and after passing through the curriculum with distinction he took his degree in July, 1881, as Doctor in Surgery and Medicine. Nine years of clinical experience in the Subalpine Hospital evoked his special aptitude in diagnosis and treatment, and in 1890 he was nominated Professore Straordinario in special medical pathology in the University of Siena, adding to his duties those of the chair of Propedeutica Clinica Medica in the same seat of learning. In 1891 he was called to Florence to act as professor of clinical pathology at the Istituto dei Studi Superiori, a post in which he acquired an honourable name both as teacher and consultant. Devoting himself to the diseases of children as a specialty, he rapidly became an authority in that branch of the healing art, attracting to his clinique many students from other schools desirous of perfecting themselves in the diagnosis and treatment of such ailments. In 1899 an invitation from the University of Naples to fill the chair of special medical pathology had many temptations for him, an increase of salary included, but he chose to stay in Florence, which he had made a centre of instruction in his favourite department. In the following year he founded the "Clinica Pediatrica" in the Meyer Hospital, and there he did his most effective work, in diagnosis, therapeutics, and instruction. By this time his pupils had become as numerous as they were enthusiastic, and it is due to him that Italy has of late years made such notable progress in circumscribing the area of infantile disease and the mortality caused by it.

For the last ten years he was in much request as a consulting physician in maladies of the adult, numbering in his *clientèle* many of the foreign residents in the Tuscan capital, and among these not a few of the English-speaking world. His kindly conciliatory address and his conversational charm contributed with his undoubted skill and marked success in practice to ensure his acceptance as a consultant, and to maintain him as the friend in circles where he had won his way as the physician. His contributions to medical literature were as valuable as they were numerous and varied. For special notice may be mentioned his treatise on the "Ittirizie" (the several forms of icterus); on the "Rigenerazione Sanguigna nelle Anemie da Distruzione Globulare"; on "Infantile Splenic Anæmia"; "Sulla Patologia del Rene e delle Vie Urinarie"; "Sul Valore Diagnostico e Curativo della Puntura Lombare"; and, not to mention a highly original and practically useful series of studies on meningitis, his exhaustive and still authoritative monograph on "The Causes and Remedies of Italy's High Infantile Mortality." It is in this field, as already indicated, that his chief professional interest lay and in which he reaped the most enduring reward—endearing himself to innumerable families by his opportune and happy intervention in cases which seemed to baffle every diagnosis less prompt than his own.

As a citizen he took part in municipal affairs, professionally as well as in the council chamber, again with a fertility of resource which seldom failed to solve the difficulty of the hour. But the life he led as clinical worker and as active practitioner proved too much for his strength, and it was foreseen that any illness contracted in his later years must have found him an easy victim. The visitation of influenza under which Florence as well as Rome has been adding to its sick list and death-rate made many calls on his time and strength. He fell ill on Feb. 4th, and after a brief struggle with the malady succumbed quite suddenly on Feb. 5th.

## CHARLES ALEXANDER MACMUNN, M.A., M.D. DUB., F.C.S., F.R.M.S., J.P., V.D.

THE death is announced of Dr. C. A. MacMunn of Wolverhampton. Dr. MacMunn was born in County Sligo in 1852, the son of Dr. James MacMunn. He received his medical education at Trinity College, Dublin, where he graduated M.B. in 1872, taking also the diploma L.R.C.S. Irel. and L.M. At the time of his death he was consulting physician to the Royal Orphanage, Wolverhampton, having retired from the position of pathologist and physician to the General Hospital, Wolverhampton. His contributions to science were many and varied. He was the author of volumes entitled "Clinical Chemistry of Urine" and "The Spectroscope in Medicine," and at the time of his death was engaged upon "The Outlines of Clinical Chemistry," which was nearing completion. He made numerous researches in and wrote several papers on physiological chemistry and animal pigments, published in the Transactions of the Royal Society and other scientific societies. He was also a contributor to the "Encyclopædia Britannica" and the author of articles in Quain's "Dictionary of Medicine." He was administrative

medical officer of the North Midland District Territorial Force, a keen soldier, and on the outbreak of the South African war he went out with the special medical staff, was mentioned in despatches, and received decorations for service. He was appointed by Lord Roberts as staff officer on the Commission which inquired into the administration of the medical service during the war. He was a magistrate for Staffordshire and life governor of the University of Birmingham. For many years he had a large practice in Wolverhampton and district until his failing health forced him to relinquish it and retire. Dr. MacMunn's second wife, who survives him, is a sister of the late Captain Webb, the famous swimmer.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Gustav Braun, formerly professor of midwifery in the University of Vienna and director of the Midwives' School. He was a younger brother of the eminent gynæcologist, Professor Carl Braun von Fernwald, and, like him, published numerous works on midwifery and gynæcology. Dr. Bohr, professor of physiology in the University of Copenhagen. Dr. C. Van Cauwenberghe, professor of midwifery and gynæcology in the University of Ghent. Dr. Guillery, formerly professor of forensic medicine in the University of Brussels. Dr. Giuseppe Albini, formerly professor of physiology in the University of Naples.

# Medical News.

UNIVERSITY OF OXFORD.—In Congregation on Jan. 26th the following degrees were conferred:—

*D.M.*—D. W. Carmalt Jones.
*B.M. and B.Ch.*—G. E. Neligan, G. E. Downs, and A. W. Donaldson.

The following have been elected members of the Board of Faculty of Medicine:—Sir W. S. Church, Bart., Dr. Samuel H. West, Dr. Walter Ramsden, Dr. E. W. Ainley Walker, Dr. William Williams, Dr. H. M. Vernon, Dr. Alexander G. Gibson, and Dr. J. W. Jenkinson.—In accordance with the provisions of the decree of Convocation of Feb. 7th, the examinations for the degree of Bachelor of Medicine will commence in the Examination Schools for the First B.M. on June 15th and for the Second B.M. on June 14th, and not as previously advertised.

ROYAL COLLEGE OF SURGEONS IN IRELAND: DENTAL EXAMINATION.—W. J. Maher and J. L. Moulang have passed the examination of the First Dental Division A. G. Sheedy and A. C. Wiley have passed the examination of the First Dental Division B. P. I. Wigoder has passed the Final Dental Examination and has been admitted a Licentiate in Dental Surgery.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Max Rothmann, *privat-docent* of Neurology, has been granted the title of Professor.—*Clausenburg:* Dr. Aladár Elfer has been recognised as *privat-docent* of Medical Diagnosis.—*Cologne (Academy of Practical Medicine):* Dr. Stürtz of Metz has been appointed Director of the Tuberculosis Department, in succession to Dr. Dantwiz.—*Gratz:* Dr. Eduard Streissler has been recognised as *privat-docent* of Surgery.—*Kiel:* Dr. F. Klein, of the Chemical and Physiological Institute, has been appointed Extraordinary Professor.—*Königsberg:* Dr. Rhese has been recognised as *privat-docent* of Otiatry and Laryngology.—*Lemberg:* Dr. Ladislaus Mazurkiewicz has been recognised as *privat-docent* of Pharmacognosis.—*Göttingen:* Hitherto there has been no regular Dental Institute, Professor Heitmüller having given instruction to dental students in his own dental surgery. He has now been appointed to a post in Dresden and there is at present no instructor. It is, however, proposed to establish a fully-equipped Dental Institute with the required *docenten*.—*Marburg:* Dr. Martin Benno Schmidt has been offered the chair of Pathological Anatomy in succession to Professor Beneke.—*Rostock:* Dr. F. K. Walter has been recognised as *privat-docent* of Anatomy.—*Vienna:* Dr. Hermann Ulbrich has been recognised as *privat-docent* of Ophthalmology.

LITERARY INTELLIGENCE.—A new series of volumes, under the title of "Notable English Trials," is announced for publication by Messrs. William Hodge and Co., Edinburgh and London. The first volume, entitled "The Trial of the Stauntons," will be issued on March 1st, and will be followed at frequent intervals by volumes dealing with, among others, the trials of Franz Muller, Dr. Palmer, Dr. Lamson, and the Wainwrights. "The Trial of the Stauntons" is edited by Mr. J. B. Atlay. Amongst the editors of the other trials may be mentioned the names of Mr. H. B. Irving, Mr. George H. Knott, Mr. David N. Mackay, and Mr. H. L. Adam. Each volume will be fully illustrated, and the series, when complete, will form a permanent record of the most famous of English trials. The price of each volume will be 5*s.* net.

ST. THOMAS'S HOSPITAL AND THE LAMBETH GUARDIANS.—At a recent inquest held on a woman named Annie Johnson, who died from bronchitis and pneumonia accelerated by starvation and exposure, it was stated that she was found by the police in the street in an exhausted condition and conveyed to St. Thomas's Hospital. After examination by a casualty officer the woman was sent by him in the police ambulance to Lambeth Infirmary, where she died a few hours after admission. The facts were reported to the Lambeth board of guardians, who forwarded them to the hospital authorities. At a meeting of the guardians on Feb. 15th a reply from the secretary of St. Thomas's Hospital was read. It stated that a very full investigation of the circumstances had been held. Had there been a chance of admitting the case it would have been taken in, but the female admitting ward was already overcrowded, and the casualty officer was unwilling to overcrowd it still further by admitting what seemed to him a case for the infirmary. The committee regretted that the case was not taken in if by this means the woman's life could have been saved, but it did not think that this was a case in which any censure was due from it on the action adopted by the medical officer of the hospital. The Rev. Walter Hobbs characterised the reply as extremely satisfactory. Mr. C. W. Baldwin said that what he liked most was the desire of the almoners and the authorities at St. Thomas's Hospital to work harmoniously with the guardians, a view in which the Rev. A. O. Hayes, vice-chairman of the board, acquiesced.

HAPHAZARD MIDWIFERY.—An instance of the fact that, despite the efforts of education authorities and municipal bodies, the old-fashioned type of nurse and midwife still persists was afforded at Wandsworth on Feb. 18th, when Mr. John Troutbeck held an inquiry concerning the death of an infant, aged 19 days, son of a coal porter who lives in Putney Bridge-road. The mother, a woman of more intelligence than is usual among persons in her station, said she was attended in her confinement by a Mrs. West of Sudlow-road, Wandsworth, to whom she paid a fee of 6*s.* Mrs. West on examining the patient recognised that it was a difficult case, for she said she thought it was "all wrong." She also said she thought she could manage, and she proceeded to manage, with the result that the infant's arm was broken. After this accident she said to the mother, "I've broken the child's arm; I couldn't help it." Even then she did not send for a medical man or suggest that one should be called in. When the mother's sister-in-law asked if a medical man should be fetched Mrs. West replied that she knew her business. She bound up the child's arm. The little sufferer was afterwards taken daily to Bolingbroke Hospital till he became too ill. Mrs. West did not attend the inquest. The coroner's officer said she was an old woman. He had found her in bed that morning and she had then told him she was suffering from influenza, but he had been informed that all the Thursday night previous she had been out nursing a patient. Mr. W. G. McDowell, a medical practitioner of Easthill, Wandsworth, who was called in by the parents, gave Mrs. West's account of the matter as he had heard it from Mrs. Smith, the child's mother. Mrs. West called it a breech presentation, though a hand came first, and then a foot after Mrs. West had put the hand back. Subsequently she had great difficulty in getting one of the arms down and in her efforts she broke the limb. Mr. McDowell, in reply to questions, said the case was one which no midwife ought to have undertaken. Trained midwives, in fact, were told that they must not attempt such cases. Dr. L. Freyberger, who made the post-mortem examination, gave the cause of death as heart failure, accelerated by inflammation of the lungs and by the injury to the arm. He agreed that a case of this kind was far beyond the skill of a midwife. The coroner, addressing the jury, said midwives were allowed to practise under very

stringent conditions, one of which was that they should not conduct a difficult case without professional assistance. It would be going too far to say Mrs. West was guilty of manslaughter. She was obviously incompetent to take the case and she caused the injury to the arm, but there was no question of maliciousness. He suggested that the jury should return a verdict in accordance with the medical evidence. The jury adopted this suggestion, and in addition they censured Mrs. West. An official from the London County Council said that the facts would be placed before the committee and there might be further proceedings.

A MEDICAL MAN REWARDED FROM THE CARNEGIE FUND.—At the Thames police court the magistrate, Mr. Dickinson, presented on Feb. 18th the awards made from the Carnegie Heroes Fund to Mr. Nelson Johnstone, Mr. F. Gascoyne, and Mr. F. Levy, in recognition of their conduct in assisting in the removal of Detective-Sergeant Leeson after he had been shot in the early stages of the "Sidney-street Siege." Mr. Johnstone is the medical man who, when summoned by Mr. Levy to the side of the wounded sergeant, made his way to the scene, partially clad, over the roofs of several houses, tended his patient under a heavy fire of pistol-shots from No. 100, Sidney-street, and was himself grazed by a bullet during one of the attempts made to carry the officer to a place of safety. Addressing Mr. Johnstone, to whom he presented a medallion and a cheque for £10, Mr. Dickinson said: "You are a member of a profession which has ever been associated with deeds of heroism and courage and self-sacrifice. Whether those deeds are performed in the pursuit of scientific motives or the amelioration of the sufferings of humanity, or in the plague-stricken districts of Northern China or in the bullet-swept streets of East London, they are equally brave. You yourself have high ideals, evidently, and on Jan. 3rd they moved you to make a heroic endeavour to save the life of a sorely wounded man, and you were willing to imperil and to sacrifice, if necessary, your life in pursuit of those ideals. I congratulate you upon your bravery, and am glad it has fallen to my lot to present you with this token of grateful appreciation." The congratulation and appreciation expressed by the learned magistrate will be heartily echoed by Mr. Johnstone's colleagues in the profession, the credit of which he has so worthily upheld.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The dinner given by this society on Wednesday, Feb. 22nd, at the Hotel Great Central, the President, Dr. Phineas Abraham, being in the chair, was well attended. The President was supported by Sir James Porter, K.C.B., Medical Director-General of the Navy; Sir Henry Morris, President of the Royal Society of Medicine; Dr. Charters J. Symonds, President of the Medical Society of London; and Mr. Ernest Lane, President of the Harveian Society. After the usual loyal toasts, the toast of the "Imperial Forces" was proposed by Mr. McAdam Eccles and responded to by Sir James Porter, who pleaded for encouragement and support for Mr. Haldane in the present military organisation, which was the last word before conscription. The speaker expressed his own dislike of the idea of conscription, which did not, however, arouse any enthusiasm in his audience; but when he dilated later on the advantages of conscription his remarks were received with applause. Mr. Charters Symonds, in toasting the West London Medico-Chirurgical Society and the West London Hospital, took issue with those who stayed away from meetings and contented themselves with reading the papers afterwards. He insisted on the importance of the personal element. He eulogised the great work of the Cavendish lectures and congratulated the society on their forthcoming lecturer. Other toasts were "Kindred Societies," proposed by Dr. Barry Ball, responded to with considerable humour by Mr. Ernest Lane; "The Guests," by Lieutenant-Colonel Wilson, C.B., responded to by Sir Frederick Eve and Mr. Mostyn Pigott; and "The Chairman," by Dr. Arthur Saunders. Mr. James Davis, Mr. Edgar Coyle, Mr. Charles Collette, Mr. Stuart Debnam, and Mr. John Ivimey contributed to the entertainment of the evening with songs.

THE NATIONAL COUNCIL OF TRAINED NURSES OF GREAT BRITAIN AND IRELAND.—On Feb. 18th a Pageant and Masque took place at the Connaught Rooms, Great Queen-street, London, in support of the "Bill for the State Registration of Trained Nurses." The play, designed by Mrs. Bedford Fenwick, and the words for which were written by Miss M. Mallett, portrayed the Evolution of Trained Nursing and the Right of Life to Health. There was a very large attendance of nurses, medical men, and others interested in furthering the reform which it is hoped that State registration will bring about. The pageant opened with a procession of Immortals headed by Hygeia, impersonated by Miss Irene Fergusson. She was attended by the Four Elements, and followed by the Sprites of Nursing and Science attended by their attributes. After these came a procession of saintly women and women of the nursing religious orders of the centuries from Phœbe of Cenchrea of the first century to Elizabeth Fry of the nineteenth. The procession closed with a banner on which was inscribed the name of Florence Nightingale. The third procession was of hospital matrons and the fourth of nurses past and present. Outstanding figures in the procession were "Sairey Gamp," and a male plague attendant whose "beak" respirator gave a grotesque appearance to the face. The last procession, representing Bills, Acts, Societies, and the Nursing Press, was intended to clinch the argument in favour of State registration, and its arrival was greeted with loud applause. The words of the masque, consisting of prologue, petitions, and epilogue, reach a degree of excellence upon which the writer is to be congratulated, as are also those who took part in the production and arrangement of the pageant.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*Public Health (Ireland) Bill.*

THE Public Health (Ireland) Bill, which has been introduced in the House of Commons by Captain O'NEILL, deals with the sale of meat in urban districts. The principal clause provides that subject to the approval of the Local Government Board, Ireland, any urban council in Ireland may make by-laws with respect to the conduct and management of any abattoir provided by them, and may prohibit within the urban district the sale of any meat otherwise than subject to such regulations as to inspection and otherwise as may be fixed by the urban council in such by-laws. The Bill has been read a first time. Captain O'NEILL, in bringing forward the measure, has the support of Mr. HUGH BARRIE, Mr. MOONEY, Mr. STEPHEN GWYNN, Mr. CHARLES CRAIG, and Mr. EUGENE CREAN.

## HOUSE OF LORDS.

TUESDAY, FEB. 21ST.

*Asylum Officers' Superannuation.*

Lord MONKBRETTON asked His Majesty's Government whether the opinion of the law officers of the Crown had been taken on any question relating to the administration of the Asylums Officers' Superannuation Act, 1909, and whether His Majesty's Government would make any statement on the subject.—Earl BEAUCHAMP replied: The opinion of the law officers of the Crown is being taken by the Home Office with reference to several questions which have arisen under the Asylums Officers' Superannuation Act, 1909, in connexion with appeals to the Secretary of State under Section 15 of the Act by officers and servants of certain asylums. The law officers are being asked by the Home Secretary to advise as to the extent of the Secretary of State's jurisdiction to determine disputes as to the right to superannuation allowance or as to the amount of such allowance, and generally as to the circumstances in which there is any appeal from the decision of a visiting committee under the Act. When the opinion of the law officers is received the effect of it will be made known to visiting committees and others who may be concerned. The Local Government Board has already obtained from the law officers an opinion as to the proper construction to be placed on Section 12 of the Act with reference to the fund out of which superannuation allowances and gratuities are to be paid, and the effect of this opinion is being communicated in a circular letter to the visiting committees of asylums in England and Wales.

## HOUSE OF COMMONS.

WEDNESDAY, FEB. 15TH.

*Poor Relief and Medical Certificates.*

Mr. GOULDING asked the President of the Local Government Board whether the latest official declaration of policy from his department with regard to relief to the respectable aged was the circular of the President of August 4th, 1900, printed in the thirtieth annual report, in which it was laid down that such persons were not to be urged to enter the workhouse at all, unless from actual infirmity, &c., but that, irrespective of any medical certificate, adequate outdoor relief should be granted to them; whether it was customary in accordance with this circular in most unions to grant, without any medical certificate and irrespective of any specific infirmity, outdoor relief to such deserving aged persons as were not entitled to old-age pensions; and whether the draft order as to out-relief, the issue of which was under consideration, would prohibit such outdoor relief in respect merely of old age. The honourable Member also asked whether the right honourable gentleman was aware that the effect of the proposed Outdoor Relief Order would be to transfer the discretion as to the grant of outdoor relief to aged persons from the guardians to the medical officer, and to make it dependent on

his giving a certificate that the aged person was suffering from some specific disease; and whether, in view of such a marked reversal of policy with regard to the deserving aged as compared with that promulgated in the Circular of the Local Government Board of August 4th, 1900, some opportunity would be afforded to the House of Commons to express an opinion on the subject before, by the signing of the proposed new Order, the reversal of policy was carried into effect.—Mr. BURNS (answering both questions) said: I see no reason to dissent from the view that the circular to which the honourable Member refers may be regarded as the latest declaration of the policy of the Local Government Board with regard to the relief of the aged deserving poor, and I am happy to think that the principles there laid down are very generally acted upon by boards of guardians. I may point out that it would not be necessary under the order proposed by the Departmental Committee that a medical officer should certify that an aged person is suffering from some specific disease. A certificate that he is infirm through old age would seem to satisfy the requirements of the Order. The report of the committee is receiving my careful consideration, and I do not propose to take any action upon it at the present moment.

*Rats and Plague.*

Mr. GEORGE ROBERTS asked the President of the Local Government Board whether it had been proved that rats and rabbits in East Anglia were infected with plague bacillus; whether any cases had arisen of such infection being carried to human beings; and whether action was being taken in the matter.—Mr. BURNS answered: A certain number of rats and rabbits in East Anglia have been found to be infected with plague. Four suspected cases of human plague occurred in this area as long ago as September last, but since then no further cases have been observed. Both the local authorities and my department have been taking active measures in the destruction of rats and the investigation of the extent of prevalence of plague amongst rodents and the delimitation of the affected area. Careful watch is also being kept at the ports against the introduction and spread of rat plague.

THURSDAY, FEB. 16TH.

*Precautions Against Plague.*

Mr. GINNELL asked the Secretary of State for Foreign Affairs whether, in view of the danger to unoffending nations from the spread of plague and other preventable diseases, he could see his way to initiating some international movement towards more general observance of the fundamental laws of health and sanitation; and whether British consuls in the principal foreign cities would be asked to report on these subjects and on any precautions now being taken against plague.—Sir EDWARD GREY replied: In 1903 an International Convention was concluded at Paris with the object of applying in a systematic manner the most modern methods of resisting the spread of plague and cholera. His Majesty's Government and most European countries are parties to this convention, and it is open to any country which has not yet adhered to do so at any time. His Majesty's Consular officers abroad always report the appearance of any case of plague, cholera, or yellow fever within their consular district, and the special measures or regulations put into force for the purpose of checking the spread of the disease. During the continuance of any outbreak they are expected to furnish short telegraphic reports at least weekly, showing the number of cases and deaths and the name of the locality affected, and in the case of the present epidemic in Manchuria reports are received almost daily.

*Health Measures in Tientsin.*

Earl WINTERTON asked the right honourable gentleman whether his attention had been called to the protest of the European doctors at Tientsin against the refusal of the foreign consuls to order a sanitary cordon round the European settlement; and whether he would instruct His Majesty's consuls at Tientsin and elsewhere to support the proposal of the foreign medical officers.—Sir EDWARD GREY replied: His Majesty's Government have not so far heard of the protest referred to, but His Majesty's Minister at Peking has been asked by telegraph for a report on the matter.

*Inspector of Lunatics in Ireland.*

In reply to Mr. O'SHAUGHNESSY, Mr. BIRRELL (Chief Secretary to the Lord Lieutenant of Ireland) said: I am well aware and am daily reminded by applicants that the post of inspector of lunatics in Ireland is about to become vacant. In filling the office due regard will be had to the experience of candidates in the management of lunatic asylums and in the treatment of the insane.

*The Midwives Bill.*

Mr. ROBERT HARCOURT asked the President of the Local Government Board whether it had been brought to his notice that there was a growing feeling of opposition to certain provisions in the two successive Midwives Bills introduced by the Government last session, notably the proposed importation for the first time of the machinery of the Poor-law, and the proposed annual renewal of the midwives' registration; whether, with a view to securing the much-needed amendment of the Midwives Act, he would consider the desirability of omitting the provisions to which so much objection was taken; and whether it was intended to introduce any measure on the subject during the present session.—Mr. BURNS answered: I understand that the President of the Council has a Bill ready for introduction from which it is proposed to omit what is known as the annual renewal of midwives' registration. The provisions of the Bill dealing with the payment of medical men called in at the suggestion of midwives were included in the Bill in order to give to medical men some security for their fees, and I should expect that the omission of the provisions would cause disappointment to the medical profession.

Mr. HARCOURT: Is it to be understood that the provisions on the latter point are the same as in the last Bill?

Mr. BURNS: I am not in a position to state that definitely as I am to receive two or three deputations.

*The Royal Commission on Vivisection.*

Mr. IAN MALCOLM asked the Home Secretary when the report of the Royal Commission on Vivisection would be published.—Mr. CHURCHILL answered: I am informed that the report is under consideration, and that although no date can yet be fixed, it is hoped that it may be submitted shortly.

*The Medical Services of India.*

Mr. KELLY asked the Under Secretary of State for India whether the attention of the Secretary of State had been drawn to the resolution passed at the meeting of the Indian National Congress, held at Allahabad on Dec. 28th, 1910, thanking him for his despatch regarding the employment in the superior posts of the civil medical service and requesting the Government of India to take early action in the direction indicated by the Secretary of State for India, and pointing out that in the interests of the public, the medical service, and the profession, as well as in the interests of economy in public expenditure, it was highly desirable that a distinct Indian civil medical service should be constituted, wholly independent of the Indian military medical service; whether he had yet received from the Government of India any report on the various issues concerning the various medical services of India therein referred to; and when did he propose to bring the higher grades of the medical service within reasonably easy access of Indian medical men.—Mr. MONTAGU wrote, in reply: The resolution to which the honourable Member refers has not yet reached the Secretary of State. A despatch on the general question has been received from the Government of India and is under consideration. As regards the final sentence of the honourable Member's question I have nothing to add to the information that I have already given to him.

MONDAY, FEB. 20TH.

*Children in Metropolitan Workhouse Infirmaries.*

Sir ALBERT SPICER asked the President of the Local Government Board whether he would state the number of children at present maintained in the workhouses of the metropolis and the workhouse infirmaries of the metropolis respectively, differentiating between those over and under three years of age.—Mr. BURNS replied: According to the latest returns available there were on July 1st last 21,043 children of all ages in metropolitan Poor-law institutions, of whom 1226 were in workhouses. The number of children under three in infirm wards was 106, and of children over three 34. As to children in other workhouse wards the numbers were, children under three 706 and children over three 380.

*The Water-supplies of England and Wales.*

Mr. REMNANT asked the President of the Local Government Board what steps he proposed to take as a result of the recommendation of the Joint Select Committee on the Water-supplies (Protection) Bill, July 18th, 1910, which agreed with the recommendations of the Royal Commission on Sewage Disposal and of the Royal Commissions on Water-supply of 1869 and on Metropolitan Water-supply of 1893, all of which asserted the principle that there was urgent need for a survey, at once comprehensive and in detail, of the water-supplies and water needs of the country and for the adoption of measures for conserving the supply and disposing of it to the best advantage.—Mr. BURNS answered: In pursuance of an order of the House a return is being prepared relating to the water-supply of every district in England and Wales. This will include information as to the quantities of water now being supplied in each district and as to what further quantities could be supplied from sources at present in use, together with the information as to the character and situation of these sources. I have also obtained the authority of the Treasury to the appointment of a geologist on the staff of my department. I am not without hope of introducing a Bill giving effect to the recommendations of the commission referred to.

*Sleeping Sickness in Rhodesia.*

Mr. NIELD asked the Secretary of State for the Colonies whether large areas of country in Rhodesia had been infected by the malady known as sleeping sickness, and had been declared proscribed areas; whether, in such areas, all cultivation and other work had been suspended; and, if so, what organised effort was being made, and by whom, to stamp out the disease and destroy the cause of infection.—Mr. HARCOURT wrote in reply: Yes, Sir, considerable areas in the Luapula and Luangwas valleys have been declared sleeping sickness areas. I do not think that cultivation is necessarily suspended, though it is necessary sometimes to clear areas near the rivers and the disease is a most serious hindrance to ordinary life and industry. Travelling is forbidden without permits, villages have been removed at the expense of the Government, and the British South Africa Company is taking various other measures in coöperation with the Belgian authorities for dealing with the sickness. The company has strengthened its medical staff and is now sending out a special commission of investigation with a scientific staff and a fully equipped laboratory.

Mr. NIELD also asked the right honourable gentleman whether he had any information as to the destitution caused among the colonists and natives of Rhodesia consequent upon the prevalence of sleeping sickness over large areas, which had been proscribed; whether any, and what, steps had been, or would be, taken to afford relief where necessary, and by whom; and whether there was adequate medical assistance to grapple with the known cases and to enforce precautions against the spread of the disease.—Mr. HARCOURT replied: I am not aware of any special destitution, certainly not among the Europeans, of whom there are very few in North-Eastern Rhodesia. But the prevalence of this terrible disease must necessarily cause suffering among the populations affected. In reply to another question I am indicating the measures taken by the British South Africa Company, which is responsible for the government of the country, to grapple with the disease.

TUESDAY, FEB. 21ST.

*Measles at the Royal Naval Colleges.*

Mr. TYSON WILSON asked the First Lord of the Admiralty whether, in connexion with the outbreak of measles at the Royal Naval Colleges of Dartmouth and Osborne, he could state whether efficient precautions were taken in the making of the uniforms of the naval cadets to prevent the possibility of such outbreaks emanating from that source; whether he was aware that the uniforms of the cadets at the Royal Military Academy were made in Government workshops under strict sanitary conditions; and whether he would inquire as to whether similar precautions were taken in the making of the uniforms of the naval cadets.—Mr. MCKENNA replied: The Admiralty have no reason to suppose that the firms who are employed by parents of naval cadets to make uniforms do not take proper precautions for the protection of their customers, or that infectious disease has ever been introduced into the colleges in the manner suggested.

*Vaccination in the Navy.*

Mr. POINTER asked the First Lord of the Admiralty whether, in view of the fact that the number of small-pox cases in the Navy had been

very small for the last few years, owing to the strict measures of isolation now adopted and the numerous improvements in the general treatment of the men, he could see his way to extend to naval recruits the same liberty of conscience in regard to vaccination as had already been granted to other branches of the Government services.—Mr. MCKENNA wrote in reply: As the danger of the spread of infection is very largely increased by the peculiar conditions of life on board ship, it is not proposed to relax the present regulations with regard to vaccination.

## BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.

Modern Methods of Water Purification. By John Don, F.I.C., A.M.I.Mech.E., and John Chisholm, A.M.I.Mech.E., Engineer and Manager of the Airdrie, Coatbridge, and District Waterworks. Price 15*s.* net.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

A Text-book of Gynæcological Surgery. By Comyns Berkeley, M.A., M.D., B.C. Cantab., F.R.C.P. Lond., M.R.C.S. Eng., and Victor Bonney, M.S., M.D., B.Sc. Lond., F.R.C.S. Eng., M.R.C.P. Lond. Price 25*s.* net.

CHURCHILL, J. AND A., London.

Urine Examination Made Easy. A Plan of Examination with the Common Tests Fully Described. By Thomas Carruthers, M.A., M.B., Ch.B. Second edition. Price 1*s.* 6*d.* net.

Vicious Circles in Disease. By Jamieson B. Hurry, M.A., M.D. Cantab. Price 6*s.* net.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.

University of London. Francis Galton Laboratory for National Eugenics. Eugenics Laboratory Memoirs. XII. Treasury of Human Inheritance. Parts V. and VI. Section XIV. A: Hæmophilia. By William Bulloch, M.D., and Paul Fildes, M.B., B.C. With 17 Plates of Pedigrees and 1 Plate of Illustrations. Plates XXXIV.-L. Plate N. Pedigrees, Figs. 373-607, 493 bis. Price 15*s.* net.

FISCHER, GUSTAV, Jena.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Dreizehnte Lieferung. Band II. Physiologie des Stoffwechsels. Physiologie der Zeugung. Erste Hälfte. Price M.5.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Cholera and its Treatment. By Leonard Rogers, M.D., F.R.C.P., F.R.C.S., B.S., I.M.S. Price 10*s.* 6*d.* net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

Modern Methods of Sewage Purification: A Guide for the Designing and Maintenance of Sewage Purification Works. By G. Bertram Kershaw, Consulting Engineer. Price 21*s.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Alcoholic Fermentation. By Arthur Harden, Ph.D., D.Sc., F.R.S., Head of the Biochemical Department, Lister Institute, Chelsea. Price 4*s.* net.

WITHERBY AND CO., 326, High Holborn, London, W.C.

The Liverworts, British and Foreign. By the Right Honourable Sir Edward Fry, G.C.B., with the Assistance of Agnes Fry. Price 2*s.* 6*d.* net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALCOCK, G. H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Creech St. Michael District of the county of Somerset.

BEALE, PEYTON T. B., F.R.C.S. Eng., has been appointed Consulting Surgeon to the Great Northern Central Hospital.

BELL, CLIFFORD T., M.B., C.M. Aberd., has been appointed Resident Medical Officer at the Oldmill Poorhouse, Aberdeen.

BRASHER, CHARLES WILLIAM JAMES, M.B., Ch.B. Bristol, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Registrar to the Bristol Royal Infirmary.

CAMPBELL, SYDNEY, M.B., Ch.B. St. And., has been appointed Medical Officer to the Dundee Post-office.

CHAPPLE, HAROLD, B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

CLARKE, WILLIAM BRUCE, F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 42.

CUNLIFFE, ERNEST NICHOLSON, M.D. Vict., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 7 and 8, and to be attached more particularly to Salford and Manchester County Courts.

DAVIDSON, PATRICK MOIR, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 9, and to be attached more particularly to Macclesfield, and Congleton and Sandbach County Courts.

HAY, PERCIVAL J., M.D., Ch.B. Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 16, with a view to his being employed in all Ophthalmic Cases which may arise in the Circuit.

HEREFORD, CHARLES FRANCIS ALEXANDER, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Dental Anæsthetist to the Bristol Royal Infirmary.

JOHNSON, G. W., M.B., B.S., has been appointed House Physician at University College Hospital.

THOMSON, HERBERT CAMPBELL, M.D. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 40.

TUKE, A. L. S., M.B., M.Ch. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dunfermline District of the county of Fife.

WILLIAMS, D. LLEWELYN, F.R.C.S. Edin., D.P.H., has been appointed Medical Officer of Health to the Denbigh County Council.

WRIGHT, ANDREW JOHN METFORD, M.B., B.S. Lond., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgical Registrar to the Bristol Royal Infirmary.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ABERDEEN ROYAL INFIRMARY.—Assistant Medical Electrician.

ASHTON-UNDER-LYNE UNION WORKHOUSE.—Assistant Medical Officer. Salary £150 per annum, with rations, laundry, and residence.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BURY AND DISTRICT FEVER AND SMALL-POX HOSPITALS AND SANATORIUM FOR CONSUMPTIVES.—Medical Superintendent. Salary £400 per annum.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon] for six months. Salary £70 per annum.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer, as House Physician for first six months and House Surgeon for ensuing six months. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary at rate of 100 guineas per annum.

DERBY, COUNTY BOROUGH OF.—School Medical Officer. Salary £250 per annum.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

DUMFRIES, COUNTY AND BURGHS OF.—Medical Assistant to Medical Officer of Health and School Medical Officer. Salary £250 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, and laundry. Also Officer for the Electrical Department.

EDINBURGH ROYAL INFIRMARY.—Superintendent. Salary £600 per annum, with house, coal, and light.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, fire, &c. Also Honorary Dental Surgeon.

GARTLOCH MENTAL HOSPITAL, near Glasgow.—Resident Assistant Physician. Salary £125 per annum.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging. Also Casualty House Surgeon for six months. Salary at rate of £60 per annum, with board and lodging.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, and attendance.

KING EDWARD VII. MEMORIAL SANATORIUM FOR SHROPSHIRE.—Resident Medical Officer, unmarried. Salary £200 per annum, with board and residence.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100, with board and lodging. Also Honorary Dental Surgeon and Honorary Assistant Dental Surgeon.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Surgeons and Two House Physicians for six months. Salary at rate of £60 per annum, with board and residence.

LLANYBYTHER, CARMARTHENSHIRE, WEST WALES SANATORIUM.—Medical Superintendent. Salary £250 per annum, with board and residence.

LONDON FEVER HOSPITAL, Liverpool-road, Islington, N.—Physician and Assistant Physician.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, near Manchester.—Resident Medical Officer, unmarried. Salary £90 per annum.

MILLER GENERAL HOSPITAL FOR SOUTH EAST LONDON, Greenwich-road, S.E.—Senior and Junior House Surgeon, each for six months. Salaries £100 and £80 per annum respectively, with board, attendance, and laundry.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Lecturer on Public Health.

NEW HOSPITAL FOR WOMEN, Euston-road.—Senior Assistant (female) in Out-patient Department.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Honorary Anæsthetist.
PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, &c.
ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—House Physician. Salary £110 per annum, with board and residence.
ROYAL EAR HOSPITAL, Soho.—Honorary Assistant Anæsthetist.
ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.
ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Lecturer on Anatomy. Salary at rate of £350 per annum.
ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence, attendance, and midwifery fees.
ST. THOMAS'S HOSPITAL.—Obstetric Physician.
SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.
SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.
SHEFFIELD ROYAL HOSPITAL.—Honorary Assistant Ophthalmic Surgeon, Honorary Physician for Skin Diseases, and Honorary Assistant Dental Surgeon.
SHEFFIELD UNIVERSITY.—Demonstrator in Anatomy. Salary £150 per annum.
SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board and washing.
SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence. Also Senior House Surgeon. Salary £100 per annum, with board, washing, and residence.
SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.
TAUNTON UNION, ST. JAMES DISTRICT.—Medical Officer. Salary £85 per annum.
TOWER HAMLETS DISPENSARY, Whitehorse-street, Stepney, E.—Resident Medical Officer. Salary £100 per annum, with apartments, washing, light, and attendance.
UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—Second Demonstrator.
WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.
WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House Surgeon, unmarried. Salary £75 per annum, with board, residence, and washing.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.
WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing. Also Honorary Surgeon.
WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry.
WORCESTER COUNTY AND CITY ASYLUM, Powick, Worcester.—Third Assistant Medical Officer. Salary £140 and all found.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Mold, in the county of Flint.

# Births, Marriages, and Deaths.

## BIRTHS.

HUNTER.—On Feb. 19th, at Normanhurst, Royston Park, Hatch End, the wife of Mark O. Hunter, M.A., M.R.C.S., of a daughter.
PERKINS.—On Feb. 18th, at "Comberton," Tunbridge Wells, to Dr. Philip and Mrs. Perkins, a son.
PHILLIPS.—On Feb. 14th, at Hamilton House, Penge, the wife of Harry Harding Phillips, M.R.C.S., &c., of a son.
PORTEOUS.—On Feb. 18th, the wife of Dr. Porteous, Newbury House, Weston-super-Mare, of a daughter.

## MARRIAGES.

CROMPTON—MAY.—On Feb. 14th, at St. Barnabas, Dulwich, Kenneth Edward Crompton, B.A., M.B., B.C., of Peachland, British Columbia, to Elsie, eldest daughter of Richard J. May, of Pond House, Dulwich.
HATFIELD—JAMES.—On Feb. 16th, at Lewisham, Henry Francis Hatfield, L.R.C.P., M.R.C.S., to Helena Emily James, widow of the late Charles James, and third daughter of Alexander Hunter, L.R.C.S. Edin.

## DEATHS.

BENNETT.—On Feb. 16th, at College House, Hammersmith, W., Charles Henry Bennett, M.D., J.P., late Honorary Surgeon-Major, 3rd City of London R.V.
CURNOCK.—On Feb. 13th, at Kendalcroft, Epping, George Dennis Curnock, L.D.S. Eng.
EDMUNDS.—On Feb. 16th, at Sussex-square, Brighton, James Edmunds, M.D., M.R.C.P., aged 79 years.
MCGEAGH.—On Feb. 17th, at Bournemouth, James P. McGeagh, M.D., the beloved husband of Mary McGeagh, of Bradstone, Branksome-avenue, Bournemouth.
MACMUNN.—On Feb. 18th, at 5, Lonsdale-road, Wolverhampton, Charles Alexander MacMunn, M.A., M.D., V.D., J.P., aged 58 years.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## INEBRIETY.

*S. A.* writes desiring to be referred to one or two authoritative books on inebriety. If our correspondent wants a work dealing specially with the medical aspect of inebriety, he will probably not find anything better in English than the old book by Norman Kerr—"Inebriety or Narcomania" (Lewis, third edition, 1894), despite some teetotal exaggerations. There is no modern book devoted solely to the subject from the point of view of treatment, and we do not think that the articles on it in the medical dictionaries are very satisfactory either. With Kerr's book should be read the text-books on insanity—with special mention of Legrain's article in Hack Tuke's "Dictionary of Psychological Medicine"—and works dealing with particular methods of treatment, such as Milne Bramwell or Tuckey *qud* hypnotism, the annual reports of the Norwood Sanatorium (Dr. F. Hare) as to drug treatment, &c. If, on the other hand, he is interested in the whole question of alcoholism, and wants books on its medico-sociological aspect, we can safely recommend "The Drink Problem," edited by Dr. T. N. Kelynack (Methuen, 1907). There are also some good, perhaps better, foreign books of the same sort—e.g., "Der Alkoholismus," by A. Grotjahn (Leipzig, Wigand, 1898), and the "Traité de l'Alcoolisme" of Triboulet, Mathieu, and Mignot (Paris, C. Naud, 1905). Dr. W. C. Sullivan's volume, "Alcoholism" (Nesbit, 1906) and Dr. Arthur Shadwell's "Drink, Temperance, and Legislation," are valuable studies of the question from the economic side. It is curious with all that is talked and written about the subject it should be so difficult to find a work that is not more or less disfigured by rhetoric or obscured by prejudice.

## THE FEEDING OF INFANTS.

*To the Editor of* THE LANCET.

SIR,—Can any of your readers tell me whether the two-hourly feeding commonly recommended for an infant in the first month or six weeks of life is founded on theory or on the natural demands of a normal infant? I am, Sir, yours faithfully,

Kilbarchan, Renfrewshire, Feb. 13th, 1911. THOS. CARRUTHERS.

*** The recognised method among English-speaking nations of feeding the new-born infant every two hours appears to be founded solely on usage and authority. There appears to be little physiological justification for such a practice, although it has been sanctioned and perpetuated by the writings of the most eminent authorities in this country and in America and by the practical example of the large maternity hospitals in London, Dublin, and in the provinces. Frequent feeding of this character is not practised on the continent. Dr. W. Camerer, writing in the last edition of Pfaundler and Schlossmann, advocates intervals of three and a half hours during the first three months of life, with an extension to four hours as the infant grows older. While in Professor v. Hutinel's text-book on the diseases of children, a work which may be said to be representative of French views on this subject, the intervals recommended for feeding the new born are set at two and a half hours. Dr. A. Czerny of Breslau, one of the greatest of living authorities on infant feeding, says: "The breast-fed should not be fed at all upon the first day of life, and on the following day only three or four times in the 24 hours. Afterwards five or six feedings in the day are sufficient. These directions are not given arbitrarily, nor do they follow any authority, but they are derived from observation of numerous breast-fed children who have had their food when they wanted it, and not according to the advice of a physician." Dr. Czerny is a strong advocate of long intervals between feeding; indeed, he declares in favour of prolonging rather than shortening the intervals. In cases of malnutrition or restlessness he says the minimum interval of feeding should be three hours.—ED. L.

## "STANDARD BREAD."

A CORRESPONDENT points out that the controversy on the relative merits of stone-ground and roller-milled flour, which has been recently revived with some ardour and success, was commenced in THE LANCET 30 years ago. In a letter which was published in this journal on June 10th, 1882, Mr. Stephen Harding Terry, M.I.C.E., referred to the probable future effect of roller milling on the health of the nation, the suggestion to introduce this method being apparently at that time a fresh one. We take one sentence from Mr. Terry's letter, which shows that his predictions and fears were amply justified. "When it is borne in mind," he wrote, "how large a portion of the population of this country (more especially children) live principally on bread, in some form or other, and that whilst growing they require a larger proportion of bone- and tissue-forming material than at a later period, I think the medical and engineering professions will agree with me when I state that the processes involved in the preparation of bread from grain should be such as to

leave in the resulting 'loaf' those elements which entitle it to its ancient name 'the staff of life,' and that the changes in the chemical composition of bread which are likely to follow an extended use of improved mill machinery ('high grinding') are well worthy the attention of medical men." This is an interesting contribution to the history of the roller-mill method of separating flour from the wheat grain.

## ANCIENT DRUG POTS AND PILL SLABS.

AT the sale at Christie's on Feb. 14th of the collection of porcelain and other objects of art formed by the late Sir John Evans, K.C.B., F.R.S., some time president of the Society of Antiquaries and a trustee of the British Museum, the undermentioned lots, in the Lambeth and other pottery sections, were disposed of at the prices indicated:—

A drug pot, painted with a winged mask in blue and the date 1668, and inscribed LEPVLM. WLF (extract of wolf's lungs) 7¼ in. high—6 guineas.

Two drug pots, nearly similar, painted with cherubs and shells in blue, and inscribed THER: LOND (London treacle) and C: CYNOSBA (conserve of the pips of the dog rose), 7¾ in. high—8 guineas.

A drug pot, painted with cupids, shells, and foliage, and inscribed THER: ANDRO (Venice treacle, antidote to poison), formerly the property of Sir A. W. Franks, K.C.B.; and one, with birds and foliage, inscribed V: ÆGYPTIAC (mullein), 8¼ in. high—5½ guineas.

A drug pot, painted with cherubs and foliage, and inscribed PHILº. LONDE, 7¼ in. high, and one, nearly similar, inscribed V. CERAT, 7¼ in high—6 guineas.

A large drug pot, inscribed E. LENITV, 11 in. high, formerly the property of Sir A. W. Franks. K.C.B.; a smaller jar, similarly inscribed, 7 in. high, from the same collection; and a jar inscribed U. NICOTIAN, 8 in. high—12 guineas.

A small drug pot, painted with birds and foliage in blue, and inscribed CONF. DE. HYACINTH, 3¼ in. high, and a pair of small pots, with cherubs, and inscribed P. TARTARAE and P. FOETIDAE, 3½ in. high—6 guineas.

A drug pot, painted with the arms of the Apothecaries' Company, and Chinese figures in blue, green, and yellow, 9 in. high—10 guineas.

An octagonal pill slab, painted with the arms of the Apothecaries' Company in blue, and motto in black, 10¼ in. by 8½ in.—7 guineas.

Another, nearly similar, with the arms and motto of the Apothecaries' Company in blue, 10¼ in. square—7 guineas.

Another, with the arms of the Apothecaries' Company and the City of London in blue, 10½ in. square—8½ guineas.

Another, painted with the arms of the Apothecaries' Company in blue, yellow, and green, 11 in. by 9¾ in.—8 guineas.

A shield-shaped pill slab, painted with the arms of the Apothecaries' Company in blue, 11 in. by 10¼ in.—7 guineas.

A drug pot, with spout, of Wincanton delft, inscribed RHABARB, 7 in. high, and one, of Liverpool delft, inscribed S. CYDONIAM, 6½ in. high—6 guineas.

## ENCEINTE.

*To the Editor of* THE LANCET.

SIR,—In THE LANCET of Feb. 18th your correspondent "Blancus" says: "There is a striking line in the Bible which says, 'A woman shall compass a man.' ..... The word compass here is surely used in the sense of '*entourer*,' to enclose, or surround. The French is 'La femme environnera l'homme.'" It may interest him to know that there is a French Bible published in 1904, La Haye Imprimerie, C. Blommendaal, C. H. Voorhoeve, successeur, which gives "une femme entourera l'homme."—I am, Sir, yours faithfully,

Feb. 18th 1911. EDW. MAHONY.

## PISTOLS AND THE HOUNDSDITCH MURDERS.

IN summing up to the jury at the inquest upon the body of Sergeant Bentley of the City police, one of the victims of the "Houndsditch murders," Dr. Waldo made observations upon the subject of the indiscriminate carrying of pistols which are in accord with what has been said frequently in the columns of THE LANCET. He seems, however, to have contemplated an unnecessary limit in the restrictions which he suggested should be imposed, if he is rightly reported as having said, "Apart from any illegal act, the possession of deadly weapons by any alien should be forbidden under all circumstances, and any offence against this regulation should be punishable by a fine and imprisonment for a first offence and by permanent deportation for a second offence." The possession of deadly weapons of the type of a magazine pistol should be forbidden to everyone in all circumstances, except to householders and others permitted by licence to keep them in their homes or other premises for the purpose of defending those homes or premises against attack. It should be a punishable offence in anyone to carry a pistol on his person in any place outside the limits of his "curtilage"—of course, with proper exceptions. No one suggests, for example, that a person buying a pistol for the defence of his house, and for his own protection in it, and publicly known to possess a licence for the purpose, should be precluded from acquiring skill in its use by practising at a target in a suitable place. It should be possible in many cases to prevent the introduction of fresh weapons by aliens on their entering the country, but there are plenty of criminal or foolish British subjects who carry pistols and who should be prevented from doing so as far as this is possible. Absolute prevention is, of course, out of the question.

## A DESERVING CASE.

A WELL-KNOWN physician has brought the following circumstances before us. A gentleman formerly engaged in business firms in India had the misfortune to lose his right lower limb above the knee. He is now fitted with an artificial limb, is strong and able to walk about fully, but there is no longer any opportunity for him to take up his work again in India. His training and experience fit him admirably for secretarial work. Our correspondent personally knows the patient and his family, and formerly knew his father, and can testify to the thoroughly meritorious nature of the case. He therefore appeals to readers of THE LANCET for their assistance to obtain for an unfortunate and deserving man some secretarial duties.

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*M.C.H.*, a medical man, asks for advice concerning the treatment of a case of rapidly growing warts near the frænum. No history of gonorrhœa is given. Some three months ago the first wart appeared and grew rapidly. This was removed and submitted to pathological examination. It was quite soft and waxy and had a broad base. It was a simple papilloma and showed no evidence of malignancy. A month afterwards a similar growth made its appearance about an eighth of an inch higher up the frænum. Its appearance was remarkably rapid—within 24 hours. Now three more have appeared all within a few hours. The rapidity of the growth makes him anxious.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

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## A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, and April, 1911:—

March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
,, 23rd (Paris).—First Congress of French Medical Journalists.
,, 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
,, 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
,, 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
,, 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 22nd, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Feb. 16 | 30·30 | S.W. | 0·05 | 57 | 52 | 42 | 45 | 46 | Overcast |
| ,, 17 | 30·05 | S.W. | ... | 80 | 56 | 46 | 47 | 49 | Fine |
| ,, 18 | 29·89 | S.W. | ... | 63 | 56 | 49 | 50 | 51 | Raining |
| ,, 19 | 29·44 | W. | 0·15 | 85 | 47 | 38 | 39 | 39 | Cloudy |
| ,, 20 | 29·92 | W. | ... | 79 | 49 | 36 | 36 | 37 | Cloudy |
| ,, 21 | 30·06 | S.W. | ... | 56 | 54 | 37 | 41 | 42 | Raining |
| ,, 22 | 29·64 | W. | 0·11 | 89 | 53 | 42 | 46 | 49 | Cloudy |

**The following journals, magazines, &c, have been received:**—Annales de Gynécologie et d'Obstétrique, Revue de Gynécologie, American Medicine, Quarterly Journal of Microscopical Science, The Canadian Practitioner, Indian Medical Journal, Symons's Meteorological Magazine, British Journal of Dental Science, Revue Psychiatrie, Archiv Experimentelle Pathologie und Pharmakologie, South African Medical Record, Archives de l'Institut Pasteur de Tunis, The St. Louis Medical Review, Guy's Hospital Gazette, Il Tommasi, Archives Générales de Médecine, Centralblatt fur Allgemeine Pathologie und Pathologische Anatomie, Recueil

d'Ophthalmologie, Il Policlinico, The Medical Chronicle, Birmingham Medical Review, American Journal of Obstetrics, Indian Medical Record, Journal of Nervous and Mental Diseases, Nederlandsch Tijdschrift voor Geneeskunde, The Official Gazette of the United States Patent Office, Paris Médical, The Therapist, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, The British Journal of Dermatology.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James): at 8 P.M.

*Paper:*

Mr. A. A. H. Johnson and Mr. A. Hopewell Smith: A Case of Multiple Supernumerary Teeth preceding a Central Incisor.

*Casual Communications:*

Mr. T. Stordy: Absorption of a Permanent Molar Due to an Unerupted Premolar.

Mr. W. de C. Prideaux: (1) Three Cases of Torus Palatinus; (2) Skull from a Barrow showing somewhat Symmetrical Mandibular Exostoses.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bt.): at 5.30 P.M.

Dr. Wilfred Edgecombe: Some Observations on Low Blood Pressure.

WEDNESDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—F. A. de T. Mouillot, A. Manuel): at 5.30 P.M.

Dr. Ringrose Gore (Llandrindod Wells): Climatic and Balneological Treatment of Neurasthenia.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos street, W.: at 8 P.M.

*Specimens:*

Dr. Bardley Holland: Sarcoma of Uterus with Hæmatometra.

Dr. R. D. Maxwell: (1) Ovarian Cyst with Thyroid Gland Contents; (2) Hydatidiform Mole with associated Ovarian Enlargement.

Dr. H. Macnaughton-Jones: Hydrosalpinx and Peritoneal Cyst; Uterus Removed by Hysterectomy followed by Double Phlebitis.

Dr. Paramore: Diffuse Fibroma of the Ovary which has Undergone Central Degeneration with Extravasation of Blood.

*Short Communication:*

Dr. Blair Bell: Primary Abdominal Pregnancy in a Rabbit.

*Epidiascopic Demonstration:*

Miss McIlroy: The Origin of the Follicle Cells of the Ovary.

*Paper:*

Dr. Blair Bell: The Nature of Fluid contained in a Hæmatosalpinx.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris), at National Hospital, Queen-square, W.C.: at 8.30 P.M.

Dr. Kinnier Wilson: Progressive Lenticular Degeneration (a Familial Disease with Cirrhosis of the Liver).

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.

*Cases and Specimens*

By Professor Hobday, Mr. Herbert Tilley, Dr. L. H. Pegler, Mr. Gay French, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—R. W. Collum, Mrs. Dickinson Berry): at 8.30 P.M.

*Discussion*

On the Use of Scopolamine and Morphine, Atropine, and similar Drugs by Injection before Inhalation Anæsthesia (opened by Dr. Dudley Buxton).

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**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—8.30 P.M., Pathological Evening. Specimens will be exhibited by Dr. F. J. Poynton, Mr. A. E. Barker, Dr. P. Weber, Dr. R. C. Jewesbury, Mr. C. Symonds, Dr. H. M. Turnbull, Mr. T. B. Layton, Dr. E. H. Shaw, Dr. Spilsbury, Mr. M. Heath, and Mr. T. P. Legg.

**NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.**

THURSDAY.—4.15 P.M., Clinical Cases.

**RÖNTGEN SOCIETY, 66, Victoria-street, Westminster, S.W.**

THURSDAY.—Mr. A. A. C. Swinton: Some Experiments with a 10,000 volt Storage Battery.

**WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital.**

FRIDAY.—8.30 P.M., Dr. H. Pritchard: The Present Position of Vaccine Therapy.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.**

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: The Fossil Remains of Man and their Bearing on the Origin of Modern British Types (illustrated by means of the epidiascope). (Hunterian Lecture.)

**ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.**

THURSDAY.—5 P.M., Dr. A. E. Boycott: Ankylostoma Infection (Milroy Lecture).

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. J. H. Sequeira: Clinique (Skin). 5.15 P.M., Lecture:—Dr. E. Pritchard: The Treatment of Common Symptoms among Infants.

TUESDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Taylor: Eye Affections in Nervous Diseases.

WEDNESDAY.—4 P.M., Sir A. P. Gould: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. Taylor: Anæmia.

THURSDAY.—4 P.M., Mr. J. Berry: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. C. Hort: The Use and Abuse of Tuberculin.

FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: Therapeutics.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Some Medical Aphorisms.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture V.)

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. D. Robinson: Gynæcological Obstetrical Subject.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carling: Surgical Treatment of Aneurysm.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Moon: Rheumatic Manifestations in Childhood.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Demonstration of Selected Skin Cases.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**CENTRAL LONDON THROAT AND EAR HOSPITAL**, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Mr. C. Nourse: Accessory Sinuses.

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC**, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Cerebral Abscess.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Stewart: Intracranial Tumour.

**HOSPITAL FOR SICK CHILDREN** (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Nose and Pharynx, Diseases of Lymphatic Glands. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Demonstration—Dr. Batten: Medical Cases.

FRIDAY.—5.15 P.M., Demonstration:—Mr. O. L. Addison: General Surgical Diseases—Genito-urinary System, Infections, Tumours, Calculus, Tuberculosis. (Special Post-Graduate Course.)

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN**, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Diseases of the Skin Due to Bacillary Infection.

**HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST**, Brompton, S.W.

WEDNESDAY.—4 P.M., Demonstration:—Dr. B. Shaw: Pathological Specimens.

**ANCOATS HOSPITAL**, Manchester.

THURSDAY.—4.15 P.M., Dr. C. Melland: Some Further Aspects of Heart Disease. (Post-Graduate Clinic.)

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY** (4th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

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**R.**—Messrs. E. J. Reid and Co., Lond.; R. S.; Royal National Hospital for Consumption for Ireland, Dublin, Secretary of; Registered Nurses' Society, Lond.; R. D.; R. J. W.

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**T.**—Mr. J. B. R. Thomas, Corwen; T. G. C.

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# An Address

ON

# SOME MEDIASTINAL AFFECTIONS.

*Delivered at the Medical Graduates' College and Policlinic on Jan. 30th, 1911,*

BY PERCY KIDD, M.D. OXON., F.R.C.P. LOND.,

PHYSICIAN TO THE LONDON HOSPITAL; CONSULTING PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, AND TO KING EDWARD VII. SANATORIUM.

GENTLEMEN,—It is not my intention on the present occasion to attempt to deal with the general topic of mediastinal tumours. I wish first to describe briefly certain unusual examples of mediastinal disease, and secondly to discuss some points in the clinical symptoms and diagnosis of tuberculous mediastinal glands.

## I.—UNCOMMON CASES OF MEDIASTINAL DISEASE.

CASE 1. *Substernal thyroid tumour simulating a mediastinal new growth; operation; recovery.*—The patient was admitted into the London Hospital in February, 1906, as a case of mediastinal tumour. For some four years he had suffered from difficulty of breathing. Treatment had given some relief until two weeks before admission, when his breathing became much worse. Two months previously to admission a lump in the neck was first noticed by his medical attendant. The patient was a dark man, of Hebrew race, with an anxious expression, but not obviously wasted. There was slight stridor, mainly inspiratory. The superficial veins of the neck and chest were distended. On coughing a large swelling appeared in the neck above the clavicles, more on the left side, suddenly disappearing when coughing ceased. No lump was felt behind the clavicles. The lungs were hyper-resonant on percussion and the breath sounds were universally weak. There was no dulness over the sternum. The heart was normal. The larynx was healthy; no paralysis of vocal cords, and no dysphagia.

The long history and the absence of wasting seemed to exclude malignant disease, though the evidence of mediastinal pressure was very clear. The diagnosis suggested was substernal thyroid gland. The swelling above the clavicles on coughing was attributed to emphysematous bulging of the apices of the lungs. My colleague, Mr. James Sherren, examined the case, and pointed out that the swelling which appeared in the neck on coughing was dull to percussion, and he suggested that it was due to a moveable substernal thyroid tumour. Radiograms showed a fusiform shadow behind the sternum running up towards the neck. Mr. Hurry Fenwick subsequently saw the patient and agreed to attempt the removal of the tumour.

On March 5th, under chloroform, an incision was made along the upper border of the left clavicle in its outer half. From the inner end of this incision another was carried up and out to the anterior border of the trapezius. The veins were very large and bled freely and had to be ligatured. The platysma and omohyoid (posterior belly) were cut through and a dissection made on to the sheath of the subclavian vessels. No signs of the lump were found. The patient was made to cough and the lump was found to the inner side of the wound. The incision along the line of the clavicle was carried further and more vessels were caught and ligatured, first the muscular head and then the sternal head of the sterno-mastoid muscle had to be cut through. The lump was then found and exposed. A retractor was put on to hold back the soft structures and the swelling was grasped by tenaculum forceps and pulled out. On puncture yellow cystic fluid escaped. The lump, now smaller, was pulled on and eventually shelled out of its bed. It was much larger than at first suspected and was about the size of a large William pear. There were no adhesions. The tumour was continuous with the isthmus of the thyroid gland. The junction was cut through, the vessels ligatured, and the surface cauterised. The cavity occupied by the tumour reached down into the thorax behind the arch of the aorta. A drainage-tube was inserted in the cavity. The tumour proved to be an encapsulated adenoma. The wound healed fairly well, but some suppuration took place.

The patient was discharged on March 30th. When I saw him a few weeks later the wound had healed and no abnormal physical signs could be detected. The patient was completely relieved of all his symptoms. I have given the full surgical notes of Mr. Hurry Fenwick's operation as the case is an unusual and instructive one, and the results were highly satisfactory.

CASE 2. *Mediastinal cyst (? dermoid).*—The patient, who was 20 years of age, had suffered from a dry cough from January to Easter, 1891, when he was suddenly seized with sharp pain in the left side and shortness of breath. Signs of pleural effusion developed and he was tapped, a quart of clear yellow fluid being withdrawn. A week later he was aspirated again, the result being a tumblerful of turbid fluid with flakes floating in it. Since then he had dragging pain on raising the left arm, and dyspnœa. In August, 1891, a swelling appeared in the upper part of the subcostal angle. I saw the patient at the Brompton Hospital as an out-patient in October, and he was admitted under my care through the kindness of my colleague, Dr. F. T. Roberts. Physical examination showed dulness and signs of fluid on the left side from the second space in front and the spine of the scapula behind to the base. The heart was displaced to the right of the sternum. On the right side in front from the clavicle to the third space there was a vertical strip of dulness extending from the middle line of the sternum outwards to the right for 1½ inches. Immediately below the ensiform cartilage there was a rounded, slightly pulsating elastic swelling. The signs were somewhat puzzling. For although the evidence of fluid in the left pleura was unmistakeable, the patch of dulness to the right of the upper part of the sternum and the epigastric tumour were difficult to explain. The possibility of an encysted mediastinal empyema was suggested.

On Oct. 15th the patient was aspirated by Mr. R. J. Godlee in the eighth space in the scapular line, and 65 ounces of dark blood-stained fluid were drawn off. Microscopically red blood corpuscles, leucocytes, and spherical epithelial cells with large nuclei and granular débris were found. The dulness on the left side diminished, but the epigastric swelling and the patch of dulness to the right of the sternum persisted. I will now quote Mr. Godlee's account of the subsequent history of the case.[1]

> On Nov. 28th an incision was made into the epigastric swelling which was becoming more tense, and a cavity was opened containing a considerable quantity (6 or 7 ounces) of brown purulent fluid something like that previously extracted from the side, floating in which were numerous small rounded masses of a brilliant chrome-yellow pultaceous material, looking like the yellow palm oil used for lubricating the wheels of railway carriages. The cavity extended upwards behind the sternum, and on a subsequent occasion I endeavoured to discover its upper limit by making a hole through the sternum. The finger, however, was found to be amongst the large vessels in the superior mediastinum and I did not venture to go any further. An elaborate analysis of this fatty material was made by Dr. Halliburton, but it threw no light on the case. We never found any of the usual contents of dermoid cysts and I do not therefore know whether the case should be placed here [i.e., chapter Dermoid Cysts]; but I am at a loss for any other explanation of it. The yellow material continued to escape for a considerable time and ultimately the sinus closed. It remained healed for some time, but subsequently a small ulcer formed at the top of the sternum, which, after discharging for some months, finally healed

I saw the patient myself in 1897—i.e., about five years after the operation—when he was in excellent health. There was a small scar just above the right sterno-clavicular joint, and deep scars over the lower end of the sternum and epigastrium in the site of the two operations. With the exception of slight deficiency of movement on the left side of the chest there were no abnormal physical signs.

CASE 3. *Mediastinal abscess perforating the trachea and œsophagus and causing subcutaneous emphysema and cellulitis.*—The patient, a man aged 37 years, was admitted into the London Hospital on Oct. 4th, 1900. He had been taken ill seven days previously with a shivering fit and sweating, and shortly afterwards he had noticed a red swelling in the neck. The swelling had been much worse a few days previously to admission, diminishing suddenly after spitting up much phlegm. On admission the patient was cyanosed, and the skin of the lower part of the neck was congested and boggy, and emphysematous crackling was detected. The pulse was 138, the respirations were 42, and the temperature was 100·8° F. There was dulness to percussion over the lower

[1] Fowler and Godlee: Diseases of the Lungs, p. 698.

two-thirds of the left lung, and tubular breathing at the base. On the right side scattered rhonchi. Diagnosis: Cellulitis of neck; pneumonia. The patient was bled 10 ounces, and an incision was made in his neck, when some pus and a few bubbles of air escaped. Temporary relief was obtained, but he sank and died on Oct. 6th, two days after admission.

At the necropsy the left pleura was found to contain 1½ pints of brownish turbid fluid, the lung being collapsed and covered with recent greenish lymph. Both lungs contained numerous miliary abscesses. In the œsophagus opposite the bifurcation of the trachea there was a flat oval fibroma measuring 1×⅔ inch, and just to the left of the tumour a small smooth-edged opening led into an abscess cavity at the bifurcation of the trachea. This abscess had extended upwards into the neck and into the left pleura and communicated by a small opening with the trachea. There was also acute recent pericarditis. The disease appeared to have originated in the sub-tracheal lymphatic glands, whether as the result of tuberculosis or some other cause could not be determined. No tuberculous focus was discovered anywhere.

The following two cases, which I will only briefly outline, illustrate the way in which mediastinal growths may be masked by other conditions.

CASE 4. *Mediastinal growth masked by pericardial effusion.*—A labourer, aged 61 years, had been ailing for four weeks with loss of appetite followed by dyspnœa and weakness. There were physical signs of pericardial effusion. He died 15 days after admission.

At the post-mortem examination the mediastinal glands in front of the trachea and bronchi were found to be infiltrated with a firm whitish-yellow growth forming a mass of about the size of a duck's egg, not occluding or narrowing either bronchus, trachea, or œsophagus. There was a small nodule of growth in the upper lobe of the left lung. The pericardium was roughened with lymph and contained 1½ pints of clear fluid but no growth.

CASE 5. *Mediastinal growth masked by pleural effusion.*—A man, aged 50 years, had been ailing for five months with loss of flesh, pain in the right side, and swelling of the legs. There were physical signs of a small pleural effusion on the right side which steadily increased, and the patient died four days after admission.

Post mortem a large pleural effusion was found on the right side and turbid fluid with flakes of lymph. The trachea and the root of each lung were embedded in a large whitish growth extending widely into the lower lobe of the right lung. The œsophagus and large veins were not involved.

## II.—TUBERCULOUS DISEASE OF THE BRONCHIAL GLANDS.

It is well known that the mediastinal glands may be markedly caseous and considerably enlarged without exciting any suspicion of the actual state of things. This mistake is less likely to occur in children than adults owing to the greater tendency in the former to the development of bronchial obstruction depending on the more yielding character of their bronchial walls. Nevertheless, in children also extensive tuberculous disease of the bronchial glands is very apt to pass unrecognised, even though careful search for its presence be instituted.

The mediastinal glands may be divided into two main groups—anterior and posterior. The former lie in front of the trachea, the posterior group is situated beneath the fork of the trachea and around the main bronchi. The latter group is more often affected by tuberculosis. When the glandular swelling is considerable symptoms of mediastinal tumour may be presented with characteristic pressure signs. If the pre-tracheal glands be chiefly involved the superficial thoracic veins may be enlarged and dulness on percussion may be elicited over the manubrium sterni. More often, perhaps, the pressure is not confined to the trachea, but is exerted also on one or other bronchus, giving rise to weakening of the vesicular murmur over the corresponding lung. In some cases slight stridor is met with. It may be said that enlargement of the pre-tracheal glands gives more definite physical signs and is easier to recognise.

In the case of the posterior or sub-tracheal glands very considerable enlargement may exist without betraying its presence by any obtrusive signs. It is commonly asserted that dulness to percussion may be detected in these circumstances in the interscapular region. But from the position of the glands lying beneath the bifurcation of the trachea and in front of the body of the third dorsal vertebra, this seems very unlikely unless the vertebral border of the lung be involved also, or unless the glands around the main bronchi be enormously enlarged. According to my experience, dulness in this situation is never found in tuberculous adenitis when the lung is unaffected. Among the occasional symptoms mention must be made of a paroxysmal cough and alterations in the frequency of the pulse, whether slowing or acceleration, attributed to pressure on the vagus. Paralysis of the vocal cords is said to occur, but I have never met with it, or perhaps I should say I have never been able to establish its dependence on tuberculous bronchial glands. But not much reliance can be placed on these symptoms for purposes of diagnosis. The same may be said of Dr. Eustace Smith's sign, a continuous humming murmur heard over the manubrium when the head is strongly retracted. I will now give a few examples illustrative of these points.

CASE 6. *Tuberculosis of mediastinal glands followed by pleurisy with effusion; recovery for some years; death from tuberculous meningitis.*—A boy, aged 5 years, had suffered from tuberculous disease of the knee-joint from the age of 3 years. Amputation had to be performed a year later, from which he recovered well and his general health improved greatly. But soon afterwards he began to wheeze and his breathing was noisy at times. On examining him I found slight stridor, the percussion note was slightly impaired at the apex of the right lung, especially front, and the breath sounds were much weaker on this side. No adventitious sounds could be heard. Diagnosis: Tuberculosis of mediastinal glands compressing right bronchus. Some months later a large pleural effusion developed on the right side, from which he made an excellent recovery, the fluid becoming absorbed in less than a month. The signs at the right apex gradually cleared up in the course of two or three years, leaving nothing beyond deficient expansion and broncho-vesicular breathing. After regaining fairly good health for some years he died at the age of 18 from tuberculous meningitis. No necropsy was made.

CASE 7. *Tuberculosis of mediastinal glands compressing the right bronchus; recovery.*—A girl, aged 8 years, a cousin of the last patient, a few months after an attack of whooping-cough began to suffer from a peculiar wheezing and occasional cough. About the same time she had an obscure febrile attack resembling rheumatism. The following winter she had bronchitis. When I saw her she was pale and her face was rather puffy, but she was plump and well nourished. The superficial veins over the upper thorax were enlarged. Percussion at the right supraspinous fossa was slightly impaired, the breath sounds at the right apex were diminished, and sibilant rhonchi were heard at both apices. Diagnosis: Tuberculosis of bronchial glands compressing right bronchus. She was sent to Brighton for the winter and made an excellent recovery. All abnormal signs gradually disappeared and she grew up into a healthy woman, and is now 27 years of age.

In these two cases (Cases 6 and 7) the signs of obstruction of the right bronchus without any symptoms or signs of pulmonary disease pointed strongly to the bronchial glands as the source of the trouble.

CASE 8. *Tuberculosis of mediastinal glands involving the lung by direct infection through the bronchi.*—The patient, a boy aged 7 years, was admitted to hospital on Nov. 1st, 1905. Three weeks previously he had come home from school complaining of pain in the head and of feeling "burning hot." Vomiting and diarrhœa developed and he became languid and miserable. Five months previously he had had scarlet fever, since when he had never been well. On admission the boy was found to be pale and wasted and the temperature was irregularly remittent—103°-99° F. There was occasional cough. Physical examination showed a patch of dulness over the upper third of the sternum merging into another limited area of dulness, just to the right of the sternum, about 2 inches in width, between the fourth and sixth ribs. Over the dull areas prolonged expiration was heard, but no adventitious sounds anywhere. Diagnosis: Tuberculosis of anterior mediastinal glands involving the middle lobe of the right lung. The opsonic index to tuberculosis was estimated on four occasions by Dr. G. T. Western in November and varied from 1·0 to 1·19. The case progressed slowly downwards, the chief features being remittent pyrexia, loss of flesh, and slight cough.

Signs of consolidation gradually spread up towards the apex of the right lung, râles and rhonchi appeared over both lungs, and the patient died from tuberculous meningitis on June 10th, 1906.

At the necropsy large caseous glands were found in the anterior mediastinum and beneath the fork of the trachea. The right bronchus was perforated by the caseous glands in two of its divisions—the branch to the middle and the branch to the lower lobe. The middle lobe of the right lung was converted into a large caseous mass. In the upper lobe there were a limited fibrosis and a small cavity. Both lungs were studded with miliary tubercles. There was tuberculous meningitis.

Perforation of the bronchi by caseous bronchial glands is not an uncommon event, and explains the anomalous distribution of the pulmonary lesions in this and similar cases.

It would be easy to cite from post-mortem records examples of tuberculous bronchial glands undetected during life. I will merely give as an illustration one case that proved extremely deceptive.

CASE 9. *Tuberculous abscess of bronchial glands; broncho-pneumonia simulating acute tuberculosis; death from septicæmia.*—A boy, aged 7 years, had been ailing for 17 days with headache, malaise, cough, and wasting. One other child had died at home three weeks ago with similar symptoms. On admission the boy was only partly conscious, groaning frequently, and coughing occasionally. The respirations were 44 and the temperature was 101°-103° F. At the base of the left lung there were dulness and tubular breathing, and crepitations were scattered over both lungs. Diagnosis: acute tuberculosis. The patient died in a few days.

At the necropsy enlarged caseous glands were found in the posterior mediastinum, and in the fork of the trachea was an abscess with foul stinking pus tracking along the right bronchus, but not communicating with the air passages or œsophagus. The left pleura contained one pint of serous fluid, the lung being collapsed. In the right lung were patches of broncho-pneumonia, but no tubercles. There were a few small caseous nodules in the liver and the kidneys.

Cases like the preceding testify to the inadequacy of our standard methods of diagnosis. For while we can recognise with a fair degree of accuracy gross lesions of the mediastinal glands, moderate enlargements of these glands frequently escape us altogether. At the last annual meeting of the British Medical Association Professor d'Espine of Geneva read a paper on The Early Diagnosis of Tuberculous Bronchial Adenopathy in the Child. In this paper he claimed that the presence of enlarged bronchial glands could be determined by auscultation over the spinous processes of the seventh cervical and upper two or three dorsal vertebræ. Pectoriloquy, or a bronchial quality of respiration, in this situation was held to be a certain sign of enlarged sub-tracheal glands. Pectoriloquy is stated to be an earlier sign than bronchial breathing. A definite vertebral dulness on percussion over the same area coincides invariably with a loud bronchophony, and is pathognomonic of a large glandular mass uniting the trachea with the vertebræ.

If these statements can be verified obviously we should have received a most valuable addition to our means of diagnosis. It was surprising to find from the report of the meeting[2] that these statements were allowed to pass without further discussion.

In his work on "Auscultation and Percussion" (second edition, p. 126) Dr. S. J. Gee writes as follows: "Bronchial breathing, like bronchophony, is heard about the seventh cervical, and three or four upper dorsal vertebræ in a great number of healthy persons, especially in those that are thin, in women, and children." Dr. Gee cites Laennec in support of this statement. I remember Dr. Gee making use of this fact in teaching auscultation, and pointing out how auscultation of the spine in this region provides us with a standard of what is bronchial breathing, which is very useful to students and beginners when in doubt as to the character of the breath sounds heard over the lungs. I thought this fact was generally admitted. I have repeatedly verified it myself and I have often adopted Dr. Gee's plan in teaching students. But after reading Professor d'Espine's remarks I determined to investigate the point anew. Accordingly, with the help of my house physician, Mr. J. R. Dick, I examined 51 patients consecutively with reference to this matter. The only patients excluded were such as had consolidation of the lung of any kind, pleural effusion, or any evidence of tuberculous or other glandular disease in any district of the body. Of these 51 patients, 33 showed bronchial breathing or pectoriloquy over the seventh cervical and upper dorsal spines, usually the first and second. In 22 cases both bronchial breathing and pectoriloquy were present; in 11 cases either bronchial breathing or pectoriloquy alone. In 18 cases the results were uncertain or negative. Most of the patients that gave positive results were spare or thin, but not all, a notable exception being a man weighing over 15 stones, the subject of a cerebral tumour. Among the positive cases 19 were male and 14 female. Age: under 10 years, 7 cases; 10 years and over, 26 cases. In one infant 11 weeks of age suffering from disseminated broncho-pneumonia we found marked bronchial breathing over the seventh cervical and first dorsal spine but nowhere else. The necropsy showed scattered foci of broncho-pneumonia and trifling enlargement of the bronchial glands; in fact, the glands were scarcely larger than usual in healthy infants. These facts appear to recommend an attitude of caution with respect to Professor d'Espine's views. I feel persuaded myself that Dr. Gee's statement is true and that we may expect to find bronchial breathing and pectoriloquy over the upper dorsal spines in many healthy people.

In some cases radiography gives valuable assistance, but it is not possible to secure expert examination in all cases. In infants under 2 or 3 years of age von Pirquet's cutaneous tuberculin test is a very useful addition to other means of diagnosis. But in older children and adults it has a more limited value owing to the great frequency of quiescent or arrested tuberculous lesions in the lungs and other parts after the second or third years of life.

I cannot now enter into the question of treatment further than to urge the very great importance of recognising the curability of tuberculous lymphatic glands in the chest as in other parts, and, in the case of children especially, of insisting on prolonged residence at the seaside.

[2] Brit. Med. Jour., Oct. 15th, 1910.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Feb. 17th, 1911. There were present: Dr. F. de Havilland Hall (in the chair), Dr. H. A. Sansom, Dr. Frederick S. Palmer, Dr. M. G. Biggs, Dr. W. Knowsley Sibley, Mr. Frederick Wallace, Dr. F. C. Martley, Dr. M. Greenwood, Dr. J. W. Hunt, Mr. E. Bartlett, Dr. J. Brindley-James, Mr. H. P. Symonds, Mr. J. F. Colyer, Dr. F. J. Allan, Mr. F. S. Edwards, and Dr. J. B. Ball. A large increase has taken place in the number of new entrants, and the amount disbursed in sickness pay has been under the average and remarkably small for the season of the year. Prospectuses and all further particulars on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

THE WEST HERTS HOSPITAL AND THE MEDICAL TREATMENT OF SCHOOL CHILDREN.—At a meeting of the Hemel Hempstead Education Committee held recently the clerk reported that he had, by direction of the committee, interviewed the committee of the West Herts Hospital as to the treatment of school children found on medical inspection to require treatment, and discussed the matter with them. The great difficulty, so far as the hospital was concerned, was that although it might be prepared to treat suitable cases referred to it, and to accept payment for the same from the school authority, still it would be unfair to the honorary medical staff, in that the hospital would benefit to the amount of the subscription from the school authority, and the medical staff would be called upon to exercise the charity by attending these children, for treating whom they would get nothing. The education committee had set very expensive machinery in motion to discover the defects of these children, and they were strongly of opinion that some scheme of payment should emanate from the Board of Education. A member of the education committee said that it was a waste of time to discover the defects in school children unless those defects when discovered were remedied, adding that the Board of Education had distinctly promised a grant in aid. The clerk was instructed to write to the Board on the matter.

# Hunterian Lecture

ON

# THE IMMUNITY REACTION IN DIAGNOSIS, ESPECIALLY OF TUBERCULOSIS AND SYPHILIS.

*Delivered in the Theatre of the Royal College of Surgeons of England on Feb. 6th and 8th, 1911,*

BY W. D'ESTE EMERY, M.D., B.Sc. LOND., M.R.C.S. ENG.,

PATHOLOGIST AND LECTURER ON PATHOLOGY AND BACTERIOLOGY AT KING'S COLLEGE HOSPITAL.

## LECTURE II.[1]

*Delivered on Feb. 8th.*

## THE APPLICATION AND INTERPRETATION OF THE WASSERMANN REACTION, WITH A DESCRIPTION OF A SIMPLE AND ACCURATE QUANTITATIVE METHOD.

MR. PRESIDENT AND GENTLEMEN,—The importance of an accurate method for the diagnosis of syphilis cannot be over-estimated. Even where there are active and visible lesions the most experienced clinical observer is often in doubt, and when the lesion is inaccessible—such as an intracranial gumma—the recognition of its nature is usually impossible, and much valuable time is often wasted in trying the effect of antisyphilitic treatment. The question is even more important from a sociological point of view, in regard to the question of marriage after syphilis. I believe most strongly that the Wassermann reaction, properly applied and properly interpreted, answers every requirement that the clinician can reasonably demand of the pathologist. Let me outline the steps by which it was discovered, so as to be able to give a more intelligible description of the principles on which it depends.

### ORIGIN OF THE WASSERMANN REACTION.

Bordet and Gengou discovered the phenomenon of the absorption of complement in presence of a mixture of a bacterial culture or extract and its appropriate antibody. It did not, however, attract general attention for several years, when it was put to practical use by several German observers, amongst others by Wassermann By this time the Treponema pallidum, the true cause of syphilis, had been discovered by Schaudinn, and it was only natural to attempt to make use of the Bordet-Gengou reaction in the diagnosis of the disease. Here there was a great difficulty: the organism could not be cultivated, so that neither an emulsion nor an extract could be obtained. The discovery of the fact that spirochætes swarm in vast numbers in the livers of macerated syphilitic fœtuses suggested to Wassermann the idea of making use of an extract of such an organ in normal saline solution as the reacting substance in the test. It answered admirably; when mixed with syphilitic serum it absorbed complement greedily, whereas when mixed with normal serum it had no such action. At first this test involved the use of a syphilitic liver very rich in parasites. This is not always easily obtained, and the material was difficult to preserve. But in a very short time Levaditi and several other observers found that an alcoholic extract would answer as well, or nearly as well, as an extract in normal saline solution, and further that it was unnecessary to use syphilitic material at all; an alcoholic extract of normal liver or heart of man or of the lower animals would give the reaction in just the same way. This had the effect of making the tests much more easy and accessible to pathologists, but it had also the effect of showing us that our theories as to its causation were entirely erroneous. Further research seemed to show that the substance or substances which occur in the extract and act as an antigen are of a fatty nature, and many but not all fats will act in this way. The extract can, indeed, be replaced by comparatively simple chemical substances, such as lecithin; and although these artificial extracts have not proved so useful in practice as solutions of tissues, they serve to show beyond doubt that the substances involved are not proteid in nature and therefore not true antigens.

### NATURE OF THE REACTION.

This raises new and very important questions as to the nature of the second substance involved—the substance which occurs in the serum and which acts as an antibody. It is certain that it is not a true antibody, and yet it appears to act in exactly the same way in the absorption of complement. Further, it is not strictly specific, for further observations showed that it occurred in other diseases. In the great majority of diseases it does not occur, or occurs only in amounts such as are met with in health. For, and this is a point on which I wish to lay stress, it is always present in normal serum, and the only change which occurs in syphilis is its appearance in greatly increased amount. All sera will give some absorption of complement with this extract of heart or liver if the latter be sufficiently strong. This is usually expressed by saying that the extract absorbs some complement, but I see no reason whatever for distinguishing between this absorption with normal sera and the vastly more powerful absorption which takes place with most syphilitic sera. All grades occur. If a person with a chancre be examined early in the disease his serum will absorb complement (in contact with extract) just like that of a normal person. As the case is watched the absorption grows gradually stronger, so that it appears with extract which has been diluted to such an extent that it is devoid of action on normal serum. Where is it possible to draw the line, and to say that this is a non-specific absorption of complement due to the extract alone, and this is a specific absorption due to the presence of a substance characteristic of syphilis? It seems reasonable to suppose that the reaction in syphilis is due simply to an increase in amount of a substance which is present in health. It is possible that the substance is a lipoid compound, and it may perhaps represent a product of metabolism of the tissues. In health we must suppose that it is given off in very small amount, whereas in those diseases which give the Wassermann reaction the amount is greatly increased. This we may probably attribute in some way to the breaking down of the tissues which forms so important a feature in the disease. In very general terms the amount of the substance, as judged by the strength of the reaction given by the serum, is proportionate to the severity of the case, and to the extent of the active lesions. This I believe to be true with one important exception; very powerful reactions are often (though not invariably) met with in hereditary syphilis, even when there is no evidence of any active pathological process. This is very difficult to explain. Perhaps in a person with hereditary syphilis the tissues, or some of them, have become trained to an alteration in their metabolism, so that there is a greater output of the reacting substance, though without any obvious degenerative changes. If this is so it might account for the greater difficulty in abolishing the reaction in hereditary than in acquired cases; it is easy to believe that such an ingrained alteration of metabolism, acquired in early life and continued for years, might lead to a permanent physiological alteration in the tissues. Be this as it may, a high degree of strength in the Wassermann reaction in hereditary cases means less than the same degree in acquired disease, and is less easily removed by mercurial treatment.

### MECHANISM.

Next, as to the mechanism of the reaction. How are we to account for the absorption of complement if it is not due, as in other cases of the Bordet-Gengou reaction, to an interaction of antigen and antibody? Absorption of complement takes place under several different classes of conditions, amongst others under all circumstances in which a solid precipitate is formed; for example, when complement is carried down quasi-mechanically by a precipitate of barium sulphate, as in Wechselmann's method. Now there is proof that the reacting substance in the syphilitic blood does, as a matter of fact, combine with, and precipitate, the fatty substances in the so-called antigen. This is the basis of Porges' test for syphilis; clear serum is added to a solution of lecithin or other lipoid substances, and in many cases will be found to give a precipitate. This has been tried extensively as a simple method to replace the Wassermann

[1] Lecture I. was published in THE LANCET of Feb. 25th, 1911, p. 435.

reaction, but it appears not to be so delicate. This is only what we might expect from other facts known in connexion with complement absorption; this phenomenon is a very delicate test for the formation of an insoluble precipitate, giving indication of its presence when no precipitate whatever is visible to the naked eye. Thus in the test for the nature of blood by means of the precipitin reaction the test is infinitely more delicate if the question of the presence or absence is determined by complement absorption rather than by the presence or absence of a precipitate; it is said that by the former method so little as one-millionth part of a cubic centimetre of blood can be recognised.

It is not absolutely certain that the Wassermann reaction is due to the same precipitation which causes Porges' reaction, but the proof that the absorption of complement in the former cases is due to a process akin to precipitation has been given by Jacobsthal, who studied the behaviour of mixtures of serum and antigen under the ultra-microscope. He found that when a normal serum was used the minute particles of lipoid substance in the antigen appeared as brilliant points, isolated from one another and having active Brownian movement. But when a syphilitic serum was used these points of light ran together to form a large and brilliant mass; with a weakly reacting serum a sort of partial precipitation occurred, the bright points grouping themselves into small masses or chains. These phenomena were found to run parallel to the Wassermann reaction, which they might perhaps replace.

It would appear, therefore, that we can explain the Wassermann reaction somewhat as follows. The dilution of the alcoholic solution of fatty substances with normal saline solution gives rise to the production of an emulsion of extremely minute particles of fat, which form a more or less permanent suspension in the fluid. The syphilitic serum contains a substance which has the power of combining with these fatty particles, and in so doing of altering in some way the surface-tension between them and the fluid in which they are suspended, so that they clump, and in doing so attract to themselves any complement which may be present in the fluid. The process is partly chemical and partly physical, if there is in truth a difference between the two, and in this connexion it is important to notice some facts about the alcoholic solution of so-called antigen which are of great importance in actual practice. The first is its variability. This constitutes the chief difficulty in the use of the reaction and is probably one of the chief causes of erroneous results. An alcoholic extract filtered from sediment is far indeed from remaining of constant strength. As a rule, it tends to become stronger, so that if the phenomenon is not recognised and an appropriate dilution used every blood may give a positive reaction. I have had an extract which got four times as strong as formerly in the space of two days. Occasionally the reverse occurs, and an extract may become quite inert; the change may be sudden or gradual. I think, as a rule, it is unwise to continue to use extracts which have undergone any noticeable change in strength, even if it is allowed for in the dilution. I imagine the change indicates an alteration in the molecular composition of the fatty substances in the extract, so that the size and number of the particles which they form when diluted with a watery fluid are altered.

The other interesting point is the fact (which I believe was first pointed out by Bayly) that the diluted extract is more turbid and has a more powerful action if the two fluids are allowed to diffuse gradually the one into the other and not mixed at once. This has an obvious practical bearing: the one or other process must be employed throughout. I float my alcoholic solution on the top of the normal saline and allow them to diffuse together gradually for ten minutes or so and then slowly stir them together.

### TRUSTWORTHINESS OF THE REACTION.

When a new test is introduced the pathologist is constantly asked questions as to its trustworthiness, and the clinician very naturally wishes for a test that shall give 100 per cent. of positive results when the disease is present and none at all in its absence. Now with regard to the latter point, I do not think that there is any reason whatever to think that any of the diseases which are indigenous in this country (with the possible exception of scarlet fever, which may cause it for a short period) ever give rise to the reaction or that it ever occurs in health. But it is universally admitted that a certain small percentage of cases of undoubted syphilis do not react, and this has been used to discredit the reaction altogether, though most unjustly. Now it is extremely difficult to see any theoretical reason for the occasional failure of a reaction which occurs in the vast majority of cases of the disease, and I should like to ask whether it is not possible that these apparent exceptions occur from the use of methods which may cause a weak reaction to be missed or from the use of reagents which have altered in constitution. I wish to state most emphatically that I believe very good results can be obtained from all, or very nearly all, of the processes which have been employed—results so good that they constitute a priceless boon to the diagnostician. My reason for a comparatively long discussion into the technique of the different methods is to point out that with several of them there are combinations of conditions which may lead to an erroneous result, and that some, at least, of these may be avoided by the use of very simple and rapid methods.

Here I must point out that the advantage to be claimed for a simple method is not that it facilitates the work of the pathologist. The benefits that accrue from such a method, if equally accurate, are four in number: more tests can be made in a given time, so that there need be no hesitation in having the blood tested in every case, even where the diagnosis is improbable; the test can be completed and the result obtained quickly enough for ordinary out-patient work, so that the surgeon may know the result of the examination before prescribing for the patient; the possibility for technical error is greatly reduced; and lastly, and most important, quantitative work can be carried out by a process of trial, the result of one test being obtained before the next is commenced. I will explain what I mean by this shortly.

### TECHNIQUE OF THE VARIOUS METHODS.

Let me examine in brief the principles of the chief variants in the method that have been proposed. The original process, the so-called "classical" Wassermann reaction, which is used, with some slight modifications, by most of the workers in this branch, commences by removing the complement originally present in the serum. Leaving aside for a moment the alleged reason for this, let us turn to the methods in which it can be done. These are threefold. Firstly, we may heat the serum to 55° or 60° C.; this is the method that is usually employed, and it has the advantage of being quick and easy. Unfortunately, however, it appears that the temperature employed may weaken or hide the reaction, possibly by linking together the complement and some of the so-called syphilitic antibody, so that some of this substance is rendered inert and unable to combine with the antigen. The effect of this, if sufficiently marked, is to cause a negative reaction where methods which do not require heat would give a positive one. The second method—that of Wechselmann—involves the absorption of the complement with an inert substance, barium sulphate; it is theoretically sound, but somewhat complicated, and I do not think it is used practically to any considerable extent. Lastly, McDonagh has tried keeping the sera until the complement disappears spontaneously. This takes some days, which renders it entirely unsuitable for clinical work.

Having got rid of the natural complement the investigator next proceeds to add some fresh, in the form of guinea-pig serum. The question naturally arises, Why take the trouble to get rid of the complement when the next step is to replace it? It is not that which is present is unsuitable in quality; on the contrary, it will act perfectly well. The explanation given is that the natural complement present in human serum varies so greatly in amount that it makes the test unreliable. I have seen no proof of this, and from my own experience deny it most absolutely. I admit fully that if the amount of complement be tested on insufficiently sensitised corpuscles the amount of the former may be deficient, and this was my chief reason for abandoning the use of Fleming's method. Leaving this question for the present, let us turn to the way in which uniformity in the amount of complement is secured. This is accomplished as a rule by the addition of a known amount of guinea-pig's serum, no attempt being made to examine this to see what quantity of complement it actually contains, and yet the amount is well known to vary in different animals. Further, many workers keep the serum in the ice-chest for two or three days, or even more, regardless of the fact that the complement undergoes a rapid fall in amount and a remarkable qualitative change as well.

Others dry it on filter paper and make a solution for the purposes of the test; the amount obtained in this way must vary enormously. Thus it seems very doubtful whether these elaborate processes do as a rule secure the uniformity of complement which is supposed, erroneously, I believe, to be so essential.

Some observers do, it is true, attempt an evaluation of the complement in the serum and proceed accordingly. This is more scientific, but it is also very tedious, and I think not usually done. There is this objection even to this; the process takes some time (as usually carried out; it can be done more quickly by other methods), and during the time taken in testing it the amount in the part remaining is altering. In some cases this is not a serious objection, but it is a decided drawback where consecutive quantitative estimations have to be made, for with so delicate a substance it is not safe to assume that a value obtained on one day is true on the next.

### USE OF UNHEATED SERUM.

Let us consider in detail the objection to the use of unheated serum. The only errors which could arise would be due to the amount of complement being too small or too great. Too small an amount of complement would result in the production of a negative result where there should be a positive one: the extract absorbs some complement from a normal serum, and if the total amount were but small might be sufficient just to turn the scale, so that whereas the control tube without extract would show hæmolysis, the tube with extract would show none. This seems plausible, but, as a matter of fact, it is got over with the greatest ease; it all turns on the strength of the antigen, and if this is standardised in such a way that normal sera do *not* give the reaction (as I shall describe subsequently) the objection falls to the ground. But in this connexion much stress must be laid on the fact that the corpuscles must be fully sensitised, for if they are not they may show no sign of hæmolysis in presence of a trace of complement, though capable of full solution if sufficient of that substance is present. Again, as a matter of fact, an experience with over 500 sera has shown me that, provided the serum is not more than 24 or 36 hours old, and provided also that the sensitised corpuscles are added in the proportions I recommend (which has been worked out so as to be suitable for the average amount of complement in fresh human serum), such a phenomenon as I have described does not occur. I have only met with a single specimen (from a severe case of myelogenous leucocythæmia) which did not give enough complement for the reaction.

On the other hand, it may be objected that the amount of complement may be so large that it cannot all be absorbed by the antibody-antigen combination. This is a more valid objection, and I can only answer that I have never found any reason to believe that it ever occurs. I have often obtained weak positive reactions with sera having a very powerful hæmolytic action, but the conditions for a crucial test—an altogether exceptionally large amount of complement in a patient in whom we should expect, but do not find, a very faint positive reaction—have not occurred in my experience so far. I know from experience that a *strong* reaction is not masked in this way, whatever the amount of complement. But Noguchi, who leaves the original complement present and adds fresh, apparently gets very good results. Apparently, therefore, the presence of much more complement than ever occurs in natural human sera does not vitiate the result.

The idea that any error actually arises from variations in the amount of complement—avoidable errors, perhaps I should say—I believe to be entirely erroneous. As I remarked in my previous lecture, the hæmolytic system is simply an indicator, and is used only to see whether a certain combination has taken place, and provided there is neither excess nor deficiency, there is no more reason for getting exactly the same amount every time than there is for adding the same amount of litmus to a fluid we are titrating; and my chief endeavour in presuming to add another to the already long list of modifications of the reaction, is that I believe I have arranged the quantities of the other ingredients in the test so that they will react properly with any degree of complement within the normal limits.

### EMPLOYMENT OF SHEEP'S CORPUSCLES.

The processes which do not involve the removal and subsequent addition of complement may be classified under two heads. In the first, advantage is taken of the fact that human serum will, as a rule, hæmolyse sheep's corpuscles without the addition of an artificial immune serum; it contains an amboceptor which will link up its complement to these corpuscles. This is the basis of Hecht's method, which under Fleming's modification is largely used in this country. It is quite a good method, but it has some drawbacks. In the first place, the amboceptor is not always present, or, if present, not to an extent sufficient to cause hæmolysis with the complement also present, and in this case the test is useless unless serum from a known non-syphilitic person is added also. This, of course, is easy, but it is by no means so easy to say what amount should be added, for the addition involves *two* unknown substances (complement and amboceptor), one of which (the amboceptor) is by no means easy to estimate quantitatively. It is surely better always to add amboceptor in known amount, so as to get amply sufficient to sensitise the corpuscles to small traces of complement. The number of cases in which the test fails in its simpler form is variously stated at from 10 to 30 per cent. My own experience with it approached the latter figure, and I found that sera which gave no trace of hæmolysis with sheep's corpuscles reacted perfectly with fully sensitised human corpuscles; in one batch of seven sera four failed to react by Fleming's method, whereas all reacted next day by my own although, of course, the complement was weaker. It was from observations like these that I was led to the belief that the failures of the sheep's corpuscle methods are due to deficient amboceptor and not to insufficient complement.

Another objection I have to the method is that it is unnecessarily slow. The actual manipulation is quick and easy (the technique of Fleming's modification, apart from the differences in the reagents, is almost identical with my own), but the process is longer with the sheep's corpuscles because the human serum, although it contains amboceptor, contains no agglutinin, so that sedimentation is much slower. Using sensitised and agglutinated corpuscles, I can, if need be, perform the test in ten minutes. This is of enormous advantage in quantitative work, as well as in out-patient practice.

### EMPLOYMENT OF HUMAN CORPUSCLES.

In the next group of methods human corpuscles are used, and this, of course, involves the use of an immune serum to supply the necessary amboceptor to link up the pre-existing complement. This includes Tschernugobow's process, Noguchi's, Birt's, and my own. These methods have the great practical advantage that human corpuscles are always obtainable.

Noguchi's test thus seems to be more sound theoretically than Wassermann's, and observers who have performed parallel tests with the two speak highly of its value. But it is open to this objection: Noguchi, though he does not decomplement his serum, adds guinea-pig serum. Now this is unnecessary, and adds a useless reagent, besides which it is wrong, for the only error which could arise is that due to a possible excess of the natural complement, and not to its deficiency. Tschernugobow's method is the same as mine in essentials, but he does not employ the proportions which I believe to be important, and he dilutes his blood without allowing it to clot, which is much more difficult and less satisfactory. Lieutenant-Colonel Birt adds the corpuscles (human) at the first stage and the hæmolytic amboceptor subsequently. I experimented with this at the commencement of my researches, but abandoned it. There is a possible theoretical objection to it (the occasional presence of iso-hæmo-antibodies, which might, and I believe may, though rarely, cause spontaneous deviation of complement), and it makes the technique just a shade more complicated. Except for this, his method follows mine very closely.

### AUTHOR'S METHOD.

In my own modification[2] I prepare an emulsion of sensitised washed human corpuscles by adding 1 volume of corpuscles to 4 parts of heated immune serum from a rabbit which has been injected with human corpuscles. The strength of this serum is of some importance. It must be strong enough to sensitise the corpuscles to a trace of complement, and it must not be strong enough to clump them

[2] Vide THE LANCET, Sept. 3rd, 1910, p. 732.

instantly, so that they are shielded from the action of that substance. This is determined by experiment, and when the degree of dilution necessary is found the serum is diluted to that extent and placed in sterile ampoules. It gradually loses strength, so that it is advisable to make it a little stronger than is required in the first instance. Enough of this 20 per cent. emulsion of corpuscles to last for some twenty experiments is prepared; the mixture is incubated for a few minutes to allow of the linking-up of the amboceptor, and is then ready for use. For the test take 1 part of the serum to be examined and 4 parts of normal saline solution. The actual amount used is only about 5 cubic millimetres, and the various quantities are measured by means of a Wright's capillary pipette with marks indicating 1 and 4 units. Serum and saline are placed in a narrow tube in a water bath at 38° C. Next a mixture in identical proportions but made with diluted antigen is prepared, and placed side by side with the first. This is the test, the other the control. Other tubes of sera to be examined are prepared in the same way, and when these are done it will probably be time to complete the first test. For some extraordinary reason, which I have been unable to understand, it seems still to be the custom for workers at this reaction to allow the mixture to incubate for an hour or even longer at this stage. I showed last September that the combination takes place in five minutes or less at 38° C.; of course, if a large bulk of fluid is placed in an air-incubator it will take an appreciable length of time to reach this temperature, but with small amounts of fluid in a water-bath it is quite unnecessary to allow more. The second step is to add 1 part of the emulsion of sensitised corpuscles to each tube; if they have settled they must previously be mixed in well. If the balance between amboceptor be right the corpuscles in the control tube will be dissolved before they have time to settle, and if not they must be stirred once or twice, the tubes containing the actual test being stirred in a similar way. In a very few minutes the result can be read off. In a negative reaction both tubes show hæmolysis, complete or nearly so; in a positive one the first tube only will show hæmolysis, whilst in the latter the corpuscles will settle, leaving a colourless, supernatant fluid.

### Possible Quantitative Methods.

I have claimed as one of the advantages of this shortened method the fact that it allows quantitative estimations of the strength of the reaction to be made with the greatest ease; of the advantage of this I shall speak anon. Now there are three or more possible quantitative processes available. In the first, we take fixed amounts of serum and antigen, and see how much complement can be absorbed. I think this is the method usually employed, in a very rough way, when quantitative estimations are attempted. Two tubes are prepared, one containing twice as much guinea-pig serum as the other, and inhibition of hæmolysis in one tube and not in the other is regarded as a weak reaction, inhibition in both as a strong one. Sometimes more accuracy is attempted, and the exact number of hæmolytic doses absorbed is estimated. This is a very tedious process, and I have already urged theoretical objections to it.

Another principle is to keep the amount of complement constant, and to find the greatest dilution of serum which will just absorb it. This also is a practicable method, but it is more complicated than the method I am about to describe.

The process which I use (I claim no originality for it except in details) depends on the degree of dilution of the antigen. It has this practical advantage, that the series of dilutions of antigens can be prepared at the beginning of the experiment and are available for all the sera. Thus the amount of labour is much less than it would be if we had to prepare dilutions, it may be numerous, of each serum, and the chance of error is less.

### Standardisation of Antigen.

The first essential is, of course, a carefully standardised antigen. It might be thought that this would be essential for any method, but I do not think its importance is sufficiently emphasised in many of the descriptions of the process which are extant. Further, the method of standardising the extract which is described I believe to be wrong in principle. It should be compared with normal and not with syphilitic serum, and for this reason—the strength of syphilitic sera varies enormously, whereas that of normal sera is much more constant. Some syphilitic sera will give a positive reaction with antigen when the latter is diluted 300 times or more, so that it is obviously useless to attempt to standardise an unknown extract by an unknown serum and then work back and try to titrate the serum by the antigen. It is, of course, a great advantage to test the extract on as many known syphilitic sera as are available, but the criterion of its strength must be its action on the relatively constant normal serum. I employ, and should like to suggest as a standard, the use of an extract of such a strength that, when diluted to 10 times its volume, it exerts a definite inhibiting influence on a normal serum, but does not cause complete inhibition except in a small proportion of cases. Thus my last antigen was tested with six known non-syphilitic sera. All these gave complete hæmolysis in the controls, whereas when tested with a 1 in 10 dilution of the extract two gave hæmolysis of about half the total amount of blood, whilst the other four gave only strong traces of hæmolysis. With an extract of this strength some normal sera may give a complete reaction at 1 in 10, whereas others may give almost complete hæmolysis. A complete reaction with a dilution of 1 in 10, therefore, is without clinical significance; one at 1 in 20 is rarely seen, but when it is it is suggestive, and if met with, for instance, in a patient with a doubtful chancre, will usually be found to mark the beginning of a definite reaction. Complete inhibition at 1 in 30 is conclusive, but the reaction may go much higher than this.

I must repeat a warning on a subject touched on previously. It is necessary to bear in mind the fact that the extract may alter quite suddenly and without any warning. It may become either stronger or weaker. Thus I have seen a serum become four times as strong as it was previously in the course of a few days. Originally of the standard strength I have described, it suddenly became so strong as to give a positive reaction with all normal sera when diluted 1 in 40. On the other hand, it may become weaker—indeed, quite inert. This instability of the extract is one of the greatest difficulties the worker has to contend with, and is the chief reason why the reaction is not likely to become a consulting-room test. I do not know any means by which it can be avoided, but if the normal standard I have adopted be suggested, and if occasional tests of normal sera are made with a dilution of 1 in 10, it can easily be detected. If there is complete hæmolysis in these tubes the weakening of the serum may be suspected, whereas if they show little or no hæmolysis the extract has got stronger. In either case it is best to discard it and use fresh.

I prepare the extract from normal human heart-muscle as follows. The muscle is weighed, and 1 cubic centimetre of absolute alcohol added for each gramme of material. These are brayed together in a mortar, some pieces of glass being ground up with them. The mixture is heated to 60° C. for an hour. Next day the grinding and heating are repeated, and the mixture again allowed to stand for 24 hours, at the end of which time it is filtered and titrated with normal serum in the manner described. If it is too strong it may be diluted with 90 per cent. alcohol, but if it is too weak it is best to discard it and prepare some fresh. It is almost necessary to have several samples available in case one should suddenly become useless. I regard the care of the extract as the only real difficulty in the process.

### Author's Quantitative Method.

The actual technique of the quantitative determination of the strength of the reaction is as follows. First, a control test with normal saline solution (to make sure that there is abundance of complement) is made, and also a test with a dilution of extract at 1 in 30. If there is no hæmolysis in this tube it indicates a positive reaction. In this case a second test, at 1 in 100, is tried at once; if there is no hæmolysis in this still higher dilutions are taken, until the degree to which the extract must be diluted so that it does not inhibit hæmolysis altogether is found. The strength of the reaction is expressed by the weakest dilution with which there is no trace of hæmolysis. For example, if there was a trace of hæmolysis with a dilution of 1 in 150 and none with a dilution of 1 in 100 the serum would be said to give a reaction at 1 in 100. If there is hæmolysis at 1 in 30 the reaction is probably absent, but if present is extremely faint. I usually try also a dilution of 1 in 20. In a certain proportion of cases I try dilutions of 1 in 10, either with normal sera or

with sera which I have found to give a negative reaction at 1 in 20. This serves as a check on the extract. This should not be neglected; the few occasions on which I have obtained anomalous results have all been times when the extract has altered suddenly.

### ADVANTAGES OF A QUANTITATIVE METHOD.

The advantages of a quantitative method are numerous. It enables us to detect small traces of a reaction which would otherwise be overlooked. For instance, with a properly standardised extract I have never seen a complete reaction at 1 in 20 in any patient in whom syphilis could be excluded. At the same time, it is impossible to say that it might never occur, so that its significance is determined by the conditions of the case; for instance, it would render the diagnosis of syphilis in a case of tabes practically certain, but would be of much less importance in the case of a patient with a doubtful secondary rash and sore throat, in whom we should expect to get a much stronger reaction. Slight reactions—i.e., those at a dilution not greater than 1 in 30—are met with in very early cases, in very late cases, and in patients partially under the influence of mercury. In general, patients with well-marked syphilis give reaction at 1 in 75 or 1 in 100, and often much higher. In a general way I believe that a high reaction indicates a severe case, but a very much more important question is how the reaction behaves under treatment. In a few cases I have had the opportunity of watching the titre of the reaction gradually fall and disappear altogether, and it seems to me that a weakening reaction indicates that the treatment employed is suitable, and should be persevered with. In a single case I have witnessed the failure of mercury to influence the symptoms or to cause a fall in the strength of the reaction; the patient then had "606" and made a rapid recovery. In this case, as in another I had seen, the first effect of this latter drug was to cause a very rapid and marked rise in the strength of the reaction, which in one went up from 1 in 75 to 1 in 400. This rise was followed by a rapid fall, the reaction taking two months to disappear. In another case a weak reaction (1–30) disappeared in two days after an intravenous injection of "606."

Children and adults with hereditary syphilis as a rule give very strong reactions, and this must not be taken to indicate a bad prognosis. Occasionally, however, patients with slight indications of the hereditary disease may give mere traces of a reaction, and I think this may be taken to indicate, what has been denied, that the reaction may disappear with the progress of time in this class of cases.

Another advantage which quantitative work affords in the certainty of the diagnosis if a strong reaction is obtained. I should feel quite certain of the diagnosis, whatever the clinical symptoms or whatever the character of the case, if the serum gave a reaction at 1 in 100, and believe that with reactions like this (and they are the rule and not the exception in cases with manifest syphilis) the test is an absolute one.

### INTERPRETATION OF THE TEST.

Finally, let me lay down some rules for your guidance in making use of the reaction in diagnosis.

First, consider the stage of the disease, if syphilitic. If it is early in the primary stage a negative result means nothing, but if the supposed chancre has been present for six weeks or more you may expect to get a positive reaction, and its absence is of some weight as indicating the probability (it is not more than that) of a negative diagnosis. If the patient has what are secondaries, if syphilitic at all, the absence of the reaction is conclusive. If the disease is in a still later stage, but if there are lesions present and the disease, whatever it is, is progressive, then the absence of the reaction is *almost* conclusive proof that another diagnosis must be sought; the disease may be syphilis, but the chances are enormously against it.

If the patient is supposed to be in the later stages of syphilis, but there are no symptoms or lesions apparent, the question of cure arises. If the reaction is present, even if only slight, the patient is not cured. If there is no reaction the question is more difficult. I believe on the whole that you are justified in pronouncing him cured, but there is always the possibility that the case may be one of those rare ones which are supposed to occur in which no reaction is given at any time. If, however, you have previously examined the blood and have found the reaction, and then at a later date find it absent, the probability of cure is much more certain, always remembering the fact that mercury in itself inhibits the reaction.

Thus in a patient under mercury a positive reaction is conclusive—a negative reaction means nothing. In this case you must wait at least a month, and better for two, before pronouncing the patient cured. I believe a similar phenomenon occurs with "606," though here the explanation is probably different. At any rate, the patient should be examined some two months after the disappearance of the reaction to make sure that it has not recurred. If it has not the cure is probably complete.

Remember in all cases that a positive reaction indicates the advisability of continuing treatment. Thus, in the post- or para-syphilitic stages a reaction (in this case usually slight) may occur or may be absent. If present, I believe that antisyphilitic treatment is indicated, and may prevent the disease from going further, though it will not undo the harm that has been done, or prevent the gradual shrinking of scar tissue, &c.[3]

Remember that a person with congenital syphilis may give the reaction for life, and bear this in mind as a possible fallacy in interpreting such a result. In one of my cases at least the serum test seemed not to agree with the clinical diagnosis. The reaction was a strong one and was obtained by two other workers, and the mystery was not cleared up until the patient's family history was investigated. It is worthy of notice that if there is a question as to whether a case of syphilis is congenital or acquired, an examination of the blood of the mother will usually settle the difficulty, whilst an examination of the blood of the father will not necessarily do so.

It seems hardly necessary to mention the fact, but a positive Wassermann test tells us nothing as to any illness other than syphilis from which the patient may be suffering. The concomitance of syphilis and malignant disease is by no means uncommon, and though the Wassermann test will tell you in most cases whether a person has or has not the syphilitic infection, it affords no clue as to whether a given lump is a gumma or an epithelioma.

## THE MECHANICAL TREATMENT OF SPINAL CARIES.

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MEDICAL SUPERINTENDENT, LORD MAYOR TRELOAR CRIPPLES' HOSPITAL AND COLLEGE, ALTON, HANTS.

### *Splints and Hyper-extension in Spinal Caries.*

AMONGST the commoner diseases prevalent in this country the treatment of few, perhaps, has been so neglected as tuberculous disease of the spine. This is the more a reproach as the disease was first effectively studied by one of our greatest English surgeons, Pott, and his name has been universally given to the condition. The reasons for this neglect are perhaps not far to seek. The course of the disease is a long one; conservative treatment, the most satisfactory and indeed the only treatment that can be seriously considered for the bulk of the cases, is slow and tedious. But perhaps the most potent cause for this neglect is the fact that, outside our infirmaries, there are few institutions in this country able to devote a sufficiently large number of beds for a sufficiently long period to enable the disease to be really efficiently studied and treated. Hence it is that the condition, though very amenable to treatment, has been regarded with feelings almost of hopelessness. Very rarely are careful attempts made to prevent the onset of deformity or to correct deformity already existing, and though the prognosis as regards cure is not considered bad, yet deformity and severe crippling are by many regarded almost as inevitable.

At the hospital at Alton, in Hampshire, established by Sir William Treloar in September 1908, a very considerable number of beds are occupied by cripples suffering from tuberculous disease of the spine. A patient once admitted is not discharged until there is reasonable

[3] In my first 12 cases of tabes I got a positive reaction in all. This was mere chance, and since then I have got about 65 per cent. of positive results, much the same as other observers.

evidence that the disease is arrested or cured. The treatment is conducted under ideal conditions and every endeavour is made not only to cure the patient, but also to prevent or correct deformity. Before outlining the means by which deformity may be prevented or arrested, it is desirable to consider the nature of the deformity and the factors which produce it. Tuberculous caries commonly affects the bodies of the vertebræ. Other parts of the vertebræ may be attacked, but for the purpose of this paper consideration will be directed to the commonest lesion—caries of the body. The extent of the caries varies from a small and relatively insignificant lesion to an extensive one affecting several contiguous vertebral bodies with their corresponding intervertebral discs, and the ligaments and structures adjacent. In progressive and untreated cases the result primarily is a tendency for the spine to bend forward above the lesion and to a less extent below the lesion, forming at the lesion the so-called angular curvature; and secondarily deformity of other parts owing to displacement, compensation, or muscular spasm or contraction. The degree of deformity is very variable and depends on numerous factors, of which may be enumerated the position in the spine of the tuberculous lesion, its extent, its direction of progress, the effect of treatment, age of patient, amount of muscular spasm, &c.

The causes of the primary deformity are: (1) Destruction of the attacked bone; (2) the effect of gravity acting upon the weakened spine; (3) muscular spasm secondary to the inflammatory process; and (4) alteration in intermuscular balance, leading to certain muscles acting at an unduly great or diminished mechanical advantage, and ultimately becoming permanently contracted or attenuated. The first two causes are obvious and well recognised, but the latter two, while being of the highest importance, have received little attention. It must be remembered that the lesion is first of all an inflammatory one, and that it is a generally accepted rule that in the treatment of an inflammatory lesion rest is of the first importance. Therefore all acute cases of spinal caries should not only be at rest but be at rest in the recumbent position; and, furthermore, to rest completely the inflamed part immobilisation of that part is necessary to fulfil the requirement demanded. Rest in the recumbent position will at once abolish one of the factors causing the deformity—viz., the action of gravity upon the weakened spine—for in this position pressure of superincumbent weight is removed entirely, while if the patient is immobilised the strain of use is abolished.

The next point to be most strongly emphasised—and the more so because it is in spinal caries so little considered—is the effect of muscular spasm. Muscular spasm and consequent spinal rigidity manifests itself very early in the course of the disease and is one of the most valuable aids to early diagnosis, frequently appearing some considerable time before there is any evidence of angular curvature. It is primarily protective, being nature's way of securing immobility to the affected part, but the cost of this immobility to the patient is heavy and can be altogether avoided. Unchecked it produces much pain and may actually aggravate and promote the spread of the disease. Artificial immobility, properly applied, avoids these drawbacks. Professor Howard Marsh [1] very clearly describes the evils of unchecked muscular spasm: "All will accept the general proposition that rest is essential in the treatment of inflammatory diseases of the joints. Yet there are some points which require to be insisted upon in order that this principle may be adequately carried out. The first relates to the injury produced by reflex contraction of the surrounding muscles. This reflex contraction is present in the case of all the articulations." It produces "interosseous pressure which is mischievous not only in its immediate effect on the ends of the bones, but because, by giving rise to reflex irritation, it tends to maintain and aggravate spasm in the surrounding muscles. Indeed, these two conditions of interosseous pressure and muscular spasm act and react on each other and so concur to promote the advance of the disease." The muscular spasm especially affects those muscles adjacent to the focus of the disease. The contraction of the muscles alone, even when the patient is recumbent and when the action of gravity in the production of deformity is removed, may of itself, and frequently does, cause deformity. The eroded vertebral body under the constant strain of its investing irritated muscles is gradually compressed and at length gives way. Deformity once commenced proceeds more rapidly as the mechanical advantage under which the anterior spinal muscles act becomes more pronounced, while the opposition offered by the posterior muscles simultaneously decreases. "Normally, when the body is erect, there is a proper adjustment or balance between the bones, the joint structures and the muscles, so that the weight is borne easily without any special strain upon any one part or to any one structure. As soon, however, as the body bends forward, as it must at the seat of the disease, the posterior muscles, because obliged to pull round the angle of the knuckle, work at a distinct disadvantage, and the balance between the extensors and flexors, which is nature's protection against deformity, is lost. The anterior muscles improperly antagonised draw the body forward." [2] The muscles once contracted, if left to themselves, do not relax, but remain permanently shortened. Even if the disease does become arrested they still anchor down the bent and by this time commonly ankylosed spine, and if the patient is a child the evil results in subsequent growth may become still more apparent, for not only is the deformity maintained but other structures in the vicinity become more displaced, embarrassed, and more distorted. In dorsal caries the baneful effects of this are particularly apparent.

From consideration of the preceding statements it follows that in the treatment of acute spinal caries general rest should be enforced, absolute rest to the affected part is desirable, deformity should if possible be prevented, interosseous pressure at the site of the disease avoided, and muscular spasm overcome. These desiderata may all be obtained by keeping the patient recumbent, immobilised, and hyper-extended, the hyper-extension being in some cases aided by traction extension.

I now turn to the details of the apparatus employed designed to meet those requirements in the treatment of spinal caries which I have emphasised. Many varieties of spinal boards have been described, and it is impossible in this paper to consider all these or to weigh their respective advantages or drawbacks, but one which appears to be peculiarly suitable for the treatment of spinal caries while the patient is in the recumbent position is that used at the Maritime Hospital, Berck-sur-Mer.[3] This board is the model which I take for those employed at Alton, but I have altered the board in various ways, and I venture to think I have made it more generally suitable for the treatment of these patients. The board as used at Alton consists of an oblong tray made of strong but light wood. The length should be from 12 to 18 inches longer than the patient and the width about 8 inches greater than his greatest width. The sides of the board are about the same height as an ordinary Phelps box, roughly 3 to 4 inches, with the exception of the foot end, which is raised to a height of from 15 to 18 inches and thereby takes away from the patient's feet the weight of the bedclothes and tends to prevent the onset of foot-drop. The bottom of the board is perforated with numerous holes to admit ample ventilation of the mattress. The corners are bound with sheet-iron angle pieces, which, while adding greatly to the strength of the apparatus, do not unduly increase its weight. Across the board is placed a piece of wood of suitable height, usually 2 to 3 or 4 inches, and of about the same width, which stretches from one side of the board to the other and is designed to be placed immediately under the most prominent part of the angular curvature. It is fixed by means of two iron pins which serve a double purpose—(1) to retain the cross-piece in position, and (2) to indicate at a glance where on the patient the angular curvature is. A firm pillow, if fixed, forms a suitable substitute for the wooden cross-piece. A well-prepared horsehair mattress occupies the tray over the cross-piece and on it the patient reclines. On the head and foot ends of the board are slits cut for the hands to facilitate its transport. At the head end of the board two pieces of strong elastic webbing 1 inch wide and about 6 inches long are attached, and to these a bridle can be buckled when head extension is desired. At the foot end, which, as previously described, is raised to prevent foot-drop, are two longitudinal slits

[1] Howard Marsh and Gordon Watson: Diseases of the Joints and Spine, Cassell and Co., 1910.

[2] Goldthwait, Painter, and Osgood: Diseases of the Bones and Joints. Heath & Co., 1909.

[3] Ménard: Étude Pratique sur le Mal de Pott, Masson et Cie, 1900.

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# An Address

ON

# SOME MEDIASTINAL AFFECTIONS.

*Delivered at the Medical Graduates' College and Policlinic on Jan. 30th, 1911,*

BY PERCY KIDD, M.D. OXON., F.R.C.P. LOND.,

PHYSICIAN TO THE LONDON HOSPITAL; CONSULTING PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON, AND TO KING EDWARD VII. SANATORIUM.

GENTLEMEN,—It is not my intention on the present occasion to attempt to deal with the general topic of mediastinal tumours. I wish first to describe briefly certain unusual examples of mediastinal disease, and secondly to discuss some points in the clinical symptoms and diagnosis of tuberculous mediastinal glands.

## I.—UNCOMMON CASES OF MEDIASTINAL DISEASE.

CASE 1. *Substernal thyroid tumour simulating a mediastinal new growth; operation; recovery.*—The patient was admitted into the London Hospital in February, 1906, as a case of mediastinal tumour. For some four years he had suffered from difficulty of breathing. Treatment had given some relief until two weeks before admission, when his breathing became much worse. Two months previously to admission a lump in the neck was first noticed by his medical attendant. The patient was a dark man, of Hebrew race, with an anxious expression, but not obviously wasted. There was slight stridor, mainly inspiratory. The superficial veins of the neck and chest were distended. On coughing a large swelling appeared in the neck above the clavicles, more on the left side, suddenly disappearing when coughing ceased. No lump was felt behind the clavicles. The lungs were hyper-resonant on percussion and the breath sounds were universally weak. There was no dulness over the sternum. The heart was normal. The larynx was healthy; no paralysis of vocal cords, and no dysphagia.

The long history and the absence of wasting seemed to exclude malignant disease, though the evidence of mediastinal pressure was very clear. The diagnosis suggested was substernal thyroid gland. The swelling above the clavicles on coughing was attributed to emphysematous bulging of the apices of the lungs. My colleague, Mr. James Sherren, examined the case, and pointed out that the swelling which appeared in the neck on coughing was dull to percussion, and he suggested that it was due to a moveable substernal thyroid tumour. Radiograms showed a fusiform shadow behind the sternum running up towards the neck. Mr. Hurry Fenwick subsequently saw the patient and agreed to attempt the removal of the tumour.

On March 5th, under chloroform, an incision was made along the upper border of the left clavicle in its outer half. From the inner end of this incision another was carried up and out to the anterior border of the trapezius. The veins were very large and bled freely and had to be ligatured. The platysma and omohyoid (posterior belly) were cut through and a dissection made on to the sheath of the subclavian vessels. No signs of the lump were found. The patient was made to cough and the lump was found to the inner side of the wound. The incision along the line of the clavicle was carried further and more vessels were caught and ligatured, first the muscular head and then the sternal head of the sterno-mastoid muscle had to be cut through. The lump was then found and exposed. A retractor was put on to hold back the soft structures and the swelling was grasped by tenaculum forceps and pulled out. On puncture yellow cystic fluid escaped. The lump, now smaller, was pulled on and eventually shelled out of its bed. It was much larger than at first suspected and was about the size of a large William pear. There were no adhesions. The tumour was continuous with the isthmus of the thyroid gland. The junction was cut through, the vessels ligatured, and the surface cauterised. The cavity occupied by the tumour reached down into the thorax behind the arch of the aorta. A drainage-tube was inserted in the cavity. The tumour proved to be an encapsulated adenoma. The wound healed fairly well, but some suppuration took place.

The patient was discharged on March 30th. When I saw him a few weeks later the wound had healed and no abnormal physical signs could be detected. The patient was completely relieved of all his symptoms. I have given the full surgical notes of Mr. Hurry Fenwick's operation as the case is an unusual and instructive one, and the results were highly satisfactory.

CASE 2. *Mediastinal cyst (? dermoid).*—The patient, who was 20 years of age, had suffered from a dry cough from January to Easter, 1891, when he was suddenly seized with sharp pain in the left side and shortness of breath. Signs of pleural effusion developed and he was tapped, a quart of clear yellow fluid being withdrawn. A week later he was aspirated again, the result being a tumblerful of turbid fluid with flakes floating in it. Since then he had dragging pain on raising the left arm, and dyspnœa. In August, 1891, a swelling appeared in the upper part of the subcostal angle. I saw the patient at the Brompton Hospital as an out-patient in October, and he was admitted under my care through the kindness of my colleague, Dr. F. T. Roberts. Physical examination showed dulness and signs of fluid on the left side from the second space in front and the spine of the scapula behind to the base. The heart was displaced to the right of the sternum. On the right side in front from the clavicle to the third space there was a vertical strip of dulness extending from the middle line of the sternum outwards to the right for 1½ inches. Immediately below the ensiform cartilage there was a rounded, slightly pulsating elastic swelling. The signs were somewhat puzzling. For although the evidence of fluid in the left pleura was unmistakeable, the patch of dulness to the right of the upper part of the sternum and the epigastric tumour were difficult to explain. The possibility of an encysted mediastinal empyema was suggested.

On Oct. 15th the patient was aspirated by Mr. R. J. Godlee in the eighth space in the scapular line, and 65 ounces of dark blood-stained fluid were drawn off. Microscopically red blood corpuscles, leucocytes, and spherical epithelial cells with large nuclei and granular débris were found. The dulness on the left side diminished, but the epigastric swelling and the patch of dulness to the right of the sternum persisted. I will now quote Mr. Godlee's account of the subsequent history of the case.[1]

> On Nov. 28th an incision was made into the epigastric swelling which was becoming more tense, and a cavity was opened containing a considerable quantity (6 or 7 ounces) of brown purulent fluid something like that previously extracted from the side, floating in which were numerous small rounded masses of a brilliant chrome-yellow pultaceous material, looking like the yellow palm oil used for lubricating the wheels of railway carriages. The cavity extended upwards behind the sternum, and on a subsequent occasion I endeavoured to discover its upper limit by making a hole through the sternum. The finger, however, was found to be amongst the large vessels in the superior mediastinum and I did not venture to go any further. An elaborate analysis of this fatty material was made by Dr. Halliburton, but it threw no light on the case. We never found any of the usual contents of dermoid cysts and I do not therefore know whether the case should be placed here [i.e., chapter Dermoid Cysts]; but I am at a loss for any other explanation of it. The yellow material continued to escape for a considerable time and ultimately the sinus closed. It remained healed for some time, but subsequently a small ulcer formed at the top of the sternum, which, after discharging for some months, finally healed

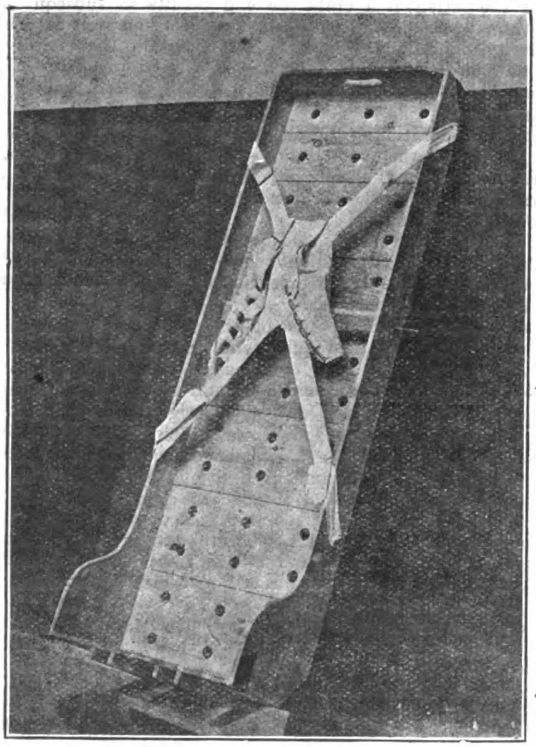
I saw the patient myself in 1897—i.e., about five years after the operation—when he was in excellent health. There was a small scar just above the right sterno-clavicular joint, and deep scars over the lower end of the sternum and epigastrium in the site of the two operations. With the exception of slight deficiency of movement on the left side of the chest there were no abnormal physical signs.

CASE 3. *Mediastinal abscess perforating the trachea and œsophagus and causing subcutaneous emphysema and cellulitis.*—The patient, a man aged 37 years, was admitted into the London Hospital on Oct. 4th, 1900. He had been taken ill seven days previously with a shivering fit and sweating, and shortly afterwards he had noticed a red swelling in the neck. The swelling had been much worse a few days previously to admission, diminishing suddenly after spitting up much phlegm. On admission the patient was cyanosed, and the skin of the lower part of the neck was congested and boggy, and emphysematous crackling was detected. The pulse was 138, the respirations were 42, and the temperature was 100·8° F. There was dulness to percussion over the lower

[1] Fowler and Godlee: Diseases of the Lungs, p. 698.

through which the cords of a leg extension can be passed over a suitable pulley. This pulley is fixed to two perforated upright pieces of wood attached to the board on each side of each longitudinal slit, and these are so arranged that between them an upright extension rod can be inserted if there is much flexion, and if at the commencement of treatment the leg cannot be sufficiently extended to allow it to be drawn directly in line with the trunk. As a matter of convenience it is usually desirable to fit into these extension poles a triangular frame of wood terminated by a pulley which will carry the extension well beyond the foot of the bed and allow the extension cord to hang free. The patient is fixed on this board in a very simple and effectual manner. A jacket composed of stout jean fitted accurately to his body and preferably stiffened with whale-bone encases the patient. On the back of the jacket two strips of webbing are

FIG. 1.



Spinal board.

let in, which strips cross each other as a St. Andrew's cross, and these are buckled to the sides of the board and effectually prevent the patient from moving in any direction and keep him in the exact position which has been decided upon as desirable. The jacket should be laced and buckled over the front of the patient, as in the case of a child mere buckling will not prevent the patient from undoing his straps and himself altering his position. Children are somewhat puzzled if in addition to the buckles the jacket is laced, and this combination is usually sufficient to prevent them altering the adjustment.

This board has numerous advantages. It is extremely simple, efficacious, portable, convenient in nursing, hygienic, and comfortable for the patient. The bed-pan can easily be administered without the patient's position being in any way disturbed, and if desired the patient can be tilted out of the horizontal position, but in this case an addition should be made to the jacket which will be described later. It will be at once seen that extension can be made from the head or the legs to any extent required without the board being necessarily tilted, as the method of fixing the patient prevents him from sliding out of the desired position. In cases of cervical caries a bridle is fixed on the head and attached to the elastic straps already referred to. This bridle should be especially constructed and adjusted with great care. I am in the habit of making it of webbing, and the particular form of bridle employed has the following features: the chin strap has a diamond-shaped aperture in which the chin can be inserted and fixed, or better is made of leather moulded on to a cast of the chin; the occipital strap meets the chin strap at a point between the eye and the ear on each side, being permanently attached on one side and buckled on the other. From this angle of union a straight strap on each side passes to the elastic extension bands, and these traction bands are prevented from slipping by another strip of webbing attached to them and which passes round the head, behind over the most prominent part of the occiput and in front across the forehead just above the eyes. The object of having a bridle fixed in this way will become apparent if the method in which the extension acts is considered. The centre of gravity of the head lies roughly in a line between the eye and the ear. The more anterior the point of traction be on this line the more hyper-extended the head will become, and the nearer the ear the point of traction may be the more will the head tend to flex. If, then, the particular degree of hyper-extension be decided upon and that point be always rigidly adhered to, the rest which will be given to the diseased cervical spine will be most effectual and an approximation of immobilisation be obtained. To prevent lateral movements of the head either side straps may be applied, or else, as is more commonly done, a sand bag on each side secures the desired fixation.

In cases of dorsal caries, particularly upper dorsal caries, angular curvature produces a very marked and unsightly deformity. The deformity here is of two kinds: (1) the primary deformity due to the curvature itself and (2) the secondary deformity induced in the bony thorax and which is entirely the result of displacement produced by the alteration in the contour of the spine. If deformity of the spine is prevented, the secondary deformity does not occur. It is desirable in cases of upper dorsal curvature to remember that the scapulæ themselves and the muscles attached thereto may prevent the best results being obtained by hyper-extension, and it is therefore often desirable to place in the jacket which has already been described appropriate padding under the curvature and between the shoulder-blades to increase the hyper-extension which would be produced by the cross-piece alone, but which, if the cross-piece alone were employed, could not act to best mechanical advantage.

In cases of lower dorsal or lumbar caries psoas spasm is an additional factor which must often be considered, and this can be best overcome by leg extension, which again by the method of fixing the patient can be easily applied without discomfort and without the board being removed from the horizontal position.

In cases where the disease is active and where there is much reflex irritation of the muscles about the spine simple hyper-extension is sometimes not sufficient, and head and leg extension combined will be necessary to overcome the spasm of the muscles and prevent increase of deformity resulting from muscular spasm, but this extra extension very rarely has to be maintained for any considerable period. Three weeks of combined head and leg extension is usually sufficient completely to abolish spasm of the muscles—at any rate, spasm of a sufficient degree to cause deformity.

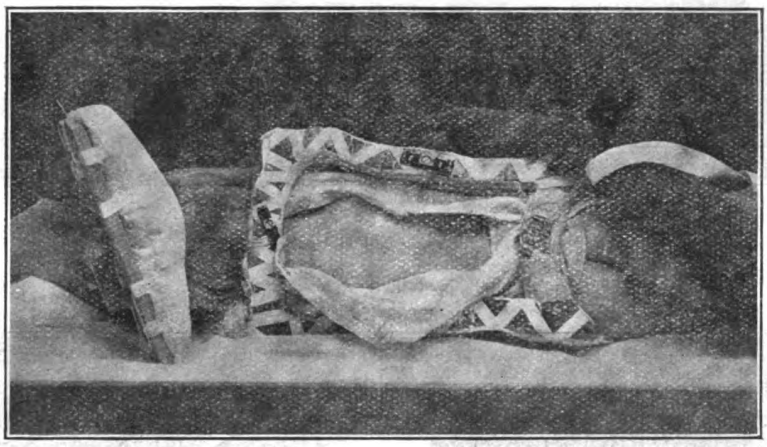
The board just described, while extremely efficacious and of the very greatest value, has, nevertheless, some disadvantages to which I will now allude, and these disadvantages, though apparently not serious, are still sufficient to make it desirable to design some other method of mechanical treatment. In the first place, it must be remembered that in a patient with spinal caries strapped in one position with considerable pressure acting on the angular curvature, bedsores may occur unless the greatest care be taken, and to prevent the onset of bedsores it will be found desirable in the majority of cases to attend to the patient's back every four or at the most every six hours. It is my practice to have the child turned on his side at these intervals and the back thoroughly washed, powdered, and massaged. If this treatment be assiduously undertaken bedsores should not occur. But it will be at once seen that the necessity for this movement is a great disadvantage—(1) because the spine is not maintained in a state of rigid immobility, and the movement may retard the arrest of the

disease or may even provoke a new spread of the inflammation; and (2) because it is almost impossible to ensure that after the child is replaced in his jacket the adjustments will be as perfect as is desired and the apex of the curvature occupy the summit of the convexity on the board. It may seem that these objections are not of the first importance, but in practice I find that they undoubtedly do occur and that they are a source of danger. It is quite easy for the nurse to replace the child in such a position that the curvature is a little above or a little below the cross-piece, and in that case not only is the deformity not diminished, but it may even be increased. Another point to be remembered is that some distension of the child's abdomen with flatus will necessitate the loosening of the jacket and may allow the child to somewhat shift his position.

To overcome the above disadvantages I have been in the habit of employing a splint which I have especially designed and to which the name of "the back-door splint" has been applied. Each spinal splint is made especially for each individual case.

*Measurement of the splint.*—The patient is stretched on his back on a piece of paper, the head is held by one assistant and the legs by another, and the contour of the trunk is traced out. The splint should be a shade smaller than the contour of the trunk. The bottom of the splint should be just above the natal cleft. The tracing is then cut out and a piece of beechwood cut to exactly a similar size. Well-seasoned beech is especially chosen because experiment has shown that it is very strong, that it does not warp readily, and it has the additional advantage of being cheap. The outer part of this is cut away 1 inch from the periphery all round, forming an outer frame. This is covered with sheet iron screwed to the frame, and forms a strong and rigid framework. The iron is then lacquered to prevent it rusting when subjected to the heat and moisture of the body. The inner part or back door which fits into the outer frame accurately is pared down a little so that it can be removed and replaced with great ease, and is perforated with holes for a double purpose—both to ventilate and to assist in fixing the padding which is later to be applied to it.

FIG. 2.



Back-door splint with patient. The splint is so designed that the patient may be permanently immobilised and hyper-extended while the back is readily accessible. The back door is easily removeable and may be repadded as circumstances require. On this splint the patient can lie in comfort for an indefinite period, and increasing deformity is impossible.

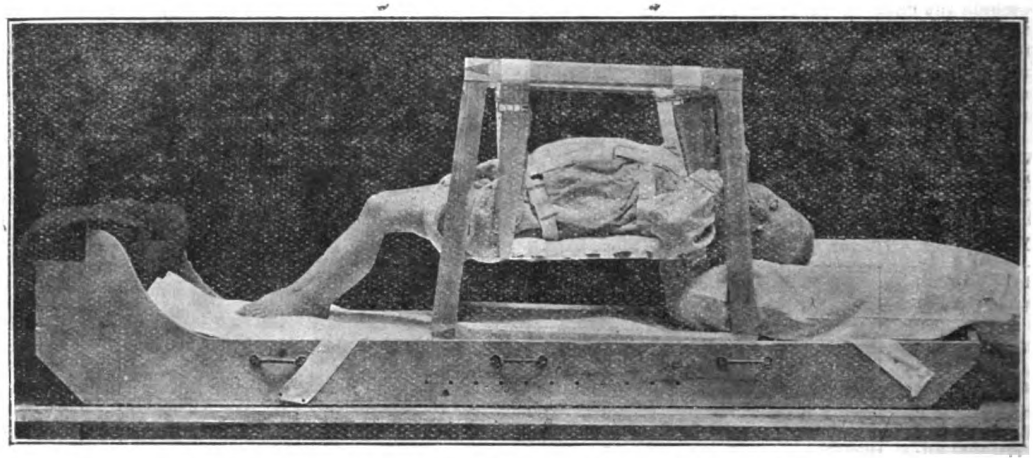
*The padded outer frame and back door.*—The outer frame is padded evenly all round, but especial care must be taken in padding that part which will come in contact with the sacrum. The padding should be perfectly even, and the best material to employ is animal wool because this never cakes and has a springiness and elasticity which make it peculiarly suitable for this purpose. The padding is firmly bound down to the splint by splint linen, and should be covered on the lower part with jaconet to prevent it being soiled or saturated if the patient is not able properly to control his evacuations. The back door has on the lower aspect a suitable handle which facilitates its introduction or removal from the outer frame. It is kept in position by four small clips which are attached to the outer frame. The surface of the back door next to the body is also padded thickly with animal wool, and this padding should be especially thick and firm at the site of the disease, so that due hyper-extension of the spine may be obtained. It will be found convenient to use tape in the fixing of the splint linen instead of ordinary thread, as with the tape the padding can be made more secure and much more durable. The patient is fixed on to this splint by means either of a jacket or by webbing. Webbing is simpler to apply and is better in warm weather, but the jacket is neat and gives the apparatus a more finished appearance when in use. If a jacket is employed it will be found most convenient to attach it to the outer frame on its inner side, and the jacket should be made in two pieces, each in duplicate, so that should it become soiled the soiled portion can be immediately removed and replaced. In any case it would be desirable to remove the jacket at intervals so that it may be cleaned—about once monthly is commonly sufficient. To facilitate the removal it will be found convenient to employ patent placket fasteners. By the use of these the jacket can be removed with the greatest ease and speed and be instantly replaced. The jacket should be strapped and laced over the front of the patient, as in the manner described previously. Should webbing be used in place of the jacket a piece of webbing should come over each shoulder. Two pieces should come round the trunk and all should be fixed to the inner side of the outer frame of the splint. They should be buckled appropriately on the front of the trunk. It will be found that by employing a splint of this nature the patient's back can be attended to without the patient being moved, and with the very greatest ease. The patient's shirt should open at the back, as in the illustration. (Fig. 2.) The patient can then have his back washed, powdered, and massaged at the necessary intervals, and soon is so little disturbed in the process that he does not even wake up when this is being undertaken by the nurse. Moreover, he is permanently immobilised in that position which has been decided upon as the best one for his requirements. There is no possibility of a mistake on the nurse's part in the readjustment of the child, and while he is turned his spine is still held rigidly in position by the outer frame. Once a day the jacket is unlaced or the webbing unbuckled and the child is washed without even being removed from the splint. In this way he may be kept for an indefinite period if desired without altering the contour of the spine. This description indicates the principles of the back-door splint, and I will now further describe its use for special conditions of the spine.

In cases of cervical caries either a simple bridle extension, as already described, may be employed or, better, the outer framework is prolonged on each side of the head and is terminated by an upright iron bar to which the bridle is attached by the elastic extension already described. The child is then turned as a whole when his back requires attention. It will be seen that this prevents any danger of injury in cervical caries and altogether prevents the possibility of those appalling disasters which have been reported when the transverse ligament of the atlas vertebra is affected.

In cases of dorsal and lumbar caries additional hyper-extension may be obtained in two ways: (1) either by mounting the outer frame of the splint on short legs; or (2) by suspending the outer frame. The latter method I shall describe first. Here, what we speak of as the swinging back-door splint is conveniently employed. The illustration appended will explain most graphically the nature of this splint. The idea of swinging a patient with dorsal

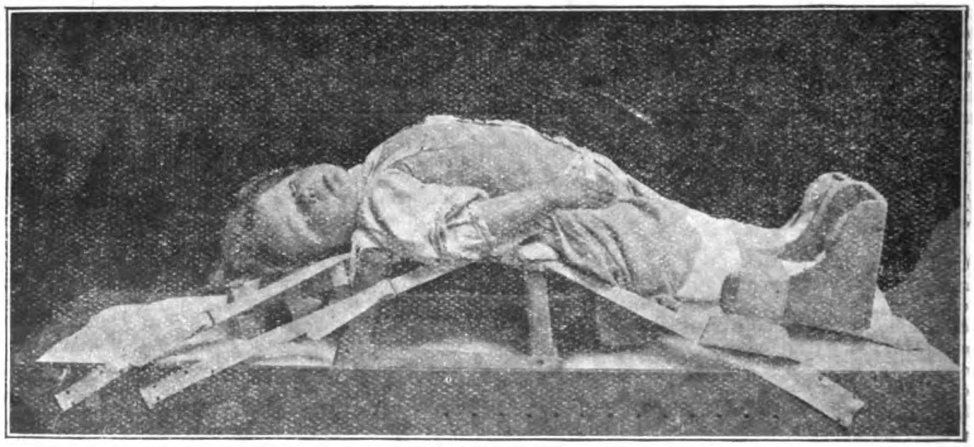
caries is by no means a new one and had been attempted long ago by Rauchfuss.[4] He, however, simply swung the patient in a canvas hammock, and this method had many drawbacks, inasmuch as the patient was not adequately immobilised, attention to the back could not be given easily, and there was some danger of lateral compression of the thorax. In the combination recommended here it will be seen that there is a rigid support for the back, the back can be easily reached and attended to without interfering with that rigid support, the patient is absolutely immobile, and the thorax is not compressed, nor is respiration or digestion in any way impeded. The proper hyper-extension is obtained, and the partial weight of the legs and head is of the utmost value in overcoming muscular spasm.

FIG. 3.



Swinging back-door splint. The head and legs here form a natural means of extension.

FIG. 4.



Wheelbarrow splint, especially indicated where there is spasm of the psoas muscles or psoas abscess.

When the disease is in the lower dorsal, dorso-lumbar, or lumbar regions, and when spasm of the psoas muscles occurs, it will be found perhaps desirable to immobilise the legs, and for this purpose the splint on legs, already alluded to, has been designed. This has been named the "wheelbarrow" splint. The illustration here given will best describe this splint. It will be seen that the outer frame of the back-door splint is supported on four legs, and that the legs themselves of the patient are fixed to back splints which are attached to the frame by a special hinge so designed that the legs cannot flex, can hyper-extend to any degree desired, can abduct or adduct (so that the bed-pan can be applied with ease and the child be attended to with comfort), cannot invert or evert. Extension may be applied to both legs with the greatest ease, and it is recommended that this extension be applied with the assistance of the special foot-splint figured, which is a modification of one used at Berck-sur-Mer. It will be seen that the extension strapping is attached to this foot-splint, and the weight comes on the foot-splint itself. With this contrivance perfect fixation can be secured with comfort to the patient. The head may either be supported by the pillow, which should be at a lower level than the splint, or by an extension of the splint upwards, and the latter is usually employed, as the head is then always at the same level and a constant pull by the weight of the head is ensured. Uncomfortable as it may seem, neither this nor the swinging back door-splint is objected to by the patient. Head extension can of course be applied by the aid of the bridle as before mentioned.

One small point may be here mentioned which does not seem to attract attention, but is worth consideration, especially in an institution where many spinal cases are under treatment. Spinal boards of any description whatever employed are commonly put on ordinary beds, and it will be noticed that this involves not only the bed necessary for the spinal board but also the mattress and accessories required for the bed. Further, the bed is invariably so low

[4] Ménard: Loc. cit.

that if many cases have to be treated undue strain is put on the nurse in tending the child by the constant stooping which the low position of the bed demands. To avoid this I have substituted for the bed commonly employed a special stand which is simple in construction and adapted specially for the requirements of the special cases here described. The stand can easily be constructed by any intelligent carpenter assisted by a blacksmith. Its legs are of ordinary gas-piping cut to a height of some three feet, and on these legs is mounted a wooden frame on which the board is placed. The board is then at a convenient height for the patient to be attended to without strain being put on the attendant, and is found convenient in every way from the nurse's standpoint. The patient's mattress is much more easily ventilated and the patient's comfort is thereby increased. A special covering made to fit the board is placed over the patient and board and makes it impossible for the clothes to fall from the patient. The greater height at which he is placed usually results in the patient being nearer an open window and increases the amount of fresh air he can receive. Dust and dirt can find no place under the stand and that is a consideration which is especially desirable to bear in mind in a private house. It will also be noticed that the amount of bedding and blankets required is much decreased, and this is of importance in the economical working of an institution both from the point of view of first cost, where the save in horsehair for mattresses and in bedding materials is thereby decreased, and also in cost of upkeep as the amount which is sent to the laundry is sensibly diminished.

FIG. 5.

Stand as used for reading and feeding.

Granted that there is no reason why the patient should be kept lying in the recumbent position, before he is allowed to assume the erect attitude the length of time he has been recumbent should be remembered, for it is obvious that if a patient has been in a horizontal position for a considerable period any change from that position to the vertical will be associated with alterations in the blood pressure, and if this alteration be not borne in mind consequences which may be somewhat alarming may ensue It is my practice never to allow a patient to be suddenly permitted to assume the erect attitude, and to permit this transition to take place conveniently he is commonly placed on the stand which is here figured and which may indeed, if desired, be employed throughout the whole treatment.

The essentials in this stand are that the patient at will may occupy any position, either horizontal or vertical, or at any intermediate angle. This alteration is very simply effected by merely turning a handle which governs a screw fitted into the cogs of a semicircular piece of brass which will be seen attached to the under-surface of the spinal board. The patient when tilted in this way should have, at any rate in the case of an adult or large child, additional support to that given by the jacket before described, for while this jacket alone will hold him firmly, yet without other assistance it may cause him undue and unnecessary discomfort. It will therefore be found desirable to have two pieces of webbing passing longitudinally down the board from the head end and let into the back of the spinal jacket on either side of the spine. These pieces are continued under the crutch and are there padded with a small pad of animal wool and covered with jaconet, and this pad is so adjusted that it will press on each of the tuber ischii. The webbing continued from the crutch passes over the front of the patient and is strapped to the board on each side at about the level of the nipple. This simple contrivance will effectually and comfortably support the patient even in the vertical position and will not in any way bring undue pressure to bear upon his spinal lesion provided he has in the first place been so placed on his board that the spine is sufficiently hyper-extended. In many cases it is permissible to allow the patient to rest on a seat, which can be suitably adjusted to the spinal board. This is permissible when there has been no spasm of the psoas muscle or when there have been no complications, such as gluteal abscesses. It will be at once seen that when the patient is in this position he has the great advantage of seeing surrounding objects with ease, and when a suitable book-rest is adjusted to the board he can read and feed himself with comfort in the natural position. Such a contrivance will be found of the very greatest service to these patients, who are so helpless and so debarred from simple pleasures and conveniences, and it will be of particular value in the case of children, who can thereby continue their education within reasonable limits without in any way complicating or interfering with the treatment which is being applied. It will be noted that this tilting stand is mounted on wheels and can easily be wheeled out of the ward or room into the open air, and in fact can be wheeled anywhere as easily as could a bath-chair, and the delight which this possibility of change of scene gives to the child is of value and assistance in the treatment. He can be conveniently and expeditiously removed out of doors and attended to throughout the day, and this in itself is, as will be readily seen, of the greatest value.

The great benefits which resulted from the alteration from the horizontal to a more or less vertical position suggested that where the patient was suffering from a sinus it would be an advantage to place the patient in that position where the sinus could be best drained, provided the essentials already indicated were maintained, and the stand illustrated may be obtained to satisfy this requirement. On it the patient can be fixed in any desired position, at any angle in any plane.

In this paper I discuss mechanical treatment during recumbency only. Mechanical treatment after the abandonment of the recumbent position will be discussed at another time.

Alton, Hants.

WORKMEN'S COMPENSATION ACT, 1906.—The Home Office has published a list of the names, addresses, and districts of certifying factory surgeons in England and Wales. The duties of the certifying surgeon have since 1907 been extended to industries outside the Factory Act by the provisions in the Workmen's Compensation Act with respect to compensation for industrial disease, under which a worker in those industries before he can claim compensation for disease has to obtain a certificate from the certifying surgeon; and this list has been prepared as a ready means of reference for workers and their representatives desiring to ascertain the name and address of the certifying surgeon to whom application must be made in any particular case. (Persons employed in factories or workshops can always ascertain the name and address of the certifying surgeon by reference to the abstract posted up in the works.) The list is published at 1s., and can be obtained, either directly or through any bookseller, from Messrs. Wyman and Sons, Limited, Fetter-lane, London, E.C. Similar lists for Scotland and Ireland will be published in due course.

# THE EDUCATION OF THE DEAF:

## ITS PRESENT STATE IN ENGLAND, WITH SUGGESTIONS AS TO ITS FUTURE MODIFICATIONS AND DEVELOPMENT.

BY MACLEOD YEARSLEY, F.R.C.S. ENG.,

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### II.[1]—THE CLASSIFICATION OF THE DEAF.

IN my first article I gave some account of the practice in different countries in regard to the classification of the deaf child for purposes of education, and I pointed out that, in two great nations at least, there was ample opportunity for evolving a system that should be as near perfection as it is possible to attain in the light of modern knowledge. These countries are the United States, where a series of experiments is being carried out on a large scale and practically regardless of expense, and England, and especially London, where the evolution of a system of classification may be said to be in an active stage. London, the metropolis of the world, the hub of our great Empire, has the right, if she will but use it, to take the leading part in this great work for humanity, and I am confident that, could her citizens but be brought to take an active interest in the subject, a properly organised system would shortly become an accomplished fact.

Among the beneficial results that must accrue from the working of school medical inspection should most certainly be included a practical and scientific classification of deaf children. This is to be expected because, with the increased interest in and wider knowledge of the physiology of education will come a better recognition of the vast, the paramount importance of perfect hearing to the scholar. The question of the teaching of the deaf will therefore appeal to a larger and more extended mass of educationalists instead of to the somewhat limited body more immediately interested hitherto. Further, the periodical assembling of international congresses on school hygiene must tend, in the near future it is to be hoped, to make any improved scheme of classification an international one, to be more universally adopted and to approach more nearly to perfection because of the more varied experience that can be brought to bear upon it.

The systems of classification at present in practice, and which I have already outlined, are by no means equal in merit. In some countries—as, for instance, in Denmark—the method in use is more liberal in conception, more practical in execution, than in others. In some, again, it is fettered by prejudice or cramped by the too narrow views of those by whom it was framed or with whom rests its application. That is why, in the United States, the achievement of great results is likely, because the system is there in an experimental stage, and there are no very hide-bound customs and prejudices to be overcome before the best arrangement can be evolved.

When it is considered how widely the methods of deaf education and the legislation concerning them vary in different parts of the world, it is not surprising that opinions as to the classification of the deaf child are equally variable, or that a very considerable literature has accumulated thereon. A study of this literature and of the opinions that it represents is alike interesting and disappointing. I have no intention to review these opinions, but I would point out that the subject has been often too much obscured by the bias of the writers, according as they are pure oralists or enamoured of various other methods, combined or otherwise. There can, however, be no doubt that the opposition to pure oralism is diminishing steadily as the latter becomes more and more improved by the experience of its advocates. One feature of the different schemes of classification stands out conspicuously to those whose prospect is not obscured by prejudice—they have been built upon too shallow a foundation, conceived from a too limited point of view. So far as my own knowledge goes, Kerr Love, of all writers upon deaf education, is the only one who has spoken from a broad standpoint and with an eye which commands an extensive horizon. He asserts[2] that "further progress in the education of the deaf-mute depends not on the study of methods of deaf education, but on a study of the deaf themselves, a study which will give a scientific classification, and which will enable existing methods to be applied with greater efficiency," and he has suggested that a better classification of the deaf would be into two groups:—"1. The subjects of 'surdism.' Those congenitally deaf or becoming deaf so early in life that no speech will develop apart from tuition. 2. The semi-deaf and semi-mute. The former have some speech in virtue of their power to distinguish the separate tones of the human voice; the latter may have no hearing at all, but speak in virtue of the hearing and speech present before deafness occurred.[3] It is generally assumed that the semi-deaf belong wholly to those having become deaf adventitiously. Most of them do so, but a few, as we shall see, belong to those *congenitally* deaf."[4] This author, in striving to obtain a rational and practical classification, has followed the only really right direction—viz., the direction of the *individual*, based not upon abstract ideas, but upon actual facts, facts that are staring us in the face, facts that we can glean only *from a study of the deaf child himself*. This is alone sufficient to place Kerr Love in the front rank of modern writers upon deaf education.

But this classification does not go far enough. The term "deaf-mute," as applied to the deaf child requiring special teaching, which is always cropping up in matters of deaf education, has been a great stumbling-block in classification. This has been accentuated by the entirely erroneous tendency among those ignorant of the deaf child to class him with the mentally defective and imbecile—a tendency recently exhibited in a remarkable manner by one who gave evidence before the Divorce Commission, in which the congenitally deaf were classified with lunatics, idiots, imbeciles, feeble-minded, sane and insane epileptics, and chronic inebriates! The education of the deaf is no narrow question which concerns only the deaf-mute, it is a far wider one which embraces, or should embrace, the teaching of all sorts and conditions of children who have, to any extent, however small or however great, lost the sense of hearing. Kerr Love has recognised this and substitutes the term "deaf child" for that of "deaf-mute," and I believe that, at no very distant date, educationalists and, after them, legislators will recognise this fact, and that the future education of the deaf will form a vast system which will comprehend the proper method of teaching the deaf from the very slightly deaf child to the blind and mentally defective deaf-mute. That any scientific classification of the deaf child for educational purposes will have to be thus widely inclusive must be patent to all who have given the matter proper consideration. Once this great fact has become recognised and admitted it will be but a short step to the introduction into every country of one universal and international system of deaf education.

As I pointed out in the concluding paragraphs of my first article, changes which have begun to take place in the education of the deaf show that it is becoming more and more recognised that not only the deaf-mute, or, as I prefer to call him, the very deaf child, requires special education to fit him for useful, self-supporting, and self-respecting citizenship, but also the scholar with a, comparatively speaking, much less degree of deafness. And this, it may be fairly and confidently asserted, is due to the awakening of educationalists, by the establishment of efficient school medical inspection, to a sense of the necessity of a study of the *physiological* aspects of education.

Upon what system, then, must a rational classification of deaf children for purposes of education be based? It should, as I have indicated, be made to include *every child who shows any sign of loss of hearing, be it ever so great or ever so small.*

The form of classification which, so far as my present opinion goes, would be best for adoption is a modification of that foreshadowed in my paper on Deafness in Relation to School Medical Inspection, written in 1908.[5] It is to some extent a modification of those advanced by Laubi[6] and Kerr

[1] Article I. was published in THE LANCET of Feb. 25th, 1911, p. 495.

[2] The Study of the Deaf Child, Glasgow, 1907, p. 4.

[3] If the occurrence of complete deafness in the adult can give rise to the results detailed in THE LANCET, Feb. 4th, 1911, p. 330, how much more readily and rapidly must the semi-mute child lose his power of speech.

[4] Loc. cit., p. 31.

[5] British Journal of Children's Diseases, November, 1903.

[6] Swiss Society of School Hygiene, 1903.

Love.[7] It necessitates the preliminary inspection of all school children in the first year of school life and a special examination by an experienced otologist of all those who are found wanting in this respect. By this means the deaf may be classified into three primary groups—the very deaf, the semi-deaf, and the slightly deaf. Not only would this inspection lead to a more efficient classification for education, but of the whole number of cases detected by this method some 50 per cent. could be cured, and of the remainder a good proportion would be capable of considerable improvement. It would thus serve a double end—efficient education and efficient treatment, at which all rational school medical inspection must aim, or it is futile.

One word here as regards efficient treatment. It is one thing to talk about it, another thing to obtain it. With the detection of early deafness by school medical inspection should come prompt treatment, but, however much school medical inspection may insist upon this, there are two obstacles at present in the way—the attitude of the parent and the attitude of the practitioner. Both want waking up, both want educating in the matter. The former is too often neglectful of the best interests both of himself and of his child. Life is hard and time is precious, but intact senses are of yet greater value, and the parent must have it brought home to him by argument and, if necessary, by legislation that he is not doing his duty to the child he was instrumental in bringing into the world unless he does the utmost in his power to preserve not only his general health but that of his special senses. It is largely the general practitioner's duty to bring the parent to a proper sense of his obligations, for he is the expert with whom the father or mother comes most in contact; but, as I tried to point out in my paper on the duty of the practitioner to the deaf child,[8] not infrequently the practitioner requires educating also, and in some cases not merely the general practitioner but the specialist as well. Were the general practitioner and the specialist more alive to this fact and the parent more amenable, there would be a far less number of deaf people in the world.

Between the three groups of deaf children obtained by the method suggested above there is no absolute line of demarcation. In the very deaf class must be included the normal and defective (blind and mentally deficient) deaf-mute and those with residual hearing (vowel hearing or for very loud speech close to). The semi-deaf should comprise those who are possessed of a greater degree of residual hearing, sufficient to give them a certain amount of residual or natural speech—the "semi-mute." The slightly deaf may be divided further into two groups of "very slightly deaf" and "hard of hearing." The educational methods necessary for the efficient teaching of the three primary divisions range from the various deaf schools to the ordinary hearing classes of the elementary school. Bezold considered that school work is possible when the scholar can hear loud speech at two metres, as the teacher can generally manage to place himself at that distance from him; those deaf children whose minimal distance is less than half a metre he thought could be taught if the teacher can pay him special attention. With this opinion, however, I cannot wholly agree. In large classes it is impossible for the teacher to pay much individual attention to a child who can only hear loud speech at less than half a metre, and one whose distance for the same vocal effort is two metres must, even when placed in the front desks, lose a large part of the instruction offered. Our aim is to obtain for the deaf child the best education possible, and, even if he is a good lip-reader, a child with the defect just described cannot fulfil this end. The scholar has to receive instruction whilst he is bending over his exercise or reading his book, and he must not lose the thread of an explanation given by the teacher who has his back to him whilst writing on the blackboard or explaining a diagram. Hence the test that must form the basis of classification in the slightly deaf class of child is what is known as the forced whisper. For practical purposes of efficient teaching slightly deaf children should be subdivided by this means into the very slightly deaf who can hear the forced whisper at three feet or over, and the hard of hearing whose acuity is less than that distance. And into this test the mental quickness of the individual scholar must also enter. Indeed, in every classification two factors—degree of hearing and mentality—must be taken into consideration. The very slightly deaf (whisper three feet or more) can very well be taught in an ordinary hearing class, the worst specimens, from either the hearing or mental point of view, being kept in the front row. The hard-of-hearing child (whisper less than three feet) requires more than this; he should receive a part of his curriculum in the front row of a hearing class, whilst he also receives instruction in lip-reading in a special "hard-of-hearing" class where attention can also be paid to his speech and any existing defect of which can there be remedied. He could be returned permanently to his ordinary hearing classes when he is fit to do so in the opinion of his teacher and the medical officer. These hard-of-hearing classes could be held upon specified days of the week and should be in charge of a visiting teacher who is a certificated teacher of the deaf. Such classes ought not to contain more than 15 scholars on the roll at the utmost. Probably, too, there would have to be two classes, one for pupils between the ages of 5 and 10, the other for older children; the experience at the hard-of-hearing experimental class recently instituted by the London County Council seems to indicate this. It is important that these classes should be held in hearing schools in order that the scholars should not be permitted to mix with the very deaf children of the special schools.

The semi-deaf class comprises those who cannot hear the forced whisper and whose hearing for spoken speech is four feet or less,[9] a comparatively considerable amount of residual hearing when contrasted with the deaf-mute. It is obvious that the range of hearing in these cases will be wide and that the factor of individual mentality will be of even greater importance than in the slightly deaf class. Hence these children will naturally fall into two groups—the better cases and the worse cases. The former, scholars of good mentality, fair residual hearing, and natural or residual speech,[10] would be best educated as permanent units in special classes under teachers of the deaf. It is to these classes that the present experimental hard-of-hearing class, already mentioned, is more nearly approached. These classes should also be held away from a deaf centre to prevent the children attending them from mixing with the very deaf either at work or at play. The very deaf and the totally deaf differ markedly in their method of thought from their more fortunate fellows, and the semi-deaf should, therefore, be made to mix with normal companions whenever it is possible. Moreover, the deaf child is ever ready to pick up the bad habit of signing, even when his hearing defect is of a less degree, and such habits are difficult to eradicate. The child possesses the faculty of imitation even more than does the man, and consequently exercises it whenever he gets the chance. It is thus that stuttering may arise, and one signer in an oral class of deaf children will readily find willing imitators.

The worse cases, with more marked degrees of deafness of doubtful mentality, or with defects of speech ("semi, mute"), are on the borderland beween the better cases of the semi-deaf and the very deaf. They would probably be taught more advantageously in special classes in a deaf school under the oral system, *the study of each individual child being of paramount importance.* Here comes in the great question of day schools *versus* residential schools, a question upon which opinions have been much divided. In this matter, as in most others, the extremist is wrong; what is required is to take a middle course. Where there is no deaf day school near at hand, as in the country districts, it is better for the deaf child to go to a resident institution than not go to school at all. Resident institutions have their uses, and for those deaf children who are defective they are no doubt excellent. But whenever it is possible for a normal deaf child to remain with his parents (provided they are worthy to have him in their care) that is the best environment for him to be in. When this is not possible he should be boarded out with a good foster-mother. Residence in an institution means less opportunity for the deaf child to mix

[7] Transactions of the Second International Congress on School Hygiene, London, 1907, vol. ii., p. 828.

[8] THE LANCET, Sept. 10th, 1910, p. 781.

[9] I must here remark that the distances proposed in this article must not be taken as final; further experience, and especially that gained by the working of this or an analogous system, will be certain to modify them.

[10] This natural or residual speech would, without special training, deteriorate.

with the hearing environment, which is so important a factor in the success of the oral system. Another point in this question is, again, the necessity for studying the deaf child as an individual; the defective deaf are certainly more fit for residential institutions.[11]

With the worse cases of the semi-deaf, like those of the totally deaf, no modification of ordinary hearing school methods is of the slightest use: they must be educated in a special day school or residential institution. Under present conditions the worse cases of the semi-deaf must be taught, as, indeed, they are, with the totally deaf. It is quite likely that it may be found possible later to classify both classes and rearrange the educational methods applied to them to better advantage. If the totally deaf and the worse cases of the semi-deaf fail under the oral method they must not be allowed to influence the oral successes, but must be transferred to a school where the manual or combined systems are taught. Every oral failure is a source of danger to the oral successes, and the sooner this is recognised in deaf schools the better. The oral failure uses signs, and for this reason contaminates the oral success. This matter I have already touched upon in my first article. That is why I am strongly opposed to the institution of a "duffers" class in a normal deaf school. If it is proved that a child, after thorough and careful trial, will never attain to speech, he should be transferred as soon as the fact is recognised beyond a reasonable doubt to a school where systems other than oral are practised. The late Mr. van Praagh, whose experience was very great, once stated that every deaf child, provided that he was not mentally defective or imbecile, could be taught by the oral system, and no doubt this is true provided all obstacles to success are eliminated. It is with a view to the recognition and elimination of these obstacles that the system of classification, which may at first sight appear somewhat elaborate, here suggested has been framed.

A careful study of the mental capacities of the totally deaf and of the worse cases of the semi-deaf is highly important, and those whose defects are pronounced cannot, I think, be properly taught in a day school. In dealing with borderland cases one has to take into account the mental attainments of every child and endeavour to classify him for educational purposes, so that his teacher may get the best out of him. This is by no means an easy thing to do, and it would probably be made easier if the child were got to school at an earlier age. The slightly dull child who may be left hopelessly behind in a class of deaf scholars of normal mentality may appear quite bright in one of the mentally defective deaf because he is *unioculus inter cæcos*, and he is not receiving his full educational rights if he is placed in either class. The mentally defective deaf should be placed in a residential institution, to be got at by methods adapted to each individual case by teachers of proved experience. This is one of the real uses of a resident institution. At the same institution the dull or backward child, the one just referred to as on the borderland, might attend special classes as a day scholar. There are some such children who would so benefit by such a class that they might later be saved to the oral method and be allowed to return to the normal deaf school.

Normal semi-deaf or totally deaf children are better in day schools provided their parents feel their responsibilities sufficiently to help in their education at home, and this home education, in the hands of good parents who loyally help the teacher and the doctor, is of very great value. Where the parents are neglectful and unmindful of their duties, or alcoholic, or responsible for bad school attendance, and where the home surroundings are morally bad, then the child should, for his own sake and for the sake of his future as a citizen (for the State should come, without compromise, before the parent in such cases), be taken from the parents and either placed in a residential institution or, preferably, boarded out with a good foster-mother. I do not write thus without good reason. I have met with cases in which the scholar's whole future, educationally and morally, was being blighted by the unwholesome effects of bad home surroundings and alcoholic or immoral parents. I have seen children making good progress taken away hopping or fruit-picking, or used for purposes of begging, and returned at long intervals to school with all the knowledge they had so laboriously acquired forgotten and wiped out. I have seen children kept from school because the only clothes they had to wear had been taken away and pawned by the parent for drink. The difficulties which lie in the way of the educational authorities in such cases are great, and will remain so as long as the great fetich of the "liberty of the subject" is worshipped, forgetful that liberty really means, as Burke once put it, "equal restraint for all." The machinery that should correct such abuses moves so slowly, and there are so many loopholes for the wrong-doers, that much valuable time is lost before such cases can be remedied, but a very great deal could be achieved if the Children Act were adequately amended and adequately administered.

At the outset of the deaf child's education the parents should be interviewed, and an endeavour made to impress upon them the necessity for regular school attendance and home educational help; they should be enjoined to coöperate with the child's teachers in giving the oral system every possible chance, and should be warned against allowing home influences to degenerate into the substitution of signs for lip language. Here I may point out that good school attendance means, *for the deaf*, as constant and regular attendance as possible. This is of far greater importance for the deaf than for the hearing child. A loss of one schoolday a week means far more for the former than it does for the latter, for the deaf child under present conditions seems to forget what he has learned more quickly than does the hearing child, probably because his command of language, for want of continuous education through the ear, is much more limited.

The defective deaf (blind and mentally deficient) require very special instruction under highly experienced teachers, such as they obtain in our London County Council Centre at Homerton. The blind need to be taught the Braille method as well as special manual systems of communication, whilst the methods upon which the mentally deficient require to be trained are such as those so well outlined by Mr. F. G. Barnes in his paper read before the Third International Congress on School Hygiene, held in Paris in 1910. A school or institution for the defective deaf must be kept for such cases alone it should not have its classes taken up by the imbecile deaf; such cases contaminate the scholars who are capable of education and take up too great a share of the teacher's time, to no purpose whatsoever.

The system of classification here advocated, and which endeavours to give to the individual child the highest form of education to which he is entitled, may be tabulated as follows:—

| Class of deafness. | | Educational treatment. |
|---|---|---|
| A. Slightly deaf... | Very slightly deaf ... | Hearing school, preferably front row. |
| | Hard of hearing... ... | Hearing school and special classes under visiting teachers of the deaf. |
| B. Semi-deaf ... | Better cases... ... ... | Special classes under teachers of the deaf in hearing school. |
| | Worse cases... ... ... | Special classes in deaf day school. |
| C. Very deaf (deaf-mute) ... | Oral successes ... ... | Special deaf day school or residential school (better boarded out). |
| | Oral failures ... ... | Separate classes of manual or combined system in residential school. |
| Defective deaf ... ... ... ... ... ... ... | | Special individual systems in residential schools. |

In a recent paper written for the Third International Congress on School Hygiene [12] I advocated the commencement of the education of the very deaf at a much earlier age than is at present the case in most countries. My reasons for doing so will be given in detail in the third of these articles, and I am strongly of the opinion that the period of instruction should be made to embrace the life of the very deaf child from 3 to 18 years. I mention this here because I consider that this extended period is a natural and necessary corollary to any system of classification of the deaf for educational purposes. There are very strong physiological reasons why the earlier age is advantageous, and these will be stated later. There are equally strong reasons why

[11] It would be better if they were kept in them permanently.

[12] At What Age should the Education of the Deaf Child Commence? British Journal of Children's Diseases, October, 1910.

control should be maintained until a later age than is at present considered necessary by legislators. To give only two of these: it must be insisted that the deaf child is entitled, and justly, to as much advanced education and to as advanced teachers as possible. We have not yet arrived at the time when every precaution is taken to diminish, by negative and positive eugenics, the number of the congenitally deaf, nor have we reached perfection in the prevention of acquired deafness in children. When so ideal a state of affairs has been accomplished we shall not have so many deaf to educate, but until then we have this great problem of the deaf child to face, and it must be faced squarely and the very best done for them that can be devised—for their sake, for the sake of the State, and for the sake of humanity.

Secondly, under the shorter period, the scholar is removed from the teacher's influence just at the time when that influence is most felt, most required, and most likely to make a lasting impression. The first two years of instruction, from three to five years, should be passed in a preparatory class, where the child's capacity, his mentality, and his chance as an oral success or failure could be ascertained by experienced teachers. Teachers of the highest experience and capacity are most needed for this part of his training. Much precious time could be saved by this arrangement, and each child could be drafted at the age of five years into an elementary deaf school in a better state of fitness for his curriculum.

It will be remembered that in the first of these articles I postulated certain conditions that I considered to be needful for the ultimate improvement of deaf education. The first of these is that discussed in the present paper, the third and fourth may be reasonably noticed now. The need of greater care of the deaf child whilst at school, by care committees and similar means, whereby it can be assured that his attendance at school is regular, his meals are adequate, that he is not neglected or exploited by his parents, and that he is removed from the influence of bad companions and bad home surroundings, is a consideration which hardly requires discussion. Parts of it have already been touched upon, and all I need add is that legislation is urgently needed to ensure greater control over the deaf child, and more people are wanted to take an interest in him. There seems a curious ack of sympathy with the deaf, especially when it is compared with the quantity lavished upon that much happier class of the physically defective—the blind. It seems so difficult to make people understand the position of the deaf child, that he is neither imbecile nor mentally deficient, but simply a normal child deprived of that sense which might be, of all his senses, of the greatest educational value to him. It does not take long to discover from contact with deaf children what a charming and loveable class they are, and I would appeal to the charitable to take up their cause with more vigour than has yet been the case.

The fourth need postulated was the encouragement of the deaf child to mix with hearing people. This would be greatly helped by an extension of the later educational course. The last two or three years, from 15 or 16 to 18, would be occupied in an advanced school where special training would be given in some trade or occupation and where moral training suitable to the more advanced age of the pupil would be made a feature. Possibly it might even be better if the advanced school life should be, as at present, from 14 to 16, scholars from 16 to 18 passing to a college for the deaf, where they could obtain a course of training which should be a modification of the ordinary university life.[13] This could, however, be settled when the extension of the educational age had been secured by legislation. This system, or a modification of this system, is already in vogue in some parts of the United States, where it appears to have been eminently successful.

I feel sure that by some such arrangement as is here advocated the very deaf child would leave his educational courses better equipped intellectually, usefully, and morally than can possibly be the case under present methods. The aim of all education is to fit the child, in the best possible manner, for self-reliant, self-supporting citizenship, and if this is so for the scholar who is fully equipped as regards his senses, it holds good equally for the normal deaf child. I believe that the whole secret of deaf education is to give to the young deaf child that physiological training that his defect has denied to him and whereby he is, at seven years, like a normal child of two in mentality, and to keep him longer at school in order to give him as advanced an education as is possible to equip him for his career in the world in order to remove, or at least to obviate, the handicap which nature has imposed upon him.

In conclusion, I wish to touch upon a matter which is of a very delicate nature, alluded to in the concluding words of the fourth postulate in the first article, "a more careful supervision of religious missions to the deaf." Nothing is farther from my mind than to make any charge of neglect, or to write anything that can reflect in the least degree upon or wound the feelings of any person or persons connected with any particular mission, all of which are conducted by high-minded, disinterested, and, in many cases, self-sacrificing men, actuated solely by the unselfish wish of benefiting the deaf community and ameliorating the conditions under which they live. But these worthy people are too apt to lose sight of other and important considerations in their ardour for their religion. The question is a delicate one and requires careful and tactful handling. The free signing which goes on amongst the deaf-mutes who attend these missions cannot be controlled and those in authority are powerless to prevent it. If any teachers of the deaf read these articles they will fully understand to what I allude, and may, possibly, be prevailed upon to give their own experiences of this matter. The remedy lies, of course, in the better education of the deaf, and the universal encouragement of the oral system among the deaf and the discouragement by missioners of its abandonment after leaving school. Until then, however, I would earnestly advocate that it should be the future care of these missions to regulate their meetings with a view to greater restraint. They should hold different sittings for different sexes (especially when lantern lectures are given), and, an item of equal importance, they should hold different meetings for the old and for the young.

*(To be concluded.)*

[13] If education commenced at three, instead of at seven, a further modification of what is here advocated would be possible, for, as will be seen in the third article, the effect upon speech and language teaching would be such that the scholars would be much more advanced than they are at the present time. There are, moreover, reasons for believing that a university course in an ordinary hearing college would be more acceptable and more advantageous than the foundation of a deaf university. The Gallaudet University in the United States is a great success, but the alternative would be better calculated to encourage the mixing of the deaf and the hearing.

## A CASE OF SUPRARENAL APOPLEXY.

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FOR the clinical details of the following case I am indebted to the house physician, Dr. Norman W. Steinberg.

A male child, aged 8 months, was admitted into the Royal United Hospital under the care of Dr. E. J. Cave on Oct. 30th, 1910, with the history, obtained from the parents, that throughout the morning the child had been very drowsy and had "looked strange," but that he had not seemed to be in pain, had taken nourishment readily, and that the bowels had acted as usual. About 3 o'clock in the afternoon he vomited, and as the baby appeared to be getting worse he was brought to the hospital. Previously the child had always seemed perfectly healthy. He had been breast-fed until three weeks before admission, when a mixture of cow's milk and water was substituted. On account of the parents' conscientious objection the child had never been vaccinated. The mother had had one other child, who died at the age of two years from pneumonia after an illness lasting ten days, and two miscarriages.

On admission the infant was obviously very ill: complexion grey, eyes dull, breathing rapid, shallow, and noiseless; temperature 100·4° F., pulse 140, and respirations 72. Râles could be heard all over the chest, especially at the bases behind. The abdomen was soft and not tender. There were no signs of meningitis, and nothing abnormal was to be seen in the mouth or fauces. Two hours after admission an extensive eruption of purple spots and blotches appeared over the whole trunk, upper arms, and thighs. The temperature had fallen to 99·4°. The child rapidly grew worse,

the face becoming cyanosed, and death occurred at 7.30 P.M., four hours after admission. There were no convulsions throughout.

*Necropsy.*—The post-mortem examination was made 22 hours later. The body was that of a well-formed, well-nourished infant. It bore no vaccination marks. On the trunk, front and back, and on the limbs down to the elbows and knees, was visible the blotchy purpuric eruption mentioned. The larger patches were dull red rather than purple, and appeared to be somewhat raised. A few small spots were to be observed on the neck and on the face in front of the ears.

The lungs were congested and œdematous. The heart appeared healthy except that on the auricular surface of the mitral and tricuspid valves, close to the free margin, were a few very tiny beady elevations. There were no subpleural or subepicardial petechiæ. The liver was pale; the spleen and kidneys normal. The intestines were pale and collapsed; the mesenteric glands not enlarged. The suprarenal capsules were striking objects, even before their removal from the body; of little more than normal size for a child of this age, they were both of a deep purple colour and evidently the seat of hæmorrhage. The extravasation of blood had taken place into both the cortical and medullary portions, but no bleeding had occurred into the adjacent tissues. Microscopically the structure of the medulla was seen to be completely destroyed and replaced by effused blood. The arrangement of the columns of cells in the cortex could be made out, but the cells themselves had largely disappeared, their nuclei alone remaining, whilst everywhere were to be seen large numbers of red blood corpuscles. All the other organs appeared natural. The spinal cord was not examined.

Cultures taken from the adrenals, from the spleen, and from the cerebro-spinal fluid all proved sterile. No micro-organisms could be detected in films made from the cerebro-spinal fluid and from the interior of the suprarenal capsules. Sections of the suprarenal capsules were stained by Levaditi's method for spirochætæ with a negative result.

*Remarks.*—Whilst it is not very uncommon to meet with hæmorrhage into the adrenals of stillborn children or of infants dying shortly after birth, and whilst bleeding into these bodies may, rarely, take place in conditions of great venous congestion, it is, with these exceptions, an occurrence which, to judge from the number recorded, is one of considerable rarity.

The case related above appears to form one of a distinct group, examples of which have been described by Voelcker,[1] Still,[2] Garrod and Drysdale,[3] Batten,[4] Andrewes,[5] Talbot,[6] Blaker and Bailey,[7] Graham Little,[8] Langmead,[9] and Dudgeon.[10] Omitting the case of Still, in which miliary tuberculosis also was found at the necropsy, and that of Batten, in which hæmorrhage occurred into one suprarenal capsule only in a boy, aged 2½ years, there remain, including that just described, 15 cases, all infants between the ages of 2 and 15 months, and all of whom died after an illness lasting in the majority less than 24, and in none more than about 48 hours. In all but three a hæmorrhagic rash of greater or less extent was present. Vomiting occurred in 6, diarrhœa in 1, convulsions in 5, and symptoms suggestive of abdominal pain in 3. In several cases signs of bronchitis were present. The temperature—in most between 100° and 103°—in Voelcker's case was 105°, and in one of Graham Little's reached 108° before death. Apart from the lesions of the adrenals and the hæmorrhagic rash, the most constant post-mortem findings have been intense engorgement of the lungs. Blaker and Bailey lay emphasis on hyperæmic swelling of Peyer's patches and of the mesenteric glands, resembling that found in the early stages of enteric fever. Cultures from various organs have in most cases proved negative, but in one of Talbot's a streptococcus was obtained by Drysdale from the suprarenal capsule after death.

The suggestion was made, both by Voelcker and by Andrewes, that theirs were cases of rapidly fatal hæmorrhagic small-pox, and the fact that of these 15 cases only one had been vaccinated, whilst 11 were unvaccinated (the history of the other three in this respect being imperfect), seems to suggest either that there is some relationship between this disease and variola, or that the extent to which vaccination is performed in the country which gave it origin is lamentably insufficient. Since none of these cases seem to have occurred during, or to have been followed by, an epidemic of small-pox, the latter appears the more likely.

Bath.

1 Pathological Reports of the Middlesex Hospital, 1894-5.
2 Transactions of the Pathological Society, 1898.
3 Ibid. 4 Ibid. 5 Ibid.
6 St. Bartholomew's Hospital Reports, 1900.
7 Brit. Med. Jour., 1901.
8 British Journal of Dermatology, 1901.
9 THE LANCET, May 28th, 1904, p. 1496.
10 American Journal of the Medical Sciences, 1904.

# CRANIAL ASYMMETRY DUE TO POSTURAL CAUSES.

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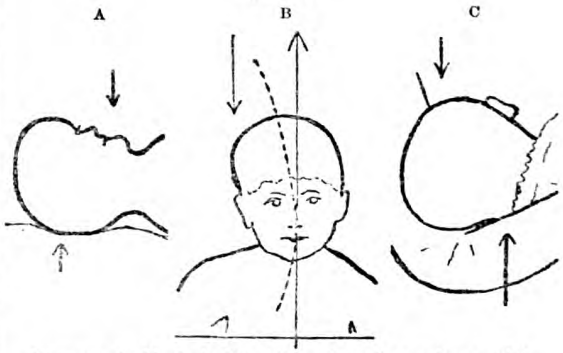
FEW, if any, of us attain to the perfection of bi-lateral symmetry; consequently, in common with the rest of the frame, the two halves of the calvarium are rarely exactly alike—a fact which is of importance only on the occasion of a visit to one's hatter.

The causes of *abnormal* distortion may have been forces acting upon the bones from within or from without, and the earlier in life that they have been brought to bear the greater is their effect, owing to the yielding nature of the young bones. In infancy, too, the attention is drawn most forcibly to cranial asymmetries, for any irregularity in the roof is naturally more obvious when the thatch is thin. Many interesting abnormalities have pre-natal origin, or are due to traumatism in parturition; others arise from cranial or intra-cranial disease. In this short note, however, I am only dealing with posture as a cause of deformity, and more particularly with one characteristic variety.

The effect of posture is, of course, the application of the law of gravitation. Now the position of the normal baby is so frequently varied that gravitation, if it have *any* effect in moulding the cranium, acts symmetrically in the production of a normal skull. When the baby, or the circumstances surrounding it, are not normal, the action of gravity produces variations. A rachitic child, for instance, being soft of bone and inactive muscularly, lies much on its back, and the calvarium is consequently pushed forwards—or rather "upwards," as the child lies. This is one of the factors concerned in the production of the well-known frontal prominence of the rickety head. To be strictly accurate, it is the face and base of the skull which, acted on by gravity, are pulled downwards (backwards) away from the calvarium, which, supported by the occiput, lies on the pillow and can descend no further (Fig. 1 A).

FIG. 1.



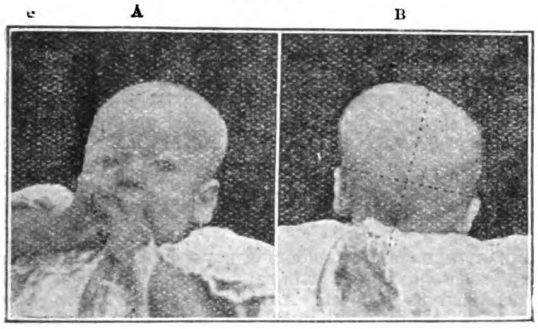

Diagrams to illustrate the action of gravity causing cranial asymmetry in A, rickets, B, torticollis, C, an infant nursed at one breast only.

In cases of so-called congenital torticollis, which are probably due to injuries of the sterno-mastoid and adjacent muscles at birth, a marked facial and cranial asymmetry is seen. The face is said not to develop fully on account of pressure on the carotid artery. This may be so; but if a sheet of paper be held in front of the face dividing it vertically into two halves, it will be seen that not only is the affected side smaller, but there is also a projection of the skull-cap and chin towards the same side; a central line drawn down the face will thus be curved with the convexity

away from the contracted muscles (Fig. 1 B, the outline of which is traced from a professional portrait). This, I think, may also be the effect of gravity, acting partly as in the first instance (the child lies more comfortably on the healthy side), in part directly, when the infant is held in the sitting position, and sometimes as will be mentioned shortly.

But by far the most marked examples of cranial obliquity occur as the result of nursing the infant at one breast only. The lop-sided head which ensues is not so generally known as I should have expected. Two patients shown recently at the Liverpool Medical Institution exemplified the deformity well. Both are boys—one aged 5 months, the other 7 months. In one case the mother's left nipple is so depressed that suckling with that breast is impossible; in the other the right breast has never secreted milk. The heads of the two children exhibit a similar deviation (Fig. 2 A); in the case of

FIG. 2.




Reproduction of photographs of infant nursed at right breast only.

the infant nursed at the right breast to the left, in the other to the right. In these cases it is the weight of the brain which pulls the head out of shape (Fig. 1 C). As this weight lies chiefly posteriorly, and also as the arch of the calvarium has firmer support in the frontal region, the greater deformity is at the back of the head, and it is best seen in that aspect (Fig. 2 B).

The commonest reason for suckling an infant at one breast only is an abscess in the other, and one may often astonish an unobservant mother by diagnosing that affection from the appearance of her baby's head. But one must not be too sure. In one case in which I was consulted there had been nothing wrong with the breast, but the child having a slight degree of torticollis found a difficulty in getting his head round to the corresponding breast; so the fault was in the child and not the mother. Consequently, whether the alteration in the position of the head engendered by "congenital" torticollis can of itself give rise to a postural asymmetry or not, it certainly may do so secondarily in the manner described.

In the patient whose photographs are reproduced there is a sort of vicious circle temporarily established at present. The child is beginning to sit up unsupported; the additional weight in the left half of the head causes it to drop over to that side, thus perpetuating the state of affairs which led to this extra weight. With increasing strength this droop will be overcome. It is not shown in the photographs, in which the head is invisibly supported.

I imagine most of these heads straighten themselves when suckling is over. One of the mothers brought me a daughter, aged 6 years, whose head was similarly affected in infancy, and, so far as an examination through the shock of hair she possesses can determine, there is no evidence of the condition left now.

For treatment I think it is well to instruct the mother or nurse to counterbalance the too frequent posture of nursing on one arm by carrying the child an equal length of time per diem on the other. As the baby generally sleeps after being fed, this involves trouble, and the direction is rarely followed out. In addition, the mother should be told to be particularly careful while nursing to support that part of the head which sags, rather than to make the carrying point the usual one of the neck and base of the skull. But I have seldom seen much improvement until weaning has taken place.

Liverpool.

# A CASE OF RODENT ULCER OF THE THIGH.

BY HERBERT E. FRIEND, M.R.C.S. ENG., L.R.C.P. LOND.,
AND
T. CRISP ENGLISH, M.B., B.S. LOND., F.R.C.S. ENG.

RODENT ulcer rarely affects any part other than the face and scalp. Mr. A. A. Bowlby recorded a series of 66 cases of rodent ulcer, all of which affected the face and scalp, except two which occurred on the nape of the neck and on the back respectively. The following instance in which a rodent ulcer occurred on the skin of the thigh is therefore of great rarity, if not unique.

The patient was a widow aged 68 years. She first noticed a nodule on the outer aspect of the thigh at the junction of its upper and middle thirds in 1874; this nodule was painless and caused no discomfort, but from time to time it broke through the surface and then healed again. It remained in this condition until 1896, when the patient sustained a fracture of the right femur below the surgical neck; the splint, though well padded, caused irritation of the nodule, and a sore of about the size of a pea resulted. During the following years the sore slowly increased in size, and when seen in 1905 was of about the size of a sixpenny-piece. Removal was advised, but the patient would not consent to this. In 1907 the ulcer was again seen, and removal was again advised; the patient was still unwilling to have this done, and as the surface of the ulcer was unhealthy it was cleaned with applications of peroxide of hydrogen; now for the first time the edges appeared raised and thickened.

In September, 1909, examination of the ulcer showed that it had increased to the size of a crown-piece; it was somewhat irregular in outline and moderately painful, its edges were rolled over and indurated, and there was an island of cicatricial tissue near its centre; there was no enlargement of the lymphatic glands. The patient was willing to have the application of X rays, and these were used once by Mr. Cecil Lyster; but when it was pointed out to her that the use of this treatment would have to be extended over a long period, and that the growth was now in an active state, she at last consented to its being excised. This operation was performed on Oct. 8th, the anæsthetic being administered by Dr. F. W. Cock. The growth was freely removed by elliptical incisions which were carried down through the deep fascia. The wound healed well. The ulcer and the surrounding tissues were examined microscopically by Dr. R. Salusbury Trevor, pathologist to St. George's Hospital, who reported that the appearances were typical of rodent ulcer.

The scar remained sound until October of last year, when the patient noticed a little thickening near its lower end. This thickening slowly increased, and when seen by us in November was a small flat-topped nodule lying just beyond the lower end of the scar, obviously a "recurrence" of the growth. This nodule and a large area of the surrounding skin were excised on Nov. 25th.

The following authorities have recorded cases of rodent ulcer which have been observed in places other than the face and scalp: H. Betham Robinson reported one occurring over the male breast [1]; A. A. Bowlby, an enormous ulcer on the back in addition to five on the face and one on the nape of the neck [2]; J. Hutchinson, jun., a case in which there was one on the forearm and one in the groin [3]; T. S. Pigg, a case in which there was one in each groin [4]; H. D. Rolleston, an ulcer near the umbilicus [5]; Radcliffe Crocker mentioned one just above the sacrum and one in the groin [6]; and Colcott Fox describes an ulcer over the sternum.

Examples of rodent ulcer on the trunk are not very uncommon. Mr. G. Lenthal Cheatle, in a paper on the Incidence of Cancer,[7] records 17 cases which he had been able to collect. These cases are illustrated by reproductions of the original photographs and drawings, and the ulcers occurred in the following positions: back of shoulder

[1] Transactions of the Pathological Society, vol. xliv., p. 147.
[2] Ibid., vol. xlv., p. 159.
[3] Ibid., vol. xlviii., p. 224.
[4] Ibid., vol. xl., p. 300.
[5] Ibid.
[6] Diseases of the Skin.
[7] Brit. Med. Jour., April 29th, 1905.

(J. H. Sequeira); back of shoulder (Sir J. Hutchinson); back near mid-line (A. Reid); scapular region (Sir J. Hutchinson); scapular region (A. Reid); lumbar region (Sir Victor Horsley); abdominal wall (Sir Victor Horsley); over spine (W. A. Pusey); coccygeal region (Norman Walker); sternal region (Dr. Mill); axilla (McAdam Eccles); anterior scapular region (Sir J. Hutchinson); mammary region (Dr. Jacobs); front of chest (J. H. Sequeira); abdomen (Sir J. Hutchinson); and groin (Royal College of Surgeons of England Museum).

Mr. Cheatle tells us that since the publication of this paper he has come across four other instances of rodent ulcers occurring on the back in the areas supplied by the internal divisions of the posterior branches of the dorsal nerves.

The list of cases which has been given could be added to considerably, but it will serve to indicate the distribution of those ulcers which do not occur in the usual situations.

## NOTES ON A CASE OF RETENTION OF URINE.

BY GEORGE W. BURY, M.B., CH.B. VICT.,
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I REPORT the following case on account of (1) the extremely large quantity of urine retained in the bladder without rupture; and (2) the rapid recovery of vesical tonus after such an enormous distension.

The patient, a married woman, aged 37, was admitted to hospital with the following history. She had apparently been quite well until 14 days previous to admission, when she complained of severe dragging pains in the lower part of the abdomen, accompanied by nausea and vomiting. She noticed also that she had some difficulty of micturition, but passed a normal quantity of urine. She recovered in 24 hours and was able to do housework. Eleven days later the pain recurred and was very severe, and she had great difficulty in passing urine, and then only a very small quantity. She also noticed that the abdomen was getting larger and on this account called in a medical man, who ordered her to hospital.

Upon admission to hospital the patient was in a comatose condition; pupils contracted, equal, and reacted to light. She moved slightly on being spoken to loudly, but did not understand, and was very irritable on being moved. Breath very offensive; skin cold and clammy; pulse feeble and thready, rate 138; temperature subnormal; respirations shallow and sighing.

Upon inspection of the abdomen a large tumour was seen completely filling the hypogastric and umbilical areas, being rather more prominent on the right side. The limits of the tumour were well defined and it was arising from the pelvis. On palpation the tumour was quite hard. The upper level lay midway between the umbilicus and sternum, 1½ inches to the right of the middle line; the tumour was slightly moveable, but no fluid thrill obtained. The tumour was dull to percussion; the flanks of the abdomen and the side of the pelvis were quite resonant. Vaginal examination revealed a lax vagina from old ruptured perineum not repaired. The arch of the pelvis was distinctly felt, no bladder seeming to intervene. Just within the reach of the finger was a mass pressing anteriorly which felt like a soft cervix, but difficult to make out with certainty. The vaginal vault was capacious, and occupying the pouch of Douglas was a hard mass with definite limits and probably connected with the uterus. Per rectum, about two inches from the sphincter, there was a large tumour, palpable, hard but resilient, slightly moveable, which lay in the hollow of the sacrum. It was possible to feel the sacral promontory above the tumour, and the tumour was completely incarcerated in the pelvis, and was probably a retroflexed gravid uterus. This tumour was quite distinct from the abdominal tumour.

A catheter was passed with difficulty, the urethra being lengthened. A stream of urine began to flow under very high pressure. This was quite clear and not offensive; 166 ounces were withdrawn. Urine was of specific gravity 1030, acid; no albumin, sugar, or pus. On examining the abdomen the original tumour had quite disappeared. An attempt was made to reduce the pelvic tumour, but this was impossible. An anæsthetic was administered, and with two fingers in the rectum the uterus was replaced above the promontory, and now lay at the level of the umbilicus. A Smith-Hodge pessary was inserted.

The uræmia was now treated by saline infusion, injection of digitalin, calomel, and warmth applied to the skin. A catheter was passed four-hourly, and at first passage 56 ounces of urine were withdrawn. The general condition gradually improved; bowels acted, patient perspired freely, and consciousness returned, though some delirium was present. Forty-eight hours after admission she passed urine normally and became quite conscious. On examination of the abdomen a pregnant uterus was palpable at the level of the umbilicus; nothing else abnormal. Seven days after admission the patient was out of bed, feeling quite well and wearing the Hodge pessary, which kept the uterus in normal position. She had no trouble or difficulty with micturition and the urine was normal in quantity and in every other way. She was discharged quite cured 14 days after admission and advised to wear the pessary for at least two months.

I beg to thank Dr. G. H. Hatton for supervising the notes of this case and allowing me to publish the same.

Stoke-on-Trent.

## INFANTILE DIARRHŒA.[1]

BY WILLIAM TIBBLES, M.D. CHICAGO (HON. CAUS.), L.R.C.P. EDIN., M.R.C.S. ENG., &C.

BREAST-FED children seldom or never suffer from diarrhœa. It is a consequence of artificial feeding. The causes may be classified as follows: Autogenetic: (1) gastro-enteric catarrh, (*a*) acute, (*b*) chronic; (2) intestinal fermentation; (3) toxæmia. Heterogenetic: (4) mechanical irritation; (5) nervous influences; (6) drugs; (7) improper feeding; (8) bacterial infection.

*Catarrhal diarrhœa* is the ordinary looseness of the bowels which affects many infants in early life, especially during dentition.

*Mechanical irritation* is the cause of diarrhœa resulting from attempts to feed children with bread, barley flour, oatmeal, and proprietary foods containing much starch. In older children diarrhœa often follows the consumption of partly cooked cereals, fruit containing seeds (strawberries, currants, gooseberries), dried fruit (currant cake, seed-cake, &c.), green vegetables (boiled cabbage, cauliflower, celery, lettuce, watercress), all of which act virtually as foreign bodies, irritate the mucous membrane, cause increased peristalsis, and sometimes a catarrhal inflammation of the mucosa.

*Nervous influences* are a frequent cause of diarrhœa—e.g., when the surface of the body is chilled, or when the ganglionic system is disturbed by excessive heat, fatigue, exhaustion, fear, or excitement. In very young children coldness of the feet is a very common cause of stomach-ache and looseness of the bowels. Many instances of diarrhœa are characterised by an exaggerated peristalsis. In such cases taking a meal, a chill, fright, or excitement will immediately start a violent peristaltic action, in consequence of which the food is hurried along the alimentary canal and undigested food appears in the fæces. This is often called lienteric diarrhœa.

The effect of drugs needs scarcely be mentioned, except to remind you that many drugs are excreted by the mammary gland. An aperient will affect the child through the mother's milk. In the same way cabbage, cauliflower, pickles, stewed prunes, and other fruits consumed by the mother will affect the nursing child.

*Diarrhœa due to the food of the infant.*—(*a*) It may arise from an excess of casein or an inability to digest it; the curd acts as a foreign body and sets up diarrhœa by mechanical irritation, or it undergoes putrefactive decomposition and gives rise to a toxæmia of which the diarrhœa is a symptom.

(*b*) It may arise from an excess of carbohydrates, especially maltose from the malted foods of commerce.

(*c*) It may arise from an excess of fat, especially the fat of cow's milk. The scientific basis of the requirement for plenty of fat in the child's food is beyond dispute. But it

[1] A paper read before the Nottingham Medico-Chirurgical Society on Nov. 15th, 1910.

must be digestible fat, such as that of human milk, fresh cow's milk, or gravity cream. The food of infants from birth to 6 months should contain 4 per cent.; from 6 to 9 months, 4·5 per cent.; from 9 to 12 months, 4·0 per cent.; and from 12 months onwards, 3·5 per cent. of fat. It is evident that diluted cow's milk does not contain the required proportion, and naturally we recommend the addition of cream. This additional fat has the effect of preventing the aggregation of casein into large masses of curd, and rendering the milk more easily digested. It has the further effect of increasing the weight of the child, improving the nervous system and the condition of the blood-making cells in the marrow of the bones. But occasionally infants cannot digest food containing more than 1 per cent. of fat from cow's milk; it gives rise to indigestion, fat diarrhœa, acidosis, and convulsions. The normal fæces of the breast-fed child may contain some fat. But the fat of cow's milk, consisting of much larger globules, is less easily digested than that of human milk, is not so readily saponified and absorbed.

The difference in the size of the fat globules of human milk, milk fresh from the cow, and in gravity cream is very great. But the difference between the fat globules in human milk and in separator cream is far greater. The act of centrifugalising the milk, in order to separate the cream sold in shops, breaks up many of the milk globules; they become aggregated together and form tiny particles of butter. The emulsion is more or less destroyed. Many children cannot digest such cream, vitality languishes in consequence of the deficient absorption, the oxidative processes in the body fail, and the undigested fat causes diarrhœa. The disturbance of the digestive processes leads to the formation of oxybutyric acid and acidosis. As a further result there is an increased destruction of protein in the organism to supply energy, while the imperfect nitrogenous metabolism leads to the excretion of ammonia.

*Diarrhœa due to infective causes.*—This form of diarrhœa is most prevalent in the summer time, and hence is called "summer diarrhœa." The predisposing causes are the age of the child, its constitution, bad feeding, and bad environment. Given one or more of these predisposing causes, a slight exciting cause will start the diarrhœa. The lesions in the intestines are slight and bear no relation to the severity of the illness. The chief symptoms are due to the absorption of toxins in the food or produced in the alimentary canal by bacterial decomposition. One of the most striking features is the prevalence of the disease in hot weather. An epidemic does not begin until the mean temperature of the atmosphere is 60° or 61° F., and remains so for several days (four to eight days). Neither the humidity of the atmosphere nor the rainfall appears to have much influence upon the progress of the epidemic or the mortality. The epidemic begins towards the end of July, is in full force throughout August, and lasts well into the third week of September. The mortality is highest during the first weeks of the epidemic because very few delicate infants are able to withstand the first month of great heat.

But heat alone is not sufficient to give rise to an epidemic. It is of infectious origin. The temperature which is necessary for the production of diarrhœa is the same as that most suitable for the activity of bacteria. The disease is most common amongst recently weaned children or those fed wholly or partly on cow's milk. Cow's milk ordinarily contains an enormous number of bacteria, and is an admirable medium for the culture of various pathogenic bacteria. The infection which causes diarrhœa may be of two kinds.

(*a*) *Autogenetic*, resulting from the normal bacterial flora of the intestines becoming pathogenic, the change in the action of the bacteria and the nature of the products being dependent upon the altered conditions in the alimentary canal. We have as a result a severe gastro-enteric intoxication which is not always distinguishable by its clinical signs from acute indigestion. As a rule, however, the temperature is higher, the nervous prostration is greater, the stools more liquid and offensive; and the disease is epidemic.

(*b*) The *heterogenetic* form of diarrhœa is far more fatal. It is due to the introduction of bacteria with the food, usually milk. The bacilli are streptococci, staphylococci, colon bacilli, the proteus, the bacillus of Shiga, and the bacillus cyanogenus. There are several clinical types. The term "cholera infantum" is only a generic name, and not a very satisfactory one. The clinical type of the disease, however, may depend less on the variety of the bacteria than on other conditions, such as the state of the mucous membrane or the resisting power of the child's organism.

The peculiar symptoms of the disease are due to absorption of the toxins produced by the bacteria. These substances create a profound impression upon the heart, the nerve centres, and especially the vaso-motor centres. A child previously healthy begins with a rise of temperature a few hours before the vomiting and purging commence, or these symptoms may occur simultaneously. The vomit consists first of food, then of mucus and bile; vomiting may subside and begin again after the administration of food or drink. The stools are abundant, fluid, and frequent, being first brown or yellow, then greenish-yellow, and finally they become watery or serous—rice-water stools. The temperature in mild cases is 102° or 103° F., in more serious ones 104° or 105°, and in fatal cases it often rises to 107° before death. The pulse is rapid, feeble, irregular, and finally almost imperceptible. The respiration is irregular, frequent, or stertorous. The eyes sink into the orbits; the features become sharpened and have an expression of anxiety. The child may be fretful and restless at first, but after a time, especially in fatal cases, there may be convulsions, stupor, or coma. Among the most important clinical signs are the high temperature and the loss of elasticity of the skin, and unless an improvement in these signs can be caused the probability is that the child will die.

*Treatment.*—(*a*) The *vomiting* may be relieved by lime-water, milk of magnesia, a mustard plaster over the epigastrium, a few doses of ingluvin or calomel, or the subcutaneous injection of 1-100th grain of morphine for a child of 6 months, or 1-50th grain of morphine and 1-600th grain of atropine for a year-old child, repeated in an hour. Washing out the stomach is also a valuable proceeding.

(*b*) *Purging.*—Astringents are of little value in these severe cases, especially while the toxæmia and high temperature exist. Should the purging continue after the temperature has fallen to nearly normal, bismuth, aromatic powder of chalk, cinnamon, tannigen, and other astringents may be used. During the acute phase of the disease an attempt must be made to stop the septic process by other means. But I doubt whether we can safely give to a child enough antiseptic to sterilise even a part of the alimentary tract. I think the best way of eliminating the bacteria is by the administration of purgatives and by securing an absence of the nutritive substances on which they flourish so freely. But I always give drugs which tend to reduce the septic conditions—e.g., calomel 1-6th grain, pulvis ipecacuanhæ 1-6th grain every two or three hours; or resorcin 2 grains, tr. opii ½ minim, tr. cardamomi co. 5 minims every two hours. Salol, ½ grain for a child of 6 months, and 2 grains for a child a year old, or beta naphthol, ¼ grain, every two hours, are useful remedies.

(*c*) The *depression* must be fought by the administration of brandy, champagne, musk, camphor, or ether. If they are vomited when administered by the mouth, similar remedies should be given subcutaneously—e.g., ⅓ minim of liq. strychniæ and 5 minims of ether every hour. A mustard plaster applied over the cardiac region is useful. The subcutaneous injection of half a pint of normal saline solution into the tissues of the buttocks or abdominal wall is valuable; it must, however, be injected very slowly, the fluid being allowed to find its way into the subcutaneous tissues by gravity rather than by pressure.

*Dietetics.*—(*a*) *Prophylactic:* Encourage breast-feeding. Avoid weaning breast-fed children in the summer-time. Bottle-fed children should have pure milk made into mixtures of a proper composition and suited to their age. Milk should be filtered through cotton-wool. Avoid improper foods, especially excess of casein and malted foods. Overfeeding must be avoided as carefully as improper feeding. Children become thirsty in hot weather, but they should not be given more food on that account; they should be given plain boiled water or distilled water to quench their thirst. Other prophylactic measures consist of scrupulous cleanliness, especially of the napkins and clothing; protection from flies and from sudden changes of temperature. A thin flannel (not flannelette) garment should be worn next to the skin to protect the abdomen from chill. The feet should be covered. Fresh air and sunlight are essential.

(*b*) *Remedial: Breast-fed children* should be kept from the breast so long as vomiting occurs. They may be fed with a little albumin-water, barley-water, or whey, and stimulants if they seem desirable. After 24 hours' rest of the stomach it is usually safe to resume breast-feeding gradually; at first allowing the child to suck for only two or three minutes at a time, by which means he will get one-fifth to one-fourth the usual amount of milk. He should be fed with albumin-water, whey, or barley-water, with a little meat juice, every two hours until a considerable progress towards recovery is made.

*Artificially fed children.*—Stop all ordinary foods until the vomiting ceases, usually giving a little barley-water or plain boiled water. When this is retained begin to feed cautiously with egg-albumin and lemon-water, whey, white-wine whey, buttermilk, chicken broth or veal broth, a teaspoonful every quarter of an hour. We are cautioned against the use of meat extracts because they have a tendency to increase the diarrhœa. But there are cases where the stimulating effect of creatin is valuable; and, where the child does not react with egg-albumin or whey, I do not think we can do any harm by giving chicken or veal broth, Valentine's meat juice, bovinine, Brand's essence, or hippi in small doses. Albumin water is insipid, but a few drops of bovinine, Valentine, or hippi will improve the flavour, and give to it stimulating properties which are lacking. Children 4 or 5 months old may have a little panopepton or beef-jelly (Mosquera's); children from this age onwards may have starch emulsion (arrowroot being preferable) and white of egg, which is useful in assisting to check protein decomposition and a persistent diarrhœa.

As soon as the acute stage passes off—which is known by the cessation of the vomiting, moderation of the diarrhœa, and reduction of the temperature—we may give dextrinised farinaceous foods, such as Mellin's, with barley-water and whey, or a little cream. Whey and cream mixtures are now very useful; egg-mixtures are especially valuable; and koumiss or fermented milk can be given. In these foods the protein differs from ordinary casein.

| Nutrients per cent. | Protein. | Fat. | Sugar. |
|---|---|---|---|
| Whey (casein 0·25, albumin and globulin 0·75%) ... ... ... ... ... ... ... ... | 1·00 | 1·10 | 4·5 |
| Whey 19 parts, cream 1 part ... ... ... | 1·00 | 1·8 | 4·1 |
| ,, 10 ,, ,, 1 ,, ... ... ... | 1·10 | 2·8 | 4·9 |
| ,, 5 ,, ,, 1 ,, ... ... ... | 1·25 | 4·0 | 4·8 |
| Peptonised milk (casein 1·84, peptones 1·76%) ... ... ... ... ... ... ... ... | 3·6 | 4·0 | 4·5 |
| Condensed sweetened milk (1 in 8) ... ... | 1·25 | 1·31 | 6·4 |
| Yaourte or leben (lactic acid fermentation)— | | | |
| Casein 3·25, peptones 0·35% ... ... ... | 3·6 | 3·5 | 2·0 |
| Koumiss— | | | |
| Entire milk—casein 2·44, albumin 0·5, peptones 0·26 ... ... ... ... ... ... ... | 3·2 | 1·9 | 2·5 |
| Skim milk—casein 2·5, albumin 0·5, peptones 0·35 ... ... ... ... ... ... ... | 3·35 | 0·8 | 2·6 |
| Egg mixtures— | | | |
| White of 1 egg, whey 5 oz., sugar ½ oz. | 3·1 | 1·04 | 5·3 |
| 1 raw egg, whey 7 oz., sugar ½ oz. ... | 3·24 | 2·9 | 6·8 |
| White of 1 egg, water 5 oz., sugar ½ oz., ½ yelk of 1 egg, meat-juice 5 drachms ... | 3·5 | 1·29 | 7·0 |
| Buttermilk ... ... ... ... ... ... ... ... | 3·8 | 1·28 | 3·3 |
| Buttermilk 10, water 10, sugar 1, cream 1 part... ... ... ... ... ... ... ... ... | 1·9 | 1·4 | 6·6 |
| Buttermilk 10, water 10, sugar 1, cream 2 parts ... ... ... ... ... ... ... ... | 2·0 | 2·1 | 6 5 |
| Buttermilk 10, water 10, sugar 1, cream 3 parts ... ... ... ... ... ... ... ... | 2·1 | 2·8 | 6·3 |
| Chicken broth (contains extractives) ... | 3·6 | 0·2 | — |
| Veal broth (contains extractives and gelatine) ... ... ... ... ... ... ... ... | 2·7 | 0·3 | — |
| Home-made beef-juice (contains extractives) ... ... ... ... ... ... ... ... ... | 2·9 | 0·6 | — |

As the diarrhœa passes off we must consider, if the food has been at fault, how to correct the error. If the fat has been in excess of the child's ability to digest and metabolise it owing to defective assimilation or oxidation, reduce the proportion of fat in the food. Avoid cream mixtures in such cases. Give white of egg and whey, condensed milk and whey, Mellin's food and whey or milk, extract of malt and milk, gradually increasing the strength of the food and adding gravity cream, but not separator cream. If malted foods have caused the diarrhœa avoid them and malt extract also. If casein has been in excess of the child's digestive capacity give egg-mixtures, whey mixtures, cream mixtures, extract of malt and milk. If diluted milk must be used 1 grain of sodium citrate to 1 ounce of food will prevent the formation of curds; or a teaspoonful of extract of malt in ½ pint of warm milk will in 10 minutes alter the casein so that it will be precipitated in fine flocculi nearly as small as those of human milk, and cream can be added to raise the percentage of fat.

Nottingham.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### PATHOLOGICAL SECTION.

*Asphyxia under Chloroform.—Lamarckism and Callosities.—Action of Pro- and Anti-thyroid Preparations.*

A MEETING of this section was held on Feb. 21st, Dr. F. W. MOTT, the President, being in the chair.

Dr. A. GOODMAN LEVY (Research Laboratories, University College Hospital Medical School) said that his research was undertaken to investigate the effect of asphyxia in animals under the influence of chloroform in view of a prevalent tendency to attribute a lethal importance to a condition of partial asphyxia induced accidentally in the course of chloroform anæsthesia and termed "intercurrent asphyxia." He considered that under chloroform the cardio-inhibitory reflex was obscured or suppressed by complete asphyxia, and that in conditions of partial asphyxia under chloroform the cardio-inhibitory reflex was variably affected, for it might be either diminished or increased in an apparently fortuitous manner, the intensified form of reaction being, on occasion, of a marked and significant character. Also under ether partial asphyxia affected the cardio-inhibitory reflex in a similar diverse fashion, and the intensified reaction would appear to be no less frequent than under chloroform. In relation to the incidence of fatal suffocation arising from an accidental complete occlusion of the air passages during anæsthesia, it had been stated by Richet in 1895 that chloroformed animals supported asphyxia as well as, if not better than, animals which had not been anæsthetised, and that it was always possible to restore them some minutes after cessation of respiration. That observation did not accord with his (Dr. Levy's) experience, for he had met with cases, both under chloroform and under ether (but more frequently under the latter), in which he failed to restore the heart beat. That subject was, he thought, worthy of investigation, for some of the asphyxial symptoms were not strongly evinced under chloroform, and so there must exist a suspicion that the nature of a suffocative process might not be properly recognised. The following considerations had to be borne in mind in connexion with that matter; that in complete obstructive asphyxia there was a greater deprivation of air than in the case of any of the non-obstructive experiments he had performed, and hence the cessation of respiration came about within a shorter period. Asphyxial spasm was practically suppressed at any higher concentration of chloroform than 1 per cent. The mechanical influence of the asphyxial respirations might induce an earlier fall of blood pressure than in the non-obstructive form of asphyxia. His remarks were, of course, merely suggestive and did not lead to any positive conclusion in respect of the possibility of death from suffocation under chloroform in ordinary clinical conditions. In conclusion, Dr. Levy said that so far as the scope of his experiments extended they did not afford any evidence to justify the assumption that asphyxia, whether partial or complete, was a more serious complication in any important respect under chloroform than under ether

narcosis. In both cases asphyxia was evidently undesirable, and of the two there was evidence that asphyxia under ether was the more active in affecting the respiratory centre.

Mr. S. G. SHATTOCK, in a communication on Lamarckism and Callosities, said that there was a maxim in the investigation of biological problems that they were best approached by a study of their simplest expressions. The question whether acquired characters were transmitted was one still under discussion. It was necessary to define what was meant by acquisition. The acquirement of secondary or external sexual characters at puberty was not a proper instance of it; these were delayed characters only. The term must be limited to an acquisition which was under control, so that the circumstances which called forth such acquisitions being prevented from acting the acquisitions would not arise. That was essentially Lamarck's position. Leismann's category comprised precisely such characters, overgrowth of parts from increased use; atrophy from diminished use; changes due to climatic influence; mutilation. Even in the blind fish among the deep-sea fish from the *Challenger* dredgings it was unproved that the transmitted want of the eyes had resulted from an atrophy acquired by disuse, for such fish were possessed of a phosphorescent organ in the neighbourhood of the eye, the growth of which, Mr. Shattock suggested, was probably correlated with the disappearance of the eye, as the gills of the tadpole disappeared with the growth of the lungs. In regard to overgrowth from increased use, he took the case of the well-known callosities on the sternum, knee, carpus, and other parts of the camel; no simpler example could be given of overgrowth due to increased exercise. The callosities were present on every camel, whether bred in a menagerie or under natural conditions. Were they present at birth? He had critically examined into that in specimens especially obtained from Cairo. In the full-term fœtus there was absolutely no trace of want of hair, or any epidermal thickening in a single one of the proper positions. The character, simple as it was, was not transmitted in spite of its universal and long-continued acquirement; all that was transmitted was the capacity to acquire it should the external conditions come into play. The gluteal callosities in the baboon and certain other monkeys were of a more ambiguous kind. Those were present at birth, but in a certain sense only. He had studied those histologically in the Guinea baboon and in macacus at birth. The skin was quite hairless at birth, but it was particularly thin and devoid of papillæ and glands; the epidermis over it was no thicker than in the loose piliferous skin around. The thickening of the epidermis of the palm and sole of the baboon, &c., at birth was due to the abundant development of papillæ, the intervals between which were filled with it. Those parts were essentially tactile areas, adapted in the first place for arboreal progression. The hairless gluteal areas were not so. By use the epidermis over them became notably thickened; yet that being a proper acquisition from use, was not transmitted. Mr. Shattock provisionally suggested that the thinly skinned hairless districts were related to cutaneous scent gland areas, of which they might be vestiges. Such cutaneous glandular areas were largely found amongst antelopes though not gluteal; in some cases the glandular patch was also piliferous, in others it was bare, and in yet a third there was a thinly skinned, smooth, naked area, the glandular zone being around that. Such a disposition suggested that the hairless area in the monkeys was related to a peripheral glandular zone, and that the hairless area in question was not essentially due to the commonly supposed cause—viz., the sitting attitude adopted by apes; the hairs were not worn down as in the camel; they were congenitally absent.

Mr. W. EDMUNDS read a paper on the Action of Pro- and Anti-thyroid Preparations. He said that it had previously been shown that the administration of thyroideum siccum B.P. caused illness and death in rats, together with changes in the suprarenal glands, and that knowledge was used to test the value of the milk of thyroidless goats in the treatment of chronic thyroid poisoning; as a control the milk of a normal goat was used; it was found that the rats died sooner when fed on the thyroidless milk than with normal milk. It was pointed out that that could be explained by the operation of thyroidectomy on the goat causing a tendency to myxœdema, which might give rise to an antimyxœdemic body, which would be a pro-thyroid body and would aid the thyroideum siccum in causing the death of the rat. The thyroid administration caused exophthalmos which persisted after the treatment was stopped.

Dr. B. H. WEDD read a paper on Multiple Submucous Tumours in the small intestine associated with carcinoma of the larynx, and Dr. A. E. BOYCOTT spoke on Uterine Tumours in Rabbits.

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## SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

*Exhibition of Cases and Specimens.—The Oculo-motor Type of Polio encephalitis.*

A MEETING of this section was held on Feb. 24th, Dr. E. CAUTLEY, the President, being in the chair.

The following cases and specimens were shown:—

Dr. E. BELLINGHAM SMITH: A case of Spasmus Nutans in an infant aged 11 months. The movements, which were side to side, were first noticed two months ago and were followed in a week by nystagmus. The movements were of only a few seconds' duration and tended to recur every few minutes if the head was unsupported; recently they had become less frequent. They ceased when the child was lying in its cot. The nystagmus was horizontal and more marked in the right eye than the left; it was fine and exceedingly rapid. There was originally a convergent strabismus, and twitchings of the left hand were said to occur.

Dr. J. PORTER PARKINSON: A case of Congenital Dilatation of the Colon in a girl aged 6 years. Except for constipation and occasional colic the child had been healthy from birth. There was no history of consumption or syphilis in the family. The girl was healthy looking and not in the least anæmic. The heart and lungs were normal except for displacement of the diaphragm upwards, which caused the heart's apex to be displaced into the fourth space, and compressed the basis of the lungs. The abdomen at first was greatly distended, measuring 29 inches in circumference, and peristaltic movements of the colon were occasionally visible. It was not tender and was generally resonant. Enemata had brought away enormous quantities of fæces, and the abdominal distension had diminished, so that the measurement was now only 21 inches. The colicky pains had also disappeared. X-ray photographs, taken after injection of bismuth, showed the great enlargement of the colon, and examination of the stomach by auscultatory percussion and other methods suggested that there was some enlargement of that organ.

The PRESIDENT: A case of Cerebral Athetotic Diplegia in a girl aged 2¾ years. The family history was negative, but the mother was only 19 years of age when the child was born. At four months the patient could sit up and this was an important point in favour of the condition being post-natal in origin. She cut her teeth quickly and was said to have talked well at two years of age. She could walk a little by herself last October, but was never able to walk well as her feet turned out. Nine months ago she had a fall, and about that time her back was found curved. For the last four months she had been kept on her back, and for a month or so she was said to have become "strange in her mind." The child was well nourished, and her mental condition was lively but defective. She laughed and cried without obvious cause and could speak only a few words. Her expression was usually rather a vacant smile. The pupils showed no abnormality and there was no nystagmus. The fundi were normal. The palatal arch was high and the teeth were well developed. The head was asymmetrical, 18½ inches in circumference, and was always held a little to one side as if there were slight torticollis, while the chin was receding. The hands showed ataxic and purposeless movements while at rest and some incoördination on movement. There was a little scoliosis in the mid-dorsal region with convexity to the right. The knee-jerks were exaggerated, especially on the left side. The legs were a trifle stiff, and the feet in the position of equino-valgus, but the deformity was easily reduced. The toes were not hyper-extended. The gait was ataxic and slightly spastic, and the right leg was somewhat flexed at the hip and externally rotated. There was also incontinence of urine. The condition was probably due to structural damage,

possibly by mild encephalitis, of the frontal and parietal regions of the cortex.

Mr. D. C. L. FITZWILLIAMS: A case of Congenital Absence of the Pectoral Muscles in a girl, aged 13 years. Both pectoral muscles were absent on the left side, and the chest was flattened. The ribs could be seen as well as felt on that side in consequence. The anterior wall of the axilla was composed of a prominent fold of skin stretching from the front of the chest to the arm. There was an asymmetry about the shoulders, and the left scapula appeared "winged," although the trapezius and serratus magnus muscles seemed normal. No other abnormality had been found, and no history could be obtained of deformity in the family.

Dr. J. W. CARR: A case of Anorexia Nervosa in a Jewess, aged 10 years. Her previous history was indefinite, but she was said to have been healthy until she was five years old, when she lost her appetite, had pain in the stomach after food, and began to waste. Three years ago she was in the Great Ormond-street Hospital; her weight was then 25½ pounds, and she gained 1½ pounds under treatment, but no cause for the wasting was made out. On admission to the Victoria Hospital last September her weight was 26 pounds, and since then she had gained about 1 pound. The child was excessively emaciated, but could walk with ease. She had no appetite and complained of a lump in her throat, which she said prevented food going down. She had been sick nearly every day since admission, often five or six times, usually very soon after taking food. Her temperature was generally subnormal and there was no evidence of disease in any part of the body. Bismuth and radiography showed that there was no obstruction in the œsophagus and no dilatation of the stomach. The tongue was sometimes much furred and sometimes clean. The bowels acted fairly regularly. The treatment tried had included isolation and massage, faradism, feeding by nasal tube, gastric lavage daily, starvation, and chloretone to produce drowsiness, but the vomiting had continued and the general condition remained unaltered.

Dr. A. W. G. WOODFORDE: Specimens from a case of Delayed Chloroform Poisoning in a boy, aged 9 years, who was anæsthetised for the removal of an enlarged gland in the right side of the neck, there being no other signs of disease. The gland was easily removed, anæsthesia lasting in all about 15 minutes. On recovering consciousness he vomited once and passed a comfortable night. On the following day he vomited twice, but took the usual light diet well and appeared to be in a satisfactory condition. Two days later he had slight vomiting on three occasions. The next morning he ate part of his breakfast and was then noticed to be in rather a collapsed state. He reacted well to simple restoratives and slept heavily during most of the day, but was never unconscious. In the evening he vomited and later became unconscious, respiration ceasing two hours afterwards. With artificial respiration the heart continued to beat for five hours after the breathing had ceased. The urine tested shortly before death contained a large amount of (?) acetone. Post mortem, a gross, fatty degeneration was found in the liver, which was golden-yellow in colour, and in the heart, kidneys, and spleen. A few submucous hæmorrhages of small size were seen in the stomach. Caseating tubercle was found in one of the bronchial glands and also in a mesenteric gland. Sections of the liver, heart, muscle, kidney, and spleen all showed an extreme grade of fatty degeneration.

Dr. E. I. SPRIGGS and Dr. J. B. DE W. MOLONY: A case of Angiomata of the Left Loin and Leg in a girl, aged 4½ years. In the left loin there was an irregularly-shaped tumour extending from the eighth rib to 1½ inches below the anterior superior spine and from the mid-Poupart line to the level of the posterior superior iliac spine. It lay superficial to the muscles and was of a soft doughy consistence, giving no expansile pulsation or thrill. In the skin over the tumour were numerous small nævi. There was a similar but smaller tumour in the adductor region of the left thigh, extending backwards towards the fold of the buttock. On the left leg there were five pigmented swellings along the internal saphena vein, each of the size of a hazel-nut and a small non-pigmented mass on the inner surface of the left foot. There were also numerous small nævi scattered over the back in a more or less symmetrical arrangement. The condition was present at birth. Except for enlarged inguinal glands on both sides the child showed no signs of other abnormalities.

Dr. C. RIVIERE: A case of Congenital Aortic Stenosis in a boy, aged 5½ years, with no history of rheumatism. The patient was of normal size, nutrition, and colour. There were no finger-clubbing and no nodules. On the left side of the neck was the scar of a branchial fistula, which was successfully operated upon three years ago. The heart appeared to be of normal size, but the impulse was forcible. There was a thrill over the aortic area but no pulsation. A rough systolic murmur was audible over the whole heart, but of maximum intensity over the aortic area and conducted a long way into the large arteries. The aortic second sound was clear and there was no evidence of a patent ductus arteriosus. The pulse, 100 per minute, appeared to be rather small and soft.

Dr. J. L. BUNCH: A case of Lichen Spinulosus in a child, aged 2½ years. Some months ago an eruption of apparently blackish specks appeared on the chest and later on the shoulders. The lesions present consisted of fine pigmented spines which could be easily removed and left definite depressions marking the openings of the follicles, some of which had become infected by staphylococci. There were also some lesions in the groin, but the characteristics of lichen spinulosus were not so well marked in that situation.

Mr. S. STEPHENSON read a paper on the Oculo-motor Type of Polio-encephalitis. He drew attention to a group of cases of squint in young children, which he believed to be due to polio-encephalitis. Any of the extrinsic muscles of the eye might be affected, but in two-thirds of his cases the external rectus was alone involved. The intrinsic musculature of the eye was seldom attacked. The squint, which was of paralytic nature, was associated in about one-third of the cases with fits, convulsions, stupor, or other symptoms indicative of an affection of the brain. The common form of encephalic strabismus was apt to be confused with the ordinary form of concomitant convergent strabismus, although the age incidence of the two affections was different. For purposes of differentiation a careful examination of the corneal reflexes was all-important.

The cases and paper were discussed by the PRESIDENT, Dr. H. SKELDING, Mr. FITZWILLIAMS, Dr. L. G. GUTHRIE, Dr. F. LANGMEAD, Dr. C. R. BOX, Dr. C. W. CHAPMAN, Dr. F. PARKES WEBER, Dr. J. BLUMFELD, Dr. BELLINGHAM SMITH, Dr. J. D. ROLLESTON, and Mr. J. P. L. MUMMERY.

## OTOLOGICAL SECTION.

*Malignant Disease of Lateral Wall of Naso-Pharynx.—Report and Exhibition of Cases.*

A MEETING of this section was held on Feb. 17th, Mr. ARTHUR H. CHEATLE, the President, being in the chair.

Dr. EDWARD LAW reported the termination of a case of Malignant Disease originating in the region of the Eustachian tube, early symptoms of which were deafness and discomfort in the ear.

Mr. WILFRED TROTTER gave a brief summary of the principal features of Malignant Disease of the Lateral Wall of the Naso-pharynx, as exemplified in eight cases which he had operated upon, including Dr. Law's patient. In five or six of the cases the tumour was an endothelioma originating about the Eustachian tube, and in them the symptomatology was remarkably uniform. 1. Pain was the first symptom, and lasted some months. The diagnosis at this stage was generally trigeminal neuralgia. 2. Deafness of the type produced by Eustachian obstruction, which in some instances could be temporarily relieved by means of the Eustachian catheter. Failure to give relief had led to further examination and eventually to the discovery of the disease. 3. An abnormality of the soft palate was sooner or later noticeable; this was raised but could not be relaxed on the affected side, owing no doubt to infiltration of the levator palati. 4. In the later stages œdema of the soft palate and adjacent pharyngeal walls appeared. 5. In none of these cases was nasal obstruction a striking symptom. Access to the disease was gained by an osteoplastic operation, the essence of which was reflection of the upper jaw and malar bone in a flap. The base of the skull and lateral wall of the naso-pharynx were thus brought well into view. In some cases it had been necessary to ligature the internal or common carotid artery. The patients usually recovered well from the operation, but none had survived without recurrence of the disease longer than 15 months, a circumstance which emphasised the importance of early

diagnosis.—Mr. HERBERT TILLEY recorded his experiences of similar cases.

Mr. SYDNEY R. SCOTT reported a case of Fistula of the Superior Semicircular Canal on the left side; bilateral radical mastoid operation; instrumental exploration of the left vestibule; total vestibular ablation reactions on left side. One of the principal points of interest was the evidence which indicated localisation of disease without involvement of the cochlea.

Dr. H. J. DAVIS showed: 1. A case of Caries and Necrosis of the Temporal, Parietal, and Occipital Bones following mastoiditis due to scarlet fever in a girl aged 5 years; operation; recovery. 2. A case of Extra-dural Abscess of the Posterior Fossa tracking through the jugular foramen into the neck; sloughing of middle third of internal jugular vein; operation; recovery. 3. A case of Acute Vertigo with repeated falls, always to the left, during the last two months. He asked for an expression of opinion as to whether the disease was labyrinthine, intra-cranial, or due to hysteria. The patient had had mastoid suppuration, complicated by the presence of nystagmus, giddiness, headache, epileptiform fits, and complete left hemianæsthesia. The caloric reactions were negative on the left side, but positive on the right side, and this pointed to an organic lesion.—The case was discussed by several members, who agreed that the evidence pointed to an organic lesion occurring in a so-called hysterical patient.

Dr. W. H. KELSON exhibited a patient with a very Unusual Swelling in the Tympanum.

Dr. DAN MCKENZIE showed a boy upon whom the Complete Mastoid Operation had been performed 18 months previously, the bone forming the so-called facial spur having remained bare ever since that time.

## SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

*Malaria.*

A MEETING of this society was held on Feb. 17th with Professor RONALD ROSS in the chair.

Professor ROSS read a paper on Some Enumerative Studies on Malaria, Blackwater Fever, and Sleeping Sickness. He said that by enumerative methods he meant the systematic counting of the numbers of organisms present in men or animals infected with given parasites. The object was threefold: first, to ascertain the correlation, if any, which existed between such numbers and the various symptoms; secondly, to determine with more exactness the effect of various therapeutic agencies; and thirdly, to obtain more light upon the general phenomena of the parasitic invasion. The mere detection of parasites was not enough. For further knowledge they must count, measure, and compare, with the ultimate object of learning how to cure. For example, a pigeon contained swarms of halteridium and remained apparently quite well, but the same number of Plasmodium falciparum in a man made him seriously ill. Why and how was this? Again, why did plasmodia appear and disappear so frequently? Why were the sexual forms not always present? Why did the numbers of leucocytes vary? and so on—questions which they could not even attempt to answer without very careful measurements. Again, regarding experimental therapeutics, the method in use was to try whether a given line of treatment abbreviated sickness or prolonged life in a number of cases. By counting the parasites before and after a dose of a drug, however, they could now often obtain a much more exact criterion of its effects. In short, without such countings they could seldom reach any real proof on a number of most important propositions. They might almost say that the history of what was called medical science was largely a history of defeats due principally to the absence, or impossibility, of numerical exactness—to mere qualitative observation and to insufficient sampling. Of course, parasite counts had been made previously, and they had attempted nothing more than making them methodically. Dr. David Thomson had studied 33 cases of malaria—one of P. malariæ, eight of P. vivax, and 24 of P. falciparum—and made daily counts, numbering about 600 altogether. It was found that the numbers of asexual forms diminished gradually after the febrile period until about the middle of the apyrexial interval was reached, after which they increased gradually again, until they became numerous enough to cause a relapse. Dr. Thomson could, indeed, foretell a coming relapse by this gradual increase. There was no sudden and absolute disappearance of the asexual forms during the rally, as they had previously thought occurred. In regard to treatment of malaria, it was shown that quinine was not immediately lethal to all the parasites; but they could not plot the curve showing the progress of reduction. Whether the lethal action of the drug became more and more or less and less marked day after day they could not determine; and yet that was precisely the point requiring determination in order to say how long the treatment must be continued to obtain total extirpation. Methylene blue and soamin had little effect on the asexual forms; but Dr. Thomson thought that the former affected crescents—which remained very refractory to quinine. Referring to blackwater fever, Professor Ross said that one of the cases of malaria suffered from typical blackwater fever while under study in hospital. The patient had three distinctly pyrexial periods, all differing as to three things—plasmodia, fever, and hæmoglobinuria. The first attack showed plasmodia with the characteristic plasmodium fever and no hæmoglobinuria. The second showed no plasmodia, but typical blackwater fever and blackwater. The third showed no plasmodia and no blackwater, but a typical blackwater fever alone. What was the cause of the fever during the second and third attacks? It could not have been the hæmoglobinuria, because that was entirely absent during the third attack. In blackwater fever, therefore, there must be some subterranean factor at work, some process different from the ordinary processes of ordinary malaria. In regard to sleeping sickness a periodic cycle was shown. On Dec. 4th, 1909, a young man, aged 26 years, was admitted into hospital for trypanosomiasis contracted three months previously in N.E. Rhodesia. Regular daily counts of his trypanosomes were commenced by Dr. David Thomson on Feb. 14th, 1910, and quickly revealed a phenomenon not previously clearly observed—namely, that the parasite curve rose and fell regularly about once a week. The discovery of the cycle enabled them to test the effect of treatment with some accuracy. The case was unfortunate because of the great effect of atoxyl on his eyes, but they were obliged to give it frequently nevertheless. On April 5th four grains were injected at the commencement of a parasitic rise; but the rise continued apparently unchecked. They could not say that following doses produced any marked reduction, though, of course, the parasites might have become more numerous without them. At the end of the case the curve presented precisely the same appearance as at the beginning. Quinine, methylene blue, trypan red, succinamide of mercury, izal oil, potassium iodide, trypsin, and amylopsin had no marked success, though the two first-named seemed to benefit the œdema to some extent.

Dr. ROBERT T. LEIPER, helminthologist to the London School of Tropical Medicine, contributed some notes on the Presence of a Lateral Spine in the Eggs of Schistosomum Japonicum; and Dr. N. F. SURVEYOR, professor of bacteriology, Grant Medical College, Bombay, communicated a few observations on the Cultural Characteristics of a Variety of the Streptothrix of White Mycetoma.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 21st, Mr. J. Howson Ray, the President, being in the chair.—Dr. George R. Murray read a paper on the Treatment of Some Diseases of the Lymphatic Glands and Spleen. In the treatment of Hodgkin's disease he laid stress on the necessity of carefully examining the mouth, ears, nose, and skin, and the insisting on the avoidance of all mental and bodily strain. The ordinary lines of treatment by drugs he referred to, and discussed the advantages and disadvantages of surgical treatment—removal of enlarged glands—and treatment by X rays. His experience of surgical treatment had not been very encouraging, and unless there was pressure on important nerves or vessels by the enlarged glands he would refrain from advising its adoption. The X rays were the most valuable means at our disposal for the treatment of these cases. He had seen most satisfactory results follow their use, but was of opinion that the best

results would be got if arsenic was administered at the same time. The rays reduced the gland enlargement as nothing else could, but unfortunately the patient's general condition did not show a corresponding improvement. By whatever line of treatment adopted, however, cure could not be attained, but merely a keeping of the disease under control. The apparatus used should be a powerful one, and the rays given two or three times a week for periods depending on the condition of the patient. Several cases were quoted, amongst them being that of a lady with marked enlargement of the mediastinal glands, where the rays had produced a very wonderful improvement in the condition of the glands, her general condition, however, being very little better. In leukæmia, when there was a rise of temperature, the patient should be absolutely confined to bed and great care observed to avoid injury to the spleen. He strongly urged open-air treatment for these cases. Arsenic should be given in large doses; in one case he had given 25 minims of the Fowler's solution three times a day. The X rays were of value, leading to a surprisingly rapid reduction in the size of the spleen and markedly controlling the excess of the white blood corpuscles. The applications should be persisted with for two or three months, and then given once a month. Here, again, the rays did not lead to a cure, and he had observed that where relapses occurred they had frequently proved valueless. In lymphatic leukæmia the acute cases ran a very rapid course and the chronic ones were very protracted. Cases were quoted to prove that in this condition the X rays were of little value. They certainly reduced the white blood corpuscles, but at the same time there was a very marked reduction of the red. In splenomegaly the X rays were of no value. He thought excision of the spleen held out the best chances for the patient. Where ascites was present tapping must be resorted to.—Dr. C. H. Melland said that his experience of the removal of one set of glands in Hodgkin's disease was that it frequently led to the lighting-up of the disease in other glands. Arsenic had given him excellent results. It should be given in large doses, stopped for a while, then large doses again, and finally the patient kept on a course of small doses. X rays, he thought, were effective, but he preferred to start with arsenic, and when this appeared to be failing in its effect then go on to the rays. In leucocythæmia he regarded arsenic as invaluable. He had seen the leucocytes reduced in ten months from 150,000 to 8000 per cubic millimetre. The reduction, too, was usually accompanied by an improvement in the general condition of the patient, a fact which was often absent in Hodgkin's disease. In splenic anæmia he thought arsenic should be given in increasingly large doses. In one case under his care he had observed the reduction in the size of the spleen to one half what it was when the arsenic was started, and this in two months, and the accompanying anæmia had entirely disappeared. A recurrence of the condition would make him seriously consider the advisability of surgical interference.—Dr. P. R. Cooper said he regarded lymphadenoma as being very closely allied to lymphosarcoma, and acting on this opinion he had some years ago treated an advanced case of the former with injections of Coley's cancer fluid. He started with injections of half a minim and finally was giving five minims. The injections had on two occasions been followed by serious collapse. He was of opinion that treatment with vaccines would most probably in the future prove to be of value. — The President briefly referred to the effects produced by the injection of Coley's fluid. He had seen collapse follow the injection of half a minim, while two or three minims had no effect.—Dr. A. A. Mumford asked Dr. Murray if the X rays had proved of any value in the treatment of enlargement of the thyroid gland. —Dr. Murray, in reply, said that he had not observed the effect of surgical treatment referred to by Dr. Melland, but would bear it in mind. He pointed out to Dr. Cooper that the structure, microscopically, in lymphadenoma and lymphosarcoma had been definitely proved to be entirely different. The X rays had proved of no value in the treatment of enlargement of the thyroid.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on Feb. 17th in the Victoria Infirmary, Professor R. Muir, the President, being in the chair.—Dr. A. Napier described the Treatment of Phthisis Pulmonalis as carried out in his wards.—Mr. A. E. Maylard showed a series of Abdominal Cases illustrating the following conditions:—(*a*) Congenital narrowing of the pyloric orifice treated by gastro-jejunostomy. (*b*) Hypertrophic stenosis of the pylorus in the adult; pylorectomy with gastro-jejunostomy for supposed malignant disease. (*c*) Hour-glass contraction of the stomach treated by gastro-gastrostomy. (*d*) Intractable gastric neuroses treated by exploratory gastrotomy. (*e*) Tuberculous cæcum—excision and implantation of ileum into ascending colon by invagination. (*f*) Carcinoma of colon—excision—continuity established by intestinal invagination. (*g*) Carcinoma of colon—inoperable—short-circuiting by intestinal invagination in place of artificial anus. (*h*) Acute intestinal obstruction—fæcal vomiting—evacuation of contents of intestine and introduction of magnesium sulphate into the bowel. (*i*) Appendicitis with abscess—appendicectomy and swabbing of abscess cavity with pure carbolic acid. (*j*) Tuberculous peritonitis—laparotomy—removal of fluid and exploratory manipulation of parts. (*k*) Uterine and ovarian tumours removed by subumbilical transverse incision. (*l*) Invagination of divided ureter into bladder. (*m*) Transperitoneal nephrectomy by transverse incision. (*n*) Lipectomy for pendulous abdomen and ventral hernia—removal of 10 pounds 11 ounces of fat by a 21-inch transverse elliptical incision. (*o*) Abdominal cicatrices after transverse or oblique division of the rectal sheaths and recti muscles.—Mr. R. H. Parry showed cases to illustrate Points in the Surgical Treatment of (*a*) Torn Cartilage in Knee-joint; (*b*) Exophthalmic Goitre; (*c*) Fractures into Joints; (*d*) Gangrene of Gall-bladder; and (*e*) Duodenal Ulcer.—Dr. J. Grant Andrew showed (*a*) Cases of Renal Calculi, with Skiagrams; (*b*) Two Children suffering from Infantile Spastic Paraplegia who, prior to orthopædic treatment, were unable to walk; and (*c*) an Infant who has been Operated on for Congenital Hypertrophic Stenosis of the Pylorus.—Dr. Robert B. Carslaw showed (*a*) a patient operated on three months ago for Perforation of Pyloric Ulcer (Excision of Ulcer, Pyloroplasty), who developed empyema suddenly after two months of good health; (*b*) Card Specimens—(1) Acute Carcinoma of the Breast removed from a young woman, aged 29; (2) X Ray Photographs of Two Cases of Tuberculosis of the Acetabulum, with Pathological Dorsal Dislocation of the Head of the Femur (photographs taken before and after operation).—Dr. A. Brown Kelly showed cases presenting the following conditions:—(*a*) Double Abductor Paralysis; (*b*) Pharyngeal and Laryngeal Nystagmus; (*c*) Cornua of Hyoid Projecting into Pharynx; (*d*) Cicatricial Stricture of the Œsophagus; (*e*) Submucous Cleft Palate; (*f*) Keratosis of Pharynx and Larynx; and others.—Dr. A. N. M'Lellan showed (*a*) a patient operated on for Extra-uterine Pregnancy of the Right Tube, in whom the left tube was distended with blood-stained fluid and closed; (*b*) a case of Carcinoma of the Body of the Uterus; (*c*) a case of Fibroma of the Left Ovary with extensive adhesions to bowel and pelvic floor; large accumulation of fluid in pleural and peritoneal cavities, which was removed on several occasions by tapping; removal of tumour, followed by complete disappearance of fluid from both cavities; patient now in good health.—Dr. Albert A. Gray showed (*a*) microscopic sections showing the organ of Corti; (*b*) microscopic sections showing the Cochlea of a Deaf-mute; (*c*) microscopic sections from a case of Oto-sclerosis; (*d*) macroscopic specimen showing Fixation of the Stapes in Oto-sclerosis; and (*e*) family tree showing the Influence of Heredity in Oto-sclerosis.—Dr. Hugh Walker showed some Ophthalmic cases.—Dr. John Anderson showed pathological specimens illustrating some of the Enlargements of the Kidney.—Dr. D. O. MacGregor showed a series of skiagrams illustrative of various medical and surgical conditions.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 17th, Dr. J. Dobson being in the chair.—Mr. H. Collinson read a paper on the Acute Aspects of Appendicitis in Children.—Dr. T. Churton showed two cases of Graves's Disease and made some comments on the prognosis, drawing attention to the fact that it was in many cases favourable. He related the case of a woman who had been under his observation for 33 years. She recovered from the first attack in 12 years; less completely from a second attack; and died in 1910 from (it is said) heart disease and dropsy at the age of 54 years. Another patient still under observation had been free from symptoms for 11 years.—Dr. T. Wardrop Griffith gave a short demonstration of the information obtained by the use of the clinical polygraph in cases of actual and of apparent pulsation of the liver, in connexion especially with

cardiac disease. Two cases were especially commented on in which there was great hepatic enlargement. In one of these in which there was a pulse of the continuously irregular type, with a jugular pulse of the ventricular variety, there was extreme hepatic expansile pulsation which was shown to be also of the positive or ventricular character. In another case in which the enlargement was quite as great the pulsation of the liver was shown to be apparent only, and due to an upward drag on the liver exercised on that organ by the contraction of the ventricles. In a third case an auricular as well as a ventricular wave was shown. The bearing of these observations on diagnosis was briefly commented on.—Mr. H. Secker Walker showed a case of Chronic Glaucoma affecting both Eyes, for which Herbert's small scleral flap operation had been done ten weeks previously with successful results. He also exhibited a case of Excision of the Lacrymal Sac for Chronic Dacryocystitis.—Mr. J. A. Coupland showed a girl, aged 18 years, with an Ulcer exposing the Inner End of the Right Clavicle. The ulcer was of 17 months' duration. It had firmly healed under complete rest with fixation of arms, but recurred in two months. The ulcer showed no characteristics of syphilis or tubercle and did not react to antisyphilitic treatment. It was suggested that the ulcer was artificially produced by the patient herself. —Mr. W. Thompson showed a boy, aged 12 years, in whom four years ago the greater part of the right tibia was removed for acute osteomyelitis. The upper epiphyseal line of the tibia had been destroyed and it was three inches shorter than the other tibia. The fibula was half an inch shorter than the other and had overgrown the tibia both above and below.—Mr. W. Gough showed a Villous Tumour removed from a woman who had had several attacks of painless, profuse, paroxysmal hæmaturia. Through Nitze's cystoscope a small tumour was seen at the left ureteral orifice. A large Kelly's cystoscope was then passed and the tumour was avulsed by means of a pair of long-nibbed forceps. Removal left only one small raw point.—Mr. H. Littlewood and Mr. S. W. Daw showed a boy, aged 12 years, in whom there was a massive Keloid of the Neck following burns from ignition of a celluloid collar two years ago. The tumour began to appear as the scar was healing. —Mr. G. Constable Hayes showed a patient, aged 24 years, who had had a Discharge from both Ears from Childhood. She had suffered from snuffles and sores around the mouth as a baby (marked scarring at angles of mouth). The right ear showed complete destruction of the membrana tympani and ossicles. The opening of the Eustachian tube was seen in the middle ear. Watch was heard at 5 inches. The left ear showed an aural polypus presenting at the external auditory meatus, with its origin from the attic. Watch was heard at 15 inches. The nose showed extreme atrophy of ethmoid with rhino-pharyngitis sicca.—Mr. H. Collinson showed a case of Bismuth Poisoning after the use of Stiles's paste.—Cases and specimens were also shown by Dr. E. F. Trevelyan, Dr. J. Stewart, Dr. J. B. Hellier, Dr. R. A. Veale, Mr. Michael A. Teale, and Dr. W. H. Maxwell Telling.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 16th, Mr. A. W. Cuff, the President, being in the chair.—Dr. John Robertson read a paper in which he stated that there had probably been no greater change in the whole range of medicine than that which had taken place in their views in regard to the nature of infection and the methods by which it was conveyed from one person to another. They now recognised that from 60 to 70 per cent. of all the deaths were due to processes which were known as infective, while of the remaining ill-defined causes of death many were of similar origin. There was still a group of infective diseases, of which measles and small-pox were types, in regard to which their knowledge was very incomplete, as they did not know how the infection was given off from the infected person. They had, therefore, invented as an explanation the theory of aerial convection. Clinical and bacteriological investigation had, however, given reliable information as to how the infection in most of the other diseases was conveyed either directly or indirectly. Careful observations in fever hospitals and in private practice had demonstrated beyond doubt that in the majority of diseases the infection was transported from one to another directly or indirectly, and that passage through the air did not play the part which it was at one time thought to play. While this was so in practice it could be demonstrated that in the act of loud talking particles of saliva were ejected from the mouth and carried in the air to distances of 30 or 40 feet. It was, therefore, probable that this projection of infection should be taken into consideration in dealing with cases where coughing or sneezing was present, such as occurred in measles, whooping-cough, and tuberculosis of the lung. No two diseases could be regarded as alike in the way in which the infection was spread. Carrier cases were now a recognised source of infection. Dr. Robertson thought that they played a very much less important part in practice than theoretically they should play. The problem of infection spread by flies, mosquitoes, fleas, &c., was also dealt with.—Dr. Arthur J. Hall showed a case of combined Posterior and Lateral Sclerosis (Ataxic Paraplegia) in a man aged 23 years. The symptoms, which began 18 months ago, consist of marked ataxia with weakness in the legs and pain in the knees. The gait is very ataxic and is associated with some jerkiness of movement and slight tremors at times. The eyes are normal in every way, also the head and neck and upper limbs. Romberg's sign is well marked; patellar jerks much exaggerated; toe extension on both sides; no true ankle clonus; no tenderness; no definite alteration of sensation; sphincters normal; no family history of similar cases; no syphilis; no etiological factor discovered.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 23rd, when a demonstration of Kinematographic Microscopy was given by Dr. E. Burnet of Leamington. The films exhibited showed trypanosoma Brucei, trypanosoma Lewisi, spirochæta gallinarum, spirochæta pallida, the organisms of relapsing fever, and spirochætæ of Vincent. The demonstration was a most interesting one, and a large audience listened with the greatest interest to the explanation given by Dr. Burnet of the various points shown by the films. A hearty vote of thanks to the demonstrator concluded the proceedings.

# Reviews and Notices of Books.

*Manual of Medicine.* By THOMAS KIRKPATRICK MONRO, M.A., M.D. Glasg., Professor of Medicine, St. Mungo's College; Fellow of, and Examiner to, the Royal Faculty of Physicians and Surgeons, Glasgow; and Physician to the Glasgow Royal Infirmary. Third edition. London: Baillière, Tindall, and Cox. 1911. Pp. xxii.–1023. Price 15*s.* net.

THE author of this well-known manual has in this new edition thoroughly revised it from beginning to end. Many details have been altered, and extensive additions been made to the subjects of dysentery, syphilis, cardiac arrhythmia, the cerebro-spinal fluid, epidemic anterior poliomyelitis, enteroptosis, certain affections of the skin, and food poisoning. It now offers to the student of medicine an exposition that is thoroughly in accord with the best teaching of the present day. We have before reviewed the work very favourably, and the present edition again is one that can be thoroughly recommended to the student. We shall in this notice lay more stress on the new matter.

Enteric fever is lucidly described, but in the section on the etiology we find no mention of the great epidemic in England caused after the termination of the South African war by the agency of the blankets that had been used by our sick in hospital in South Africa. More stress might also have been laid on the agency of carriers of the disease, such a fruitful source in India of its propagation. Amongst the antiseptic drugs mentioned, that introduced to the profession by Sir Robert Simon, namely, oil of turpentine, is not spoken of. This drug most certainly, in the experience of those who have tried it, improves the pulse and the state of the evacuations, and is also an extremely good prophylactic against intestinal hæmorrhage. The treatment laid down for pneumonia is excellent, especially that with respect to the use of alcohol and strychnine. We would like to have seen some remarks concerning the beneficent use of that old and now too generally discarded remedy, antimony. In

the section on acute rheumatic fever there is no mention of the prophylaxis as regards the supervention of endocarditis advocated by Dr. R. Caton of Liverpool.

Dysentery is in this edition considered more definitely under the heads of bacterial and amœbic dysentery. The post-mortem lesions of the latter form are briefly but well described, as are also the symptoms. The treatment is thoroughly in accordance with the rules of our American *confrères* in that the use of enemata is especially indicated. There are, we notice, certain important omissions in the remarks on the treatment of blackwater fever, which should be remedied in a future edition. Thus no mention is made of Sternberg's mixture of bichloride of mercury and bicarbonate of soda, which has proved of such value at the hands of many physicians, and especially the urgent necessity of giving frequent rectal enemata, six to eight ounces at a time, of normal saline solution, until the hæmoglobinuria ceases. This has certainly proved a most successful treatment. It should be commenced early. The author, in his remarks on syphilis, draws attention to the Wassermann reaction, showing its value as a guide to early treatment, and in the determination in any given case whether specific treatment should be continued or not. He also remarks on the value of the new remedy "606."

In the section on circulatory disorders an excellent diagram is given of the relations of the heart and great vessels to the lungs and thoracic wall. Arrhythmia receives a much more extended notice in this edition than in the last. The researches of Gaskell and James Mackenzie receive due acknowledgment, and the author in his remarks on this symptom has included everything of importance.

The section on abscess of the liver is excellent. The author's remarks are thoroughly up to date. The work of Major Leonard Rogers, so well known in India by his researches on tropical medicine, is recognised; this latter observer has taught us how to diagnose amœbic hepatitis in its pre-suppurative stage, and has reintroduced the treatment by ipecacuanha, advocated by the late Surgeon-General W. C. Maclean. He has also successfully treated in many cases deep-seated abscesses by injecting 30 grains of bihydrochloride of quinine in two ounces of water, after evacuation of the pus by the aspirator.

In the description of epidemic anterior myelitis the author has furnished us with one of his best sections; and in its concise, but at the same time complete, portrayal of the disease the student will find one of the best expositions we know. A new feature of the work is the section on the cerebro-spinal fluid; here the changes in the fluid in disease, the method of puncture, and its value as a therapeutic agent are fully discussed. Finally, amongst other additions to the work we would emphasise the fuller treatment of the subject of enteroptosis and of certain affections of the skin, whilst the whole section on the affections due to food poisoning could not be better described.

By the use of a larger page the author has managed not to make his work too cumbersome despite its valuable additions. It is an excellent treatise.

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*Gynecological Therapeutics.* By S. JERVOIS AARONS, M.D. Edin., M.R.C.P. Lond. With Foreword by Sir J. HALLIDAY CROOM, M.D. Edin., F.R.C.P., F.R.C.S. Edin. London: Baillière, Tindall, and Cox. 1910. Pp. 178. Price 5*s.* net.

IN the opinion of the author, most of the text-books on gynæcology treat of the subject too much from the purely surgical point of view, and he has therefore written this book dealing with the medical aspect of gynæcology, and containing an account of such methods of treatment as he has had personal experience of. The book contains a large amount of practical information of a useful character and a number of prescriptions which cannot fail to be of help to the practitioner.

There are, in our opinion, one or two omissions: thus in the treatment of inversion of the uterus the author, although he mentions the possibility of having to amputate the uterus, says nothing of the various forms of hysterotomy which should, of course, be tried first. The objection raised to the use of a rubber cup-and-stem pessary for prolapse of the uterus does not, we think, hold good; the new form of ring-and-stem rubber pessary is undoubtedly the most comfortable for the patient, and the fact that the stem is pliable prevents the instrument from causing pain if the patient inadvertently sits upon it.

There is a want of order in the arrangement of the book which does not increase its value. Thus, the chapter on Vaccines and Sera is followed by one on Pelvic Peritonitis. The statement on p. 163, that if the uterus of a parous woman be acutely anteflexed the utero-sacral ligaments are shortened by inflammatory infiltration, does not correspond with our clinical experience, nor with the condition of the utero-sacral ligaments as revealed by operation in the majority of these cases. Eau de Cologniensis is a curious term; the only name for this liquid known to us, apart from eau de Cologne, is spiritus Coloniensis.

Dr. Aarons evidently believes in the leverage action of the Hodge pessary. We wish he had attempted to give a satisfactory explanation of the mechanics of such an action, if it exists.

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*Handbuch der Vergleichenden Physiologie.* Herausgegeben von HANS WINTERSTEIN. Band II.: Physiologie des Stoffwechsels (Erste Hälfte); Lieferungen 6, 7, 9, and 13. Band III.: Physiologie der Energieproduktion (Zweite Hälfte); Lieferungen 8, 10, and 11. Band IV.: Physiologie der Reizaufnahme, Reizleitung, und Reizbeantwortung (Erste Hälfte); Lieferung 12. Jena: Gustav Fischer. 1910. Each Lieferung 5 marks, and pp. 160.

THE four parts of Vol. II. deal with the Physiology of Metabolism. It is impossible to do justice to the colossal amount of labour bestowed by Professor Biedermann on such an immense subject. His researches on electrical phenomena manifested by living beings have become classical, so have his researches on colour changes in frogs, and now from the seemingly small—yet important—beginnings on the digestion in the insecta, published some years ago in *Pflüger's Archiv*, we have this magnificent compilation of all that relates to the metabolism, not in one animal, but in all invertebrates, beginning with the lowest. The ripe and extensive knowledge of zoological details, the excellent illustrations of gross and minute structure, and the multifarious types under review, coupled with the careful account of the physiology of the processes of the capture, reception, digestion, and assimilation of food in such a variety of animals, command not only our admiration for the thoroughness of the author's researches into this vast subject, but also for his unwearied perseverance in collecting such a mass of facts as were certainly never before included in any one monograph on metabolism and allied subjects. Professor Biedermann has laid a broad basis for the foundation of the study of the comparative physiology of metabolism. The four parts before us deal with the cœlenterata, including an elaborate account of symbiosis with algæ, both in cœlenterates and in turbellarians. Then follows a graphic account of the nutritive processes in worms in all their varied forms, including a discussion on Bunge's fertile suggestion of the resemblance between the conditions that obtain in the intestine and those in which anaerobic bacteria flourish. Naturally the leech and the earthworm come in for full treatment. As to the latter, regret is expressed that in spite

of the work of Darwin and many other observers we are still very imperfectly informed regarding its digestive activities. The echinoderms are fully treated, and we are glad to see justice done to the excellent work of Preyer and of Jennings. Next follows digestion in the crustacea, spiders, insects, and the wonderful changes that necessarily occur in the digestive organs from the caterpillar to the imago stage. The mollusca, including the cephalopods and the gasteropods, are dealt with in a similarly comprehensive and exhaustive manner. We strongly commend the study of the questions dealt with to zoologists, for Professor Biedermann has linked up the facts of structure with their uses in a manner never before attempted on a scale so wide and so suggestive. Specially interesting is the extensive discussion of the glycogen problem in the mollusca and the varied and important functions performed by the "liver." Towards the end of the thirteenth part the author begins the study of digestion in vertebrates, including fishes, amphibia, and reptiles. To put in another way some idea of the "gründlich" character of Professor Biedermann's contribution we may say that this section has already extended to 1144 pages of text and illustrations.

The first part of Vol. III. deals with all that relates to animal heat. It is from the pen of one of the most distinguished of living physiologists, Robert Tigerstedt of Helsingfors, whose text-book on physiology, originally written in German, has been translated into English. The monograph on heat is, like the succeeding monograph by S. Garten on "The Production of Electricity," a type of what a monograph ought to be. These two contributions will form the storehouse to which most investigators interested in these subjects will refer. To the work of English observers full justice is done, but in dealing with the electrical currents of the eye, long ago investigated by Dewar and McKendrick, it is perhaps a pardonable mistake that the latter name appears as Kendrick (p. 163), although it is correctly given in the literature index (p. 220). The illustrations are of a high order, and are well executed, soft, and pleasant to the eye. A very full account is given of the histology of the electrical organs. Some of the figures are original, and, of course, Ballowitz is largely drawn upon.

The latter half of the tenth and the greater portion of the eleventh part are devoted to the Production of Light. As set forth by Dr. E. Maugold the subject is presented in an attractive essay. It is a far cry from Aristotle to Pflüger, but the mentor of Alexander knew many things, including the fact that under certain conditions dead flesh became luminous. To come to later times, Fabricius ab Aquapendente of Padua observed luminosity for four days in a dead piece of lamb, while Boyle, by means of his air pump, noticed that the light diminished with the withdrawal of air and became brighter on its admission. Molisch, however, in recent years is the chief authority on luminous bacteria. In 1907 28 well-defined species of luminous bacteria were described. The common one on dead meat is Bacterium phosphoreum. There does not seem to be any reference to Sir James Dewar's recent experiments on the effect of very low temperatures on these organisms, though Macfadyean's work is referred to. A systematic account, illustrated by numerous figures, is given of the animals from protozoa upwards which exhibit luminosity, and in those that possess special luminous organs the minute structure of those organs is fully given. The latter half of the memoir is devoted to the peculiarities of the light itself—its colour and spectrum, the conditions of bio-luminescence, and the theory of light production—its relation to heat production, and how it is influenced by various conditions and stimuli, and especially its relation to oxygen. Reproductions of photographs taken by means of luminous bacteria by Molisch are given, but we hardly think that they are as good as those obtained by Professor P. Dubois of Lyons in the well-known instance of the bust of Claude Bernard. The production of light in plants is also included, with over 600 references to the literature. The remaining portion of the eleventh part is devoted to the Physiology of Form, by H. Przibram of Vienna, well known for his researches on the reproduction of organs and his studies in regeneration in animals. Throughout the work maintains its high standard, and must prove a boon to both physiologists and biologists.

Before any one of the four volumes is complete we are introduced to Part 1 of Vol. IV. Here a well-merited reference to the commanding and illuminating results of Sherrington's contributions to the physiology of the sensory receptor fields, as well as to the doctrine of specific energies of Johannes Müller, precedes a general account of the functions of the central nervous system; after which the author, Dr. S. Baglioni of Rome, proceeds to deal with protozoa and plants—regarding both from the point of view of the comparative neurologist. The careful reader will note that the author excludes "reflex-vorgänge"—i.e., reflex processes from the well-known responses that occur on the application of stimuli to plants and lowly animals. He reserves the term "reflex" for processes where a "central organ" is present. Myophanes or myoids are known to exist in stentor and vorticella, but according to Neresheimer there are neurophanes as well, which lie between the contractile fibrils and react differently from the myoid fibrils. The transmission of the excitatory state in plants is chiefly through the fine plasmatic bridges between the adjacent plant cells which seem to make the plant itself a unit.

Hertwig and others long ago showed the presence of a nervous system in certain of the cœlenterates—e.g., Medusæ. The author gives an elaborate account of the phenomenon elicited by the application of noxious and useful stimuli to polyps, such as hyola, and also of the experiments of Loeb on regeneration of parts in cerianthus, the study of tropisms, and the excellent work of Jennings on the movements of the lowest animals—movements which Loeb thought did not imply the presence of a nervous system. There is a full discussion on the function of the nervous system in polyps and actinia and their allies. The classical work of Romanes on Medusæ is fully gone into and so is that of Yerkes on Gonionema. The author quotes liberally from Romanes. Verworn denied the existence of a nervous system in ctenophora, although Nagel postulates its existence. A very full account is given of the nervous system in worms and of the very numerous experiments that have been made on them by Retzius, Friedländer, and Biedermann. The common earthworm is naturally dealt with very fully. Tunicates are next considered and then echinoderms. Here, again, justice is done to the work of Preyer and Romanes. The number of illustrations (17) appears to us rather small for such a mass of text.

Our general appreciation of the work appears abundantly from what has been said.

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*Hook-worm Disease: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment.* By GEORGE DOCK, A.M., M.D., Professor of Medicine; and CHARLES C. BASS, M.D., Instructor of Clinical Microscopy, Tulane University of Louisiana, Medical Department. London: George Keener and Co. 1910. Pp. 250. Price 9s. net.

THE authors of this work rightly say that few diseases surpass uncinariasis in the strangeness of its history, the importance of its ravages, or the theoretic ease of its extinction. Its study in America has shown the heavy load which it can lay upon a country. Largely due to it, a region which should be most fertile lies relatively uncultivated; a population derived from the best colonising blood

ekes out a miserable existence, and is doomed to extinction unless it is soon relieved of the infection.

The affection is in truth widespread, as evidenced by its synonyms expressive of the various countries in which it has been found. The introductory chapter deals with its history, from which we learn it was known as early as the seventeenth century. It occurs in tropical, subtropical, and temperate climates, having been met with from latitude 51° N. to nearly 40° S.; in the tropics it is, quite probably, the chief cause of the so-called tropical anæmia. The chief factors in the existence of hook-worm infection are high temperature and moisture; thus, in the mines of Westphalia the higher the temperature, the greater the percentage of infection, whilst the influence of moisture has been noticed by all who have studied the disease. The authors give a very good and lucid description of the zoological features of the *ankylostoma duodenale* and of the *necator Americanus*. They then pass on to the modes of infection, which are through the mouth directly and through the mouth indirectly by way of the skin, the former being of minor importance, as skin infection is practically the only source of the disease. The reproductive stage of the parasite is reached only in the intestinal canal, where it lays its eggs, which pass out with the fæces, not hatching in the canal on account of lack of oxygen. How enormous is the number of eggs passed with each stool has been shown by Leichtenstern, who estimated the total daily excreted in one of his cases to be over 4,000,000. The requirements for hatching are detailed, amongst which are moisture, shade, and warm temperature. The infection may occur then through the drinking water and food; but the chief important route is through the skin, as shown by Looss in 1898.

The pathological anatomy is well described; in this chapter the question of the causation of the anæmia is considered. This is due in many cases to the loss of blood caused by the sucking of the mucous membrane by the parasites and the subsequent hæmorrhage; but this is not the cause in many other instances, the anæmia here being due to the poisonous products absorbed from the foci of inflammation caused by the parasite in the intestine. The authors then pass on to the symptomatology of hook-worm disease; this chapter is illustrated by some excellent figures. The changes in the blood, the joint pains, the affection of the skin, the symptoms in the respiratory, circulatory, digestive, and genito-urinary systems are all detailed in a lucid manner, as are those of the eyes and nervous system. Then we come to the section concerning the diagnosis, which treats of the examination of the fæces, the description of the eggs and their differentiation from other ova, and the special methods for greater certainty in finding the eggs. Next, in the chapter on prognosis, the mortality is considered, and the effect of intercurrent diseases and complications. The work concludes with the methods of treatment.

As regards prophylaxis, the essential elements are the stopping the danger of infection by exterminating the mature worms in the bodies of human beings, the preventing the growth and existence of larvæ in the places where they develop, and the prevention of infection by larvæ. In considering the treatment of the hook-worm in the intestine the best way of administering thymol is entered into, and the symptoms of intoxication by this drug and their counteraction are detailed. Amongst other drugs that have been recommended are beta naphthol, oleoresin of male fern, eucalyptus oil, podophyllin, kerosene oil, and guaiacol carbonate, whilst stress is laid on the importance of the general treatment of the anæmia induced by this disease.

This treatise on hook-worm disease is the most comprehensive account of the affection that has yet been published, and we congratulate the authors upon a valuable piece of work.

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*Argentina: Past and Present.* By W. H. KOEBEL. Illustrated. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1910. Pp. 455. Price 12*s.* 6*d.* net.

As a boundless field wherein the great synthetic processes producing man's vegetable and animal food are peculiarly favoured, the Argentine may well deserve the attention of the medical profession. There is not the least doubt that Argentina is going to be one of the most prolific producers of the meat and wheat supply of the world. Already the exportation of these foods to this country has reached a very large scale, and the time when fodder and cereals can no longer be grown in the Argentine under the present highly economical conditions must be very far distant. This fact connotes a country of vast plains of grass and well-watered areas, and the traveller who expects to find in the Argentine a physiographically interesting country will be deeply disappointed. It is an ocean of grass with its levels as unrelieved as the sea itself. It rejoices, however, in uninterrupted sunshine for the most part of the year, and the air is peculiarly exhilarating, being apparently endowed with an aseptic property which gives it a healthy and healing power. "Qué buenos aires son los de este suelo!" (What fine air there is in this country!) is said to have been the exclamation by the first man who stepped ashore at the mouth of the River Plate. Occasionally the country is visited with serious droughts, but on the whole it is more fortunate in this respect than many other pastoral countries. There is no record of a rainless spell, at all events, which has ended in total calamity, and although the quite recent visitation was severe it has at length broken up. Another enemy to be dealt with is the locust whose ravages every year increase in severity. Mr. Koebel has written a very interesting account of this country which, with the successful applications of science, has such a future before it. He has followed tracks with which the reviewer is familiar, who has found therefore peculiar pleasure in reading the details of the narrative, which are accurate and picturesquely set out. The history and ethnology of the people are not the least interesting part of the book; there are some charming stories of the peones, estancieros, the gauchos, and so forth, and the account of the great industrial developments which threaten to reach colossal dimensions is full of interest. "The Story of the Pastures" has given us particular pleasure in reading. Equally well described are the doings in the camps. The book will appeal not only to the reader who may anticipate a visit to the Argentine or who may happen to have been there, but to the reader who takes a general interest in the development of new countries.

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*Andreas Vesalius: The Reformer of Anatomy.* By JAMES MOORES BALL, M.D. Saint Louis: Medical Science Press. 1910. Pp. 149. Price $5.

THIS is a book that will delight the heart of the bibliophile as well as the eye of the artist and the soul of the medical antiquary. Basing his work on Roth's "Andreas Vesalius Bruxellensis," Berlin, 1892, Dr. Moores Ball, a medical antiquary of zeal tempered with discrimination, has produced a volume rich with the fruits of personal research. The setting is worthy of the contents. It is printed on heavy tinted Normandy vellum that shows up the type and the engravings admirably. There are upwards of 50 illustrations, reproduced from the original publications of Vesalius or from the works of preceding anatomists. The frontispiece is a sepia-tinted photogravure of Vesalius, and there is also a reproduction from an ancient copper-plate portrait of him.

The scope of the book is wide. It begins with an

introduction to the history of medicine, particularly dwelling on the period of the Renaissance. After briefly tracing the study of anatomy from Egypt and Greece to the time of Frederick II., Dr. Ball devotes a chapter to Mondino and his "Anathomia," first printed at Pavia in 1478, and another chapter to the successors of Mondino, of lesser fame, of whom, perhaps, Berengarius is the most widely known. Then we are introduced to the early life of Vesalius, who was born in Brussels on Dec. 31st, 1514, of a family in which medical learning was traditional; for his great-great-grandfather Peter, his great-grandfather John, his grandfather Eberhard, and his father Andreas, were all accomplished in the field of letters and in medicine. But in addition to the influence of paternal heredity his mother's fostering care also undoubtedly exercised considerable influence in the formation of his career, as is so often the case with great men. Dr. Ball follows in successive chapters the career of Vesalius at Louvain, his studies in Paris and Venice, his graduation at Padua in December, 1637, and his work there as the occupant of the first purely anatomical chair ever instituted. In the next chapters the literary labours of Vesalius are closely followed, his "Tabulæ Anatomicæ," the "De Humani Corporis Fabrica" (his greatest work), and the Epitome thereof. The contents of the "Fabrica" are reviewed in some detail, and the conclusion is formulated that although this great work contains many errors that a tyro of the present day would laugh at, it laid the foundations of our knowledge. Vesalius overthrew the idol of authority in anatomy and taught us to look at Nature with our own eyes. Two chapters follow respectively on the Contemporary Anatomists of Vesalius and on his Commentators and Plagiarists; while the book closes with an account of his abandonment of the scientific career in disgust at the jealous opposition he experienced, particularly at the hands of his former pupil and friend, Columbus Realdus; of his career as archiatros to the Emperor Charles V. of Spain; of his pilgrimage to Jerusalem, and his shipwreck and death.

Dr. Ball has given us more than a mere account of Vesalius: it is a scholarly *résumé* of the history of medicine of the period. A glance at the copious index will show how many personages, great and small, appear in the course of the book, and of these quite a number receive a biographical sketch of their own.

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*Logic for the Million.* Edited by T. SHARPER KNOWLSON. London: T. Werner Laurie. 1911. Pp. 248. Price 6*s.* net.

WITH all due respect to the great Herbert Spencer—whom the author of the present book, in his introduction thereto, quotes as having expressed himself in the following terms: "I have at no time paid the least attention to formal logic, and hold for all practical purposes it is useless"—a capacity to reason correctly is at the bottom of man's successful evolution above his fellow animals. But for this faculty being to some extent inherent, man could never have survived in the earliest ages against other animals better equipped than he for the struggle with Nature. The displacement of logic from the educational curriculum is in part due to the irksomeness of the cut-and-dried methods of the schools, and in part to the fashion of referring all reasoning to the arbitrament of "common sense." Now, common sense acts well enough in reasoning when the value of all the terms is known, but when a term of the attributes of which we are ignorant comes into play "common sense" becomes powerless to keep a check upon the result of our reasoning, the correctness of which must consequently depend on our capacity to test the validity of our statement of the relations between given propositions, as we test the validity of our arithmetical or algebraical propositions, by abstract rules. To all scientists, therefore, among whom in some degree must be classed all medical men, a knowledge of the principles of logic is as necessary as a knowledge of arithmetic to accountants. Logic has been belittled as a musty mediæval study—a conclusion based on reasoning that is itself incorrect; for this belittling has its basis mainly on the exploitation of sleight-of-mind tricks in the disputations of the schools, so that the attribute of a part or aspect has been unwarrantably ascribed to the whole. Thus the arguments adduced to show the uselessness of the study of logic really demonstrate the necessity for it.

The author aims to bring the science of reasoning out of the atmosphere of the class-room into the arena of daily life by using as illustrations of logical principles arguments from old and new writers and from the political and social discussions of the age, and by devoting attention to concrete cases, reviewing them in the light of facts as we know them instead of confining himself to the formal relations of series of abstract propositions. He is at his best, perhaps, when he illustrates the various ways in which, in ordinary parlance, we are accustomed to express ideas and to form judgments, such as constitute the subject, in most treatises on formal logic, of the various modes of syllogistic argument, and when he translates the formal syllogistic rules into self-explanatory propositions in the language of the "man in the street." Mr. Knowlson is to be commended for this new edition, very largely rewritten, of an old book. We think, however, that some injustice is done to the author of the original book, Mr. J. W. Gilbart, F.R.S., whose fourth edition of "Logic for the Million," dated 1854, lies before us; for we cannot consider that his authorship is even suggested, not to say acknowledged, by the statement on the title-page that the book is "edited" by T. Sharper Knowlson, or by the brief mention in the preface wherein Mr. Knowlson tells us what he, "following the lead of J. W. Gilbart F.R.S.," has endeavoured to do.

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## LIBRARY TABLE.

*Darwin and the Humanities.* (The Ethical Library.) By JAMES MARK BALDWIN, D.Sc., LL.D., Foreign Correspondent of the Institute of France. Second edition. London: Swan Sonnenschein and Co., Limited. 1910. Pp. 125. Price 3*s.*—The vital and transforming influence of the Darwinian theory of natural selection—which the author thinks might with entire appropriateness be called "Wallaceism"—on the biological sciences, as well as its influence on the spirit and methods of scientific inquiry generally, is well known and admitted. The corresponding influence of Darwin and the growth of Darwinism in the sciences of the Humanities has been but scantily traced out and recorded. In this booklet—which had its origin in a paper by the author on "The Influence of Darwin on the Mental and Moral Sciences"—the author proceeds to give a terse account of the influence of Darwinism on psychology, ethics, and sociology, and on the more general topics of logic, scientific method, philosophy, and religion. The author expresses the view that possibly the work may be found clearer and more effective from its brief and succinct mode of presentation. It is just possible that to the average reader the presentation is too "succinct." As an example of the succinct we may quote the author's reply to the question, What is natural selection? Simply the fact that "*some creatures survive and propagate their kind when others of the same kind cannot. That is all.*" To illustrate how so simple a fact can be of such consequence that the mere recognition of it amounts to a theory of evolution and establishes a great principle in science, the author

deals shortly with (1) over-production with variation; (2) struggle for existence; (3) survival of the fittest (H. Spencer's phrase); and (4) inheritance of inborn characters. He then proceeds to measure the influence of Darwin in psychology, and he begins with the vexed question of the rise of the animal instincts. Leaving aside the account of Weismann's view on "intra-selection," he boldly deals with plasticity and mind, and the progress made by the brain in mammals—the organ of increasing plasticity and educability. Its evolution is correlated with the decline of the instinctive and completely congenital functions. Next he deals with the utility of mind or the intelligent type of function, and then discusses heredity, physical and social, and the importance of gregariousness, play, and imitation. He thinks that Huxley failed to grasp how morality could be explained on Darwinian principles, for according to Huxley in our moral sense we have a principle of altruism and a rule of conduct that directly contravenes the principle of "struggle for existence." On the contrary, according to our author, "Morality has arisen because it is socially useful; that is the Darwinian account." The other chapters deal with logic, philosophy, and religion. The author makes out a strong case for his contention. It is a work which requires accurate thinking and keen logical acumen to grasp at the first reading, especially to those not well versed in modern problems of Darwinism and Philosophy. The work is dedicated to Alfred Russel Wallace, whose interest extends to all the Humanities.

*Forbidden Fruit for Young Men.* By Lieutenant-Colonel SETON CHURCHILL. Eighth edition. London: James Nisbet and Co., Limited. Pp. 269.—A book which has reached its eighth edition speaks for itself, and we can say in addition that the difficult subject with which Colonel Seton Churchill deals is treated with dignity, plain speaking, and the necessary reticence. Ignorance combined with natural curiosity is perhaps the most powerful stimulus to sexual licence and the evils which flow therefrom. This book gives the necessary instruction in a manly and simple fashion, and we can imagine no book from which a father might instruct his child better as regards the all-important [illegible] matters with which it deals.

*The Valley of Achor.* By Mrs. PHILIP CHAMPION DE CRESPIGNY. London: Mills and Boon, Limited. Pp. 331. Price 6*s*.—To any reader who likes an exciting story and who does not mind obvious absurdities we recommend this book. One of the protagonists, young, clean shaven, and a Fellow of the Royal Society, is a student of infectious disease peculiar to the tropics, and has come to the conclusion that the germs of probably all tropical diseases have intermediary hosts for development before arriving at maturity. Mrs. De Crespigny here reminds her readers that the "tsetse fly and mosquito as intermediary hosts in the case of creeping (*sic*) sickness and yellow fever were already well known to science." The other protagonist is wrecked in the Bay of Biscay and is picked up by a passing fishing vessel, a "little schooner," which eventually landed him at La Guayra, which we find to be a port on the north coast of Venezuela. From here to the Bay of Biscay is a long way for a little fishing schooner to go. Accompanied by his servant, who had also been picked up, the wrecked man then explores the basin of the Amazon and is rewarded by the discovery of a white nation. He comes home, is fêted so much so that we are told that it is nearly certain that Oxford will make him an LL.D.! Then a rumour gets about that he has never been in South America at all, but his character is triumphantly cleared by the other protagonist, who demonstrates a parasite in his blood (Hepatozoon perniciosum) which had only been found hitherto in rats and mites in South America. Despite its absurdities, the story is quite a good one.

## JOURNALS AND MAGAZINES.

### NEW MEDICAL JOURNALS.

*The North of England Clinical Journal*, the organ of the Newcastle-upon-Tyne Clinical Society. Vol. I., No. 1, Jan., 1911. Newcastle-on-Tyne: 24, Eldon-square. Price 1*s*.

*The Canadian Medical Association Journal.* Vol. I., No. 1, January, 1911. Toronto: Morang and Co., Limited. Price $5 a year; single copies, 50 cents.

*Aesculape.* Revue Mensuelle Illustrée, Médecine, Chirurgie, Pharmacie, Science, Lettres, Arts, dans leurs rapports avec la Médecine. Vol. I., No. 1, January, 1911. Paris: A. Rouzaud. Price 1.50 francs (abroad 2 francs). Subscriptions yearly 20 francs (abroad 25 francs).

*Répertoire de Médecine Internationale.* Revue et Revue des Revues. Vol. I., No. 1, January, 1911. Paris: Jules Rousset. Price 10 francs (abroad 14 francs) yearly; single copies, 1 franc.

Four new medical journals have this year made their appearance on our table, two in English and two in French. *The North of England Clinical Journal* is the organ of the Newcastle-upon-Tyne Clinical Society. It is to be issued quarterly under the editorship of Mr. George Foggin, aided by an editorial committee. It contains an address on the Menopause, by Sir J. Halliday Croom; the presidential address of Dr. E. Napier Burnett on Obstetrics in Relationship to some of the Allied Sciences; an illustrated article on the Pathology of Lymphadenoma, by Dr. Stuart McDonald; and papers on the Treatment of Certain Skin Diseases by Carbonic Acid Snow, by Dr. D. Wells Patterson; a record of the Year's Progress in Public Health, by Dr. Harold Kerr; the inevitable Ehrlich-Hata "606," by Dr. Herbert J. Slade; A Case of Actinomycosis, by Dr. T. M. Allison; and Some Notes on Clinical Cases and Pathological Specimens. This first issue gives promise that it will perform a useful function.

Our Canadian brethren are also putting out a very [illegible]able journal, *The Canadian Medical Association Journal*, published in Toronto, under the editor[illegible]ship of Dr. Andrew Macphail. It contains seven [illegible]ginal articles (one, of course, on "606"), including the opening address of the Medical Faculty at the University of Liverpool, by Professor Macallum of Toronto, and an interesting paper by Dr. James R. Goodall and Dr. L. C. Conn, in which they lay stress on the coincidence noted repeatedly by the former of the concurrence of lipomata with malignant disease of the thyroid, and suggest a causal relation between them. We feel strongly in sympathy with the writer of the editorial article on style in medical writing.

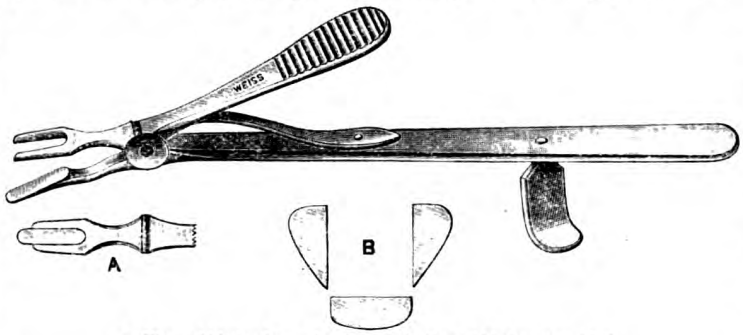
*Aesculape* is a monthly illustrated magazine of medicine, surgery, and pharmacy, published in Paris. It aims to claim proper recognition for the work of the Græco-Latin peoples in Europe and America, which apparently, in its opinion, does not receive an adequate share of credit. It contains many well-illustrated articles of interest, some of them, as for instance that on the "*Survie de la pensée chez les décapités*," having an antiquarian flavour. "606," of course, is the "*question du jour*."

Finally, the *Répertoire de Médecine Internationale* strikes out a novel line for itself. It is divided into three parts, the first of which contains original articles, the last is devoted to professional matters and bibliography, while the intermediate portion consists of at least 60 pages of "loose leaf" abstracts from the medical journals of the world, grouped into 28 classes by subjects, so that they can be filed away after the fashion of the well-known vertical filing system, to form a constantly expanding text-book of medical progress. Section XII., Venereal Diseases, is, of course, largely occupied with "606." The editor is Dr. F. Louis Hahn, chief bibliothécaire of the Paris Faculty of Medicine. We should like these abstract tablets better if the one-third space at the bottom were left vacant for notes in place of being allotted to advertisements.

# New Inventions.

## TWIN SCISSORS FOR SCLEROTOMY (HERBERT'S OPERATION).

THE instrument shown in the figure is designed to facilitate the performance of Herbert's operation of sclerotomy for the relief of chronic glaucoma. The idea in view has been to reduce the difficulty and time involved in making the two lateral cuts for the valve-like scleral flap which is the feature of this valuable operation. The instrument has been modelled upon the plan and does the work of two pairs of scissors, so that it has been called "twin scissors." It makes, on the gradual and shearing approximation of its blades, two parallel cuts, each 4 mm. in length, and separated from each other by 3 mm. In appearance it is something like a needle-holder, but the blades are different. The lower or male blade is flat and bevelled, so that each side presents a sharp edge; its free end is rounded and blunt and projects 2 mm. beyond the female blades. The upper or female blades are a pair of parallel sharply bevelled blades springing from a common stump. When the handles of the scissors are closed the female blades shear down on the sides of the male blade and come to rest, overlapping it (A). The instrument shown has been used for operating on four human eyes with successful results; it was then used to cut sheep's eyes, rubber sheeting, cloth, and paper until the keenness of the blades was dulled, then it was successfully sharpened.




A. View of blades from above. B. Section of blades magnified.

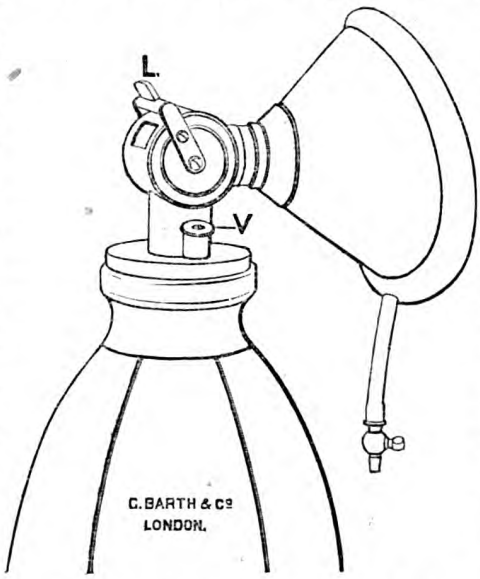
The lower handle of the instrument has a novelty in the provision of a finger plate, which, being slipped between the second and ring fingers at the joint of the end phalanges, gives a very steady and easy grip of the scissors. In cutting with the scissors it is essential to press the handles together evenly; if a lateral thrust be imparted to them the necessary fractional play of the hinge will allow one or other of the female blades to engage its side of the male blade too firmly and perhaps check the cut; if the lower handle of the twin scissors be operated by the ends of the fingers, just as in using ordinary scissors, the cutting will be easy and even. Trial cuts with the scissors should be made on rubber sheeting, but not on paper or card. In operating with the instrument I have found it convenient to first turn forward a flap of conjunctiva from the chosen site of the sclerotomy; then the keratome is inserted into the sclerotic 4 mm. from the clear corneal margin and passed through and under the sclerotic until its point appears within the corneo-iridic angle; it is pushed on until a clear 3 mm. of the blade is within the anterior chamber; the keratome is then withdrawn. Now the male blade of the twin scissors is pushed along the track of the wound until the projecting 2 mm. of the blades shows within the anterior chamber, the scissors are then closed, the cuts made, the male blade gently withdrawn, and with the replacement of the conjunctival flap the operation is complete. In the four eyes operated with this instrument eserine was used subsequently for three days.

The twin scissors are made by Messrs. John Weiss and Son of London.

N. BISHOP HARMAN, F.R.C.S. Eng.
Harley-street, W.

## AN IMPROVED ETHYL CHLORIDE INHALER.

HAVING been required lately to administer ethyl chloride to children in considerable numbers I could not help being struck with the difficulty of "filling" the bag—i.e., of getting sufficient air into it to dilute the ethyl chloride vapour to the required degree, and to allow the patient as the breathing deepened with narcosis to take a full breath without entirely emptying the bag, and so getting the full dose of the anæsthetic in one inspiration—a really dangerous occurrence. I therefore devised a two-way cock to be placed between the face-piece and the bag, by means of which the first few breaths of the patient can be turned into the bag until it is sufficiently filled, and then, by drawing a lever, L, up towards the face-piece, the valve can be cut out and re-breathing permitted. In this way, too, the first breath or so which the patient takes after the face-piece has been applied is of air—a factor of some importance in restoring the confidence of very nervous patients and so conducing to a better anæsthesia. The ethyl chloride is sprayed directly into the bag, and in order that this may be done easily I have had a small valve, V, placed on the collar which supports the bag. This valve opens when the nozzle of the ethyl chloride tube is pressed against it, and closes automatically immediately the nozzle is withdrawn, a tube below carrying the discharge well away from the face-piece. The ethyl chloride may be sprayed into the bag either before it is applied to the patient's face, the valve practically preventing any escape until it is turned into the position for re-breathing, or it may be sprayed in while the patient is filling the bag, or added in divided doses as narcosis deepens—the method which I prefer. The apparatus has been made for me by Messrs. Barth and Co., and I have now given it a trial in over 100 cases (20 adults, with only one case of retching afterwards, and 90 children, with three cases of retching, two having to be detained about three-quarters of an hour owing to their feeling "faint and sick"). In no case was there any difficulty or hitch during the induction, the operation, or the recovery of consciousness.




C. J. LOOSELY, M.R.C.S. Eng., L.R.C.P. Lond.,
Anæsthetist to the Hospital for Sick Children, Great Ormond-street, &c.
New Cavendish-street, W.

# THE LANCET.

*LONDON: SATURDAY, MARCH 4, 1911.*


## The Immunity Reaction in Diagnosis.

THE study of the various aspects of the complex responses on the part of animal organisms to bacterial and other infections, which are collectively classed as immunity reactions, is constantly enriching practical medicine with new and valuable methods of diagnosis and with specific forms of treatment. In regard to diagnosis alone a vast amount of laborious experimental work has been carried out during the past few years, and as a result numerous methods have been tentatively introduced to be replaced by more accurate and more specific tests as our knowledge has advanced. Some of these immunity reactions, such as the agglutination phenomenon, of which WIDAL'S well-known test is the type, and the Bordet-Gengou reaction, depending upon the deviation of complement by the combination of an antigen and its specific antibody, are of very general applicability and have become established as more or less routine diagnostic procedures. Other methods are more complex or less easily carried out, and are as yet largely restricted to scientific laboratory investigations. An interesting, intelligible, and useful account of these applications of the processes comprised under the term "immunity" has been given by Dr. W. D'ESTE EMERY in the Hunterian lectures delivered before the Royal College of Surgeons of England on Feb. 6th and 8th and published in THE LANCET of Feb. 25th and in our present issue. Dr. EMERY discussed briefly the general mechanisms of hypersensitiveness and immunity, and then illustrated the application of the general principles by detailed reference to the newer methods of diagnosis of tuberculosis and syphilis. The value of his review of this important subject is greatly increased by the practical and utilitarian standpoint from which he has approached it, and also by the record of his own personal experience with the ordinary methods and with special modifications devised and introduced by himself. Dr. EMERY pointed out the important fact which recent researches have established, that the response to an infective agent comprises, not only processes tending to increase the protective or defensive agencies, but also others tending to render the body more susceptible or sensitive to the infective agent or its products. This increased susceptibility or anaphylaxis, the most familiar instance of which is the "serum disease" which sometimes occurs after injections of antitoxic sera for diphtheria, it now appears is an essential feature in the bodily response to infection and to invasion of the tissue fluids by alien proteins or antigens. It forms the basis of the tuberculin and mallein reactions, since it is only after sensitisation to these substances by previous injection or by a pre-existent lesion that the specific reactions occur. It is therefore important to recognise that this hypersusceptibility or anaphylaxis is as much specific as the more obvious and protective immunity. The exact relations existing between the two processes are as yet obscure, but, as Dr. EMERY pointed out, they may coexist, and a clear and unequivocal demonstration of either of them is definite proof of an infection, present or past.

In regard to tuberculosis, the application of these fundamental processes to diagnosis is a difficult one, at any rate in adults, partly owing to the nature of the tubercle bacillus, which is less easy to work with than many other organisms, but more particularly owing to the fact, now so generally recognised, that the great majority of adults have been exposed to infection and have acquired some degree of immunity to this organism. Dr. EMERY suggests that almost everybody is constantly being unsuspectedly vaccinated against the tubercle bacillus through the alimentary canal and the respiratory organs. Although we need not necessarily subscribe to this dictum, it is none the less certain that many forms of the tuberculin reaction, such as VON PIRQUET'S cuti-reaction, which may be useful in young children, are practically valueless in adults, owing to the fact that they are given by a large proportion of apparently normal persons owing to the partial immunity they have acquired. What is wanted for practical purposes is a reaction which shall demonstrate the presence of a specific lesion and its activity. Dr. EMERY went on to study the various methods which have been introduced for diagnostic purposes, depending upon the presence of specific antibodies in the serum—that is, upon a qualitative and quantitative study of the more definitely protective substances formed in response to infection—viz., antitoxins, precipitins, agglutinins, cytolysins, and opsonins, although he confessed to some hesitation in including the last-named substances among the antibodies, but only for technical reasons which do not affect their practical utility. Tests based upon the development of an antitoxin for tuberculous toxin, or of a precipitin for the protoplasm of tubercle bacilli, are rather of theoretical interest than of practical value, while little, if anything, is known of a bacteriolysin for this organism. The agglutinin reaction has, however, been used by various observers, but the difficulties encountered are such as to prevent its general application; moreover, the results obtained are not sufficiently characteristic to be of great diagnostic value, since, as Dr. EMERY stated, a case may progress from start to finish without showing the presence of agglutinin in the blood. The value of the opsonic index in diagnosis has been much debated, and it is now generally admitted that a single determination is only of value if it fall considerably outside the somewhat wide normal limits allowed for this index. A comparison of the results before and after exercise, massage of a local lesion, or injection of tuberculin is of much more value if the technique can be relied on. Certain methods have been introduced having as their object the estimation of the total antibodies. The first of these is the so-called meiostagmin reaction, which depends upon the lowering of surface tension occurring when an antibody and its corresponding antigen have been incubated together for two hours. The other method is the well-known Bordet-Gengou

reaction, depending upon deviation of complement by an antigen and amboceptor combination, red corpuscles specially sensitised by the addition of a specific hæmolytic amboceptor being used as the indicator. Reactions obtained by this method have given somewhat variable results, and Dr. EMERY maintained that since these antibodies for tubercle bacilli may be present in apparently healthy persons any method of studying them to be of use practically must be a quantitative one. He claimed to have discovered a comparatively simple modification of the Bordet-Gengou reaction for this purpose. He found that the absorption of complement in this reaction is on the average much shorter with serums from tuberculous patients than with those from normal persons. His method, therefore, consists in the determination of the "absorption time" of complement by these serums in the presence of the antigen, which is a standard emulsion of tubercle bacilli. The indicator is the usual emulsion of sensitised red blood corpuscles, and the absence of hæmolysis is the index of absorption of the complement. The technical details were fully described by Dr. EMERY and can be studied in his lecture. It is with the results obtained that we are more particularly concerned. In 34 cases of diseases other than tuberculosis and of healthy persons the average absorption time was 18·1 minutes, the maximum being 35 and the minimum 2·5. In tuberculous patients the absorption time was as a rule greatly diminished, the average being 7·4 minutes. Absorption times of less than 2·5 minutes were obtained in 25 out of 56 tuberculous serums examined. If this time be regarded as the criterion the test was obtained in 44·6 per cent. of tuberculous and in 8·8 per cent. of non-tuberculous. It is obvious, therefore, that this test is not absolute; moreover, tuberculous cases do not always give a shortened absorption time, and may indeed give a lengthened one, more particularly in the negative phase after inoculation with tuberculin. Some observations made upon this negative phase seemed to indicate that it was not due to, or at any rate not entirely due to, a diminution in the amount of antibodies in the blood, but more probably to a substance inhibiting the union of the antigen, amboceptor, and complement. Dr. EMERY'S method has therefore already proved of value, and we may endorse the plea which he urges for more careful investigation of the presence of antibodies in the blood in tuberculous diseases and of their quantities as likely to afford help in diagnosis, prognosis, and treatment. The bacteriological diagnosis of this disease is still far from satisfactory, and in view of the great importance of early recognition of cases of tuberculous disease we welcome any researches tending to further this aim.

The second of these lectures was devoted to a consideration of the nature of the Wassermann reaction, with a description of a simple quantitative modification already published by Dr. EMERY in THE LANCET.[1] The original Wassermann reaction is a special application of the general Bordet-Gengou phenomenon, and was indeed one of its early applications to diagnosis. It is, however, of interest to notice that recent work has demonstrated that the substance in the serum of syphilitic patients which gives the reaction is not a true antibody, and is, moreover, not specific, since it occurs in other diseases and in normal serums. The characteristic feature of the substance in syphilis is its presence in excess; hence the great importance of a quantitative method of applying the test. The explanation of the Wassermann reaction must necessarily be different from the ordinary instances of the Bordet-Gengou phenomenon where a specific antibody and antigen are concerned, and with this and other theoretical considerations Dr. EMERY dealt at some length. Into the details of his own method it is not necessary to enter; the advantages claimed for it are its simplicity and the ease with which it can be applied quantitatively. He concluded with some useful information regarding the results of the test and its diagnostic and prognostic indications. In the early part of the primary stage a negative result is of no value, but a positive reaction may be expected if the supposed chancre has been present for six weeks or more. Children and adults with hereditary syphilis as a rule give very strong reactions. In the later stages of the disease it may be stated that if the reaction is present the patient is not cured and a continuation of treatment is advisable. If there is no reaction it is more difficult to decide, since cases are stated to occur in which no reaction is obtainable at any time; but if a reaction has been present at one time, and it is subsequently found to be absent, the probability of cure is great, but it must be remembered that mercury itself inhibits the reaction, so that a negative reaction while the patient is under mercurial treatment is not to be taken as evidence of cure. Dr. EMERY'S lectures are an interesting practical contribution to our knowledge of an important subject and will repay careful perusal.

[1] THE LANCET, Sept. 3rd, 1910, p. 732.

## Psychological Medicine and Social Problems.

MEDICAL pluralism is an institution which finds a good many critics nowadays, but even those who are loudest in its dispraise will admit that it may sometimes have compensatory advantages when it affords to a competent observer an opportunity of seeing at once several different aspects of a complex and many-sided problem. How much such an opportunity, wisely used, may contribute to clarifying and defining our views on a question of great present importance is strikingly shown in a very interesting volume recently published by Dr. HELENEFRIEDERIKE STELZNER under the title of "Die Psychopathischen Konstitutionen und ihre Sociologische Bedeutung" (Berlin, KARGER, 1911). Fräulein STELZNER is a pupil of Professor ZIEHEN, and she adopts that alienist's well-known views regarding the characteristics and position of those cases of mental abnormality which he includes under the title of "Psychopathische Konstitutionen," a group of not very clearly defined limits which corresponds perhaps most nearly in our phraseology to the "borderland cases" so inimitably described by MAUDSLEY. Individuals belonging to this class, by reason of their incapacity for social adaptation, come into conflict with their environment at many different points, and so form an element, and a very disturbing element, in

many different bio-social problems. As varying circumstance determines, they will appear at one time as criminals, at another as lunatics, or, again, as inebriates or vagrants or prostitutes; and the observer who sees them in one and only one of these phases is naturally disposed to exaggerate their tendency to the particular form of anti-social activity which comes into his sphere of observation.

It is the good fortune of Fräulein STELZNER that she is able to take a more comprehensive view, for in addition to her opportunities of studying this morbid temperament in Professor ZIEHEN'S psychiatric clinic at the Charité and in his polyclinic, she can draw on her experience as physician to a reformatory for girls, as school doctor, and as alienist expert to the court for juvenile offenders at Berlin. Her opinions, therefore, are the outcome of an exceptionally wide survey of the question which she discusses; and as many details of that question are engaging attention in this country at present we may learn some useful lessons from her experience. The main conclusion emphasised in her work is that the prevalence of the psychopathic diathesis is very much wider and its importance from a sociological point of view very much greater than it has been customary to assume. As becomes a pupil of Professor ZIEHEN, Fräulein STELZNER lays much stress on the exact determination of intellectual capacity, relying for this purpose on the methods devised by Professor ZIEHEN and described by him in his "Prinzipien und Methoden der Intelligenzprüfung" (Berlin, 1908). And she maintains that the failure to apply such tests systematically to children who appear backward at school leads to the inclusion of morally deficient and abnormal children in classes for the mentally defective, with results which are fraught with evil both for the borderland cases, which do not receive the appropriate guidance and control that they need, and for the intellectually feeble, who are dominated and corrupted by the quick-witted but unstable and frequently perverse children of the psychopathic group. Instances are, of course, not uncommon where psychopathic symptoms are met with in children who are also intellectually defective, but it appears to be Fräulein STELZNER'S experience that in such cases the intellectual weakness, if at all pronounced, is the practically important factor, so that children of this sort do not need to be segregated from the rest of the weak-minded. Such segregation, on the other hand, is imperatively necessary in the case of the psychopathic children, whose abnormality is shown mainly in the sphere of feeling and impulse. And it is equally important to separate such children from the normal but undisciplined children who, as juvenile offenders, truants, and so forth, form the ordinary population of reformatory schools. The system enforced in these institutions, designed as it is for individuals of normal disposition, is wholly unsuited for the morbid temper of the psychopathic child; not only does it fail to provide the special influences for developing such aptitudes for good as he may possess, but it provokes and stimulates his anti-social tendencies by the restraints of a rigid discipline. The reformatory constitutes, therefore, a peculiarly unfavourable *milieu* for children of this class, and Fräulein STELZNER maintains that such degenerates form a very large proportion of the incorrigibles who, in Germany as in this country, are quoted as evidence of the failure of the reformatory system. What they really show, as the authoress rightly insists, is the absolute necessity of a skilled psychiatric scrutiny of the children whom it is proposed to treat by these reformatory methods.

It would appear that the unwillingness to recognise the rôle of the psychologist in matters of reformatory education is not confined to Great Britain, though the reactionary tendency may not perhaps be shown in quite such an aggravated form in other countries as it is with us. The very fact, indeed, that a trained alienist like Fräulein STELZNER is attached as expert to the juvenile court of Berlin suggests a very instructive comparison with the attitude of our legislators, who, when they recently established juvenile courts by the Children Act of 1908, never, of course, entertained the idea that the mental condition of the youthful offender ought to be taken into account in determining the best method of treating him. Meanwhile, it is interesting to note that the experience gained in countries where it is considered worth while to make this question a matter of skilled investigation has found out, as Fräulein STELZNER tells us, one important reason why reformatories so frequently fail to reform. Fräulein STELZNER'S conviction on this point is, indeed, so strong that she does not hesitate to express the opinion that the whole elaborate and expensive machinery of juvenile courts, probationary supervision, rescue homes, and reformatories will prove very largely futile so long as no provision is made for the detection and segregation of these special types of mentally abnormal children. This is a view which ought to be carefully considered by the responsible authorities who will have to organise those larger schemes for the treatment of the feeble-minded and socially detrimental classes which are supposed to be contemplated in the legislation of the near future.

## Thomas *v.* Barker.

THE action of THOMAS *v.* BARKER, which occupied Mr. Justice DARLING and a special jury for three days of last week and resulted in a verdict for the plaintiff with 20 guineas damages, has brought to the most satisfactory of all possible tests the claim which has been brought forward, by or on behalf of the defendant, to be the discoverer of methods of manipulating diseased or injured joints which are unknown to members of the surgical profession, and to be able, by the employment of these methods, to effect cures in cases in which the best surgical skill has failed. Mr. H. A. BARKER has for nearly 20 years, we understand from Mr. W. T. STEAD'S pronouncements, carried on business as what is called a "bone-setter," and appears, like many other medically unqualified claimants to the possession of exceptional skill, to have enjoyed the confidence of a large *clientèle*. The comfortable position thus attained, however, was regarded as incommensurate with his merits by Mr. STEAD, a journalist who has from time to time achieved various kinds of notoriety by methods which many persons would have been content to leave unpursued, and who has been conspicuous, among other things, for a general and sympathetic admiration of several varieties of quackery. Mr.

STEAD, in the *Review of Reviews* for October, 1910, devoted eight double-column pages to a eulogium upon Mr. BARKER, in the course of which the public were informed that "in the last 19 years Mr. BARKER has treated by a careful manipulative surgery, without shedding of blood or use of drug, save that necessary for the production of temporary anæsthesia, more than 30,000 cases. These have been selected from a much greater number which have been brought to the great bone-setter for treatment. Of these 30,000 cases about 90 per cent. have been cured, and in almost every case the patient had patiently submitted himself to the best or the worst that the regular doctors could do for his benefit. To put it in round numbers, 27,000 incurable cases—that is to say, incurable according to the recognised methods of the recognised practitioner—have now been proved to be curable." Mr. STEAD'S declared object was to urge that Mr. BARKER'S methods should be reported upon by a committee of surgeons, how to be constituted he did not show.

There can be no doubt that the formation of such a committee, if it had been formed, would have been a very valuable method of bringing Mr. BARKER'S name before the public, while there was then, and still is, grave doubt whether the public is losing anything by the attitude of surgery towards bone-setting. We did not take Mr. STEAD very seriously in our reply to his attack upon ourselves in the course of his article on Mr. BARKER. With elementary manners he had referred to the *British Medical Journal* and ourselves under the respective names of GOG and MAGOG (although we can perceive no manifest reason why those distinguished civic characters should have been dragged into the controversy) and complimented us both with a shower of abuse. We contented ourselves with recalling to mind the completeness with which the nature of the manipulations of successful bone-setters, and the conditions in which these manipulations were useful, had been laid before the medical profession, in the first instance in our columns, by Dr. WHARTON HOOD, more than 40 years ago; and, while admitting that some unqualified bone-setters had been dexterous, and even frequently successful, we expressed a doubt whether Mr. BARKER'S supposed knowledge of anatomy, apparently gained without dissection, but by the perusal of two excellent manuals, could be sufficient to furnish him with safe guidance in his operations. Mr. STEAD was furious. He has discovered in THE LANCET a statement to the effect that manipulative surgery was a neglected corner of the surgical art, and, without mentioning that this was written over 40 years ago in relation to then existing conditions, he now attempts to use it as an admission which we are making to-day, and does so with our article of Oct. 22nd, 1910, staring him in the face and acknowledged by himself with splutterings of abuse in the *Review of Reviews* for November, 1910. Yet in a letter communicated as a sort of circular to the provincial press, and dated Feb. 14th, 1911, we find the statement that we have admitted that "manipulative surgery is a neglected corner of the domain of surgery." When we said this it was the truth; it is not the truth now, and to represent THE LANCET as believing it to be the truth now is a falsehood.

The case of THOMAS v. BARKER displayed Mr. BARKER as a member of a craft which has nothing recondite in its methods, and does nothing useful for which instruction may not be found in the writings of duly qualified practitioners. Mr. BARKER indeed has thrown important light upon his own limitations. A few days before the case of THOMAS v. BARKER came on for trial he wrote a letter to the *Times* in which he said that the vaguest knowledge of etiology or pathology would enable its possessor to distinguish between tuberculous arthritis and simple traumatic adhesions. We doubt whether Mr. BARKER could find a single surgeon who would agree with his dictum in this matter, or who would deny that the diagnosis in question is frequently one of extreme difficulty. We publish in another column a verbatim report of Mr. Justice DARLING'S summing-up in the recent case. Few things can be less satisfactory, from a scientific point of view, than a trial of this kind as it is usually conducted, because it is frequently the aim of counsel rather to obscure than to bring out the truth, and expert witnesses are often prevented from putting the matter before a jury in the most intelligible way. In spite of the difficulties hence arising, the case of Mr. THOMAS was tolerably plain, particularly as put to the jury by the judge. Mr. THOMAS sustained an injury to his knee ten years ago, from which it had never recovered, and before he went to Mr. BARKER it was the seat of tubercle. Notwithstanding its condition, Mr. BARKER caused gas to be administered to the patient and then moved the joint to an extent and in a manner which were matters of dispute. The same thing was done upon a second occasion. The patient appeared to suffer no immediate ill-effect, but soon afterwards became so ill that the surgeons who were then consulted decided upon an immediate amputation of the limb. The joint was totally disorganised, but the plaintiff eventually made a good recovery, and in due time brought his action for the injury which he alleged that he had sustained. It is quite clear that Mr. BARKER was wrong in meddling with a tuberculous joint, but the amount of his interference remains in doubt. Presumably this is why the plaintiff did not obtain larger damages. His 20 guineas will probably not go far towards his costs as between solicitor and client; and hence the case will afford little or no encouragement to the subjects of Mr. BARKER'S failures to take similar proceedings against him. It will, however, we may reasonably hope, render Mr. BARKER more cautious in his future proceedings; for it is not likely that, in any second trial of the same kind, he would be treated by the jury with equal leniency if again convicted of negligence.

INTERNATIONAL CONGRESS OF PATHOLOGY (TURIN).—The Congresso Internazionale dei Patologi in Torino will take place from Oct. 2nd to 5th, 1911, in the Institute of Pathological Anatomy of the University of Turin. The Congress will coincide with the jubilee festivities celebrating the Italian independence. An invitation, dated Feb. 10th, has been issued inviting pathologists to take part in the Congress, and is signed by Professor P. Foà and Professor B. Morpurgo. The offices of the Congress are at the Institute of General Pathology, Corso Raffaello, 30, Turin, Italy.

# Annotations.

"Ne quid nimis."

## NURSING IN THE FEVER HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

ON Jan. 26th there came into force certain important changes affecting the nurses who staff the acute infectious hospitals of the Metropolitan Asylums Board. These alterations are the outcome of prolonged and careful deliberation by a special committee appointed for the purpose of reporting on the possibility of rendering the Board's fever service more attractive to the general body of women who take up nursing as a profession. In the course of its inquiries the committee was assisted by the opinions and advice of the matrons of the principal London general hospitals, and also by the matrons and medical superintendents of the Board's own hospitals. The three grades of nurses employed in the fever hospitals have hitherto been known as charge nurses, assistant nurses (Class I.), and assistant nurses (Class II.). In the acute hospitals they will henceforth be called sisters, staff nurses, and probationers. Sisters will receive a maximum salary of £44 a year as against a maximum of £40 for charge nurses, and will not be required to come on duty until 7.45 A.M. These alterations in the title and conditions of service, together with the prospect of obtaining a certificate of fever training at the end of 12 months' work, should prove an attraction to nurses who have just completed their training in the London general hospitals. Staff nurses will be paid a maximum salary of £30. Candidates who desire to join the Board's service as staff nurses must have had three years' training at a general hospital, Poor-law infirmary, or children's hospital containing at least 70 beds; or they must hold a certificate of fever training. It should be noted that when the new scheme came into operation on Jan. 26th charge nurses and first assistant nurses did not automatically become sisters and staff nurses, but only those who possessed the necessary qualifications and were recommended for promotion by the matrons and medical superintendents. Special consideration was given to the probationer section of the nursing staff, and some most important alterations have been made in the conditions of service in the hope of attracting to the Board's hospitals a larger number of women of good education. Hitherto assistant nurses (Class II.) have been liable to be transferred from one hospital to another, and to be given a month's notice when their services were no longer required, while they were unable to obtain a certificate of fever training. Such conditions were hardly likely to prove acceptable to women who desired to take up nursing as a profession. Under the new scheme a limited number of probationers will be appointed at each hospital who will not be liable to transfer, while if they are considered satisfactory at the end of three months' probation the Board will undertake to retain them in its service until they have completed two years' work. During this time they will be given systematic instruction, both in the lecture room and the wards; and if they pass the examination at the end of their two years' training they will obtain a certificate of proficiency in fever nursing and be eligible for promotion to the grade of staff nurse. These are not inconsiderable inducements to enter as a probationer at one of the Metropolitan Asylum Board's fever hospitals, but there is yet another, and that by no means the least. Certain of the general hospitals have agreed to accept each year from the Metropolitan Asylums Board a fixed number of probationers who have satisfactorily completed two years' fever training, provided they are considered suitable by the matrons of those hospitals. Further, those general hospitals where nurses are required to join for four years have undertaken to count the two years' work under the Board as equivalent to one year's work with them, so that the Board's probationers will join those general hospitals as second year's nurses and be paid accordingly. As they can enter the service of the Metropolitan Asylums Board at the age of 21 it will be possible for them at the age of 26, after five years' work, to hold a certificate of fever training in addition to one of full general training. This attempt to establish a system of coöperative training between fever hospitals and general hospitals will be watched with interest. For the sake of the fever hospitals it is to be hoped that it will prove a success, but in any case the Metropolitan Asylums Board is to be congratulated on its adoption of the scheme to which the special committee, under the guidance of its chairman, Mr. Jackson Hunt, has devoted so much time and consideration.

## WHOLESOME BREAD.

WE have received a number of requests to make an analysis of samples of "standard" bread which have been submitted to us by interested persons. It is quite impossible for us to deal with the multiplicity of applications which have reached us. We approve of standard bread when that expression means simply that the flour used in making the bread is unimpoverished by methods of manufacture—that is to say, when the entire nutritive portions of the wheat berry are retained. In our opinion the husk or the bran should be excluded. Apart altogether from the more appetising qualities of unseparated flours and the more generous proportion of valuable nutritive bodies which they contain, there are also principles in them which favour the assimilation of their constituents, which are absent in the separated flours. The best guides to truly wholesome bread are its peculiarly attractive flavour, which is somewhat sweet, and its colour, which is a dull light brown. Fraudulent imitations consisting merely of separated flour coloured with bran are practically flavourless. We hope that the question, now that it has attracted public attention, will be dealt with thoroughly, as it is obvious that more harm than good may be done by the movement in favour of "standard" bread, unless some security is afforded to the public in regard to procuring a genuine article. We are inclined to believe that the public can protect themselves in this matter, but a Government inquiry might have its uses.

## WHY SURGEONS BECOME SURGEONS.

IT must have occurred to many a medical man, especially when at medical gatherings, to wonder, perhaps half-unconsciously, what influence had determined this person or that into the pursuit of medicine. A little insight into this personal aspect has a genuine fascination. Dr. Francis Reder of St. Louis, with the true American instinct, has displayed the courage of his curiosity as to how it happened that surgeons became surgeons, and addressed letters of inquiry on the point to a number of surgeons—German, Italian, English, and American—who have accomplished things in surgery. He received very cordial and gratifying replies from 39 correspondents, which he appends to the Oration on Surgery delivered by him at the annual meeting of the Missouri State Medical Association in 1910, and published in the journal of that association for November. And very interesting reading the replies are. As will be readily understood, in most cases more than one factor was at work to determine the result. Fifteen (among whom may be named Dr. Roswell Park, Dr. W. W. Keen, Mr. John Chiene, and Mr. J. Bland-Sutton) possessed a natural inclination from childhood, and in six of these (including the Mayo brothers and Mr. Thomas Bryant)

parental example played a part. Admiration of a particular teacher—of Billroth (by Czerny and Hacker), of Langenbeck, Novaro, R. F. Weir, Durante, J. R. Wood, of Czerny (by Steinthal), and of Lister (by H. O. Marcy)—turned the student's bent toward the surgical side of the profession in ten cases, and in two cases admiration of the work done by the family medical attendant played a part. Personal experiences of surgical intervention *in propria persona* influenced three, while two received the impetus towards surgical work through experiences respectively in the Franco-German war and the United States war of the Rebellion. An American surgeon of note (Dr. J. A. Wyeth) confesses to having been prompted by "an ambition to do things that the vast majority of human beings could not do or did not like to undertake," and is of opinion that "surgery requires more courage than I felt it necessary to have to charge a battery or to do dangerous scout duty." We fear that will depend on whether the sense of responsibility to others is more highly developed than that of mere personal safety. Six surgeons own up to the fact that it was just the fortunate concurrence of a special opening in surgery that turned their thoughts in that direction; while six others, among whom are Sir Victor Horsley and Mr. F. F. Burghard, made surgery rather than medicine their choice from a consideration of the greater certainty of the benefits it was capable of conferring, in their opinion, upon humanity and of the more tangible evidence of its results than those of medicine. A natural taste for mechanics impelled two to the surgical side of the profession, while one was impelled to take up surgery through the exigencies of gynæcological work. In many cases it is noticeable that the first trend of the mind towards the medical profession was influenced by natural science studies. Among these is Dr. Howard Kelly, whose further specialisation was determined by the fact that in the "eighties" gynæcology offered a large field for original work and investigation.

## HARDWARE IN THE STOMACH.

FROM time to time there appear in the medical journals extraordinary catalogues of foreign bodies found, usually at necropsy and much less often at operation, within the stomach of an insane person. Our Vienna correspondent this week describes two such cases. That such aggregations should be tolerated by the stomach for long periods of time is surprising enough even when they consist of soft and yielding substances, such as the hair which becomes matted together to form a hair-ball; but when post-mortem examination of a person who has never shown the smallest sign of gastric discomfort discovers within the stomach a multitude of metallic objects, sharp, rigid, difficult to swallow and dangerous to retain, the only possible explanation of such an extraordinary insensitiveness must be found in the fact that the metal-swallower had been demented for years. A truly remarkable instance of this insane propensity is the case of a mulatto woman, aged 33 years, admitted in 1903 to one of the Missouri State hospitals with acute mania, ending in dementia and caused by excess in cocaine and morphia. From this time until September, 1910, when she died in the hospital, she never showed the least sign of disease of the digestive system. The attendants often saw her picking up nails and pins, but no one had seen her swallow any. Death was due to nephritis, and until a week before her death she never refused her food. Dr. A. H. Vandivert and Dr. H. P. Mills, who made the necropsy and reported the case in the *Journal of the American Medical Association* of Jan. 21st, were surprised to find the fundus of the stomach stretched down in a long pouch which reached into the left iliac fossa and adhered to the parietal peritoneum in that region. In this sac lay a hard mass which proved to consist of a large number of foreign bodies, leaving a narrow channel for the transmission of food along the lesser curvature. Adherent to the peritoneum of the stomach was the great omentum, remarkably thickened, and enclosing a number of small abscesses which represented the points at which the foreign bodies had made a way through the wall of the stomach, general peritoneal infection being averted only by the omental adhesion. The mucous membrane of the stomach was atrophic throughout and ulcerated in patches; the submucosa was infiltrated with round cells, and the subserous connective tissue exhibited a general dense fibrosis. Ulcers and widespread erosion were also seen in the mucous membrane of the œsophagus. In addition to the foreign bodies in the stomach there was a needle in the œsophagus and another at the base of the left lung. The foreign bodies in the stomach weighed 2268 grammes (5 pounds avoirdupois) in the aggregate, after thorough washing, and consisted of 453 nails, 42 screws, 136 ordinary pins, 115 hair-pins, 105 safety-pins, 52 carpet tacks, 63 buttons, and a miscellaneous collection of bolts, metal nuts, teaspoon handles, thimbles, needles, beads, coat-rack hooks, fruit seeds, stones and pieces of glass, and all sizes and shapes of similar objects, the total number being 1446. The writers have arranged this scrap-heap in rosette form for purposes of photography, and have thus achieved an extraordinarily vivid picture of the possibilities of the human stomach.

## THE CENTRAL ASSOCIATION FOR THE AID OF DISCHARGED CONVICTS.

Mr. Winston Churchill is to be congratulated upon the initiation of an agency which will have as its duties the direction and coördination of the existing agencies which have hitherto sought to assist and control convicted persons after their discharge from prison. These agencies have worked with good results in some instances, with unavoidable failure in many cases, and with lack of success in others, due to inadequate means at their disposal, to waste of energy and overlapping, and to other causes which the new Central Association is instituted to prevent. They have also endeavoured to carry out a difficult task, which, indeed, might often be described as a hopeless one, without any direct provision for their assistance from the State, for whose benefit their work is done no less than for that of the individuals immediately affected. Under the new scheme a general council is to be formed, composed of two representatives from each of the following bodies—the Royal Society for the Aid of Discharged Prisoners, the Church Army Discharged Prisoners' Aid Society, the Salvation Army Discharged Prisoners' Aid Society, the Catholic Discharged Prisoners' Aid Society, the United Synagogue Discharged Prisoners' Aid Society, and the Borstal Association, under the presidency of the Home Secretary, with Sir E. Ruggles Brise as chairman, Mr. Wemyss Grant Wilson as vice-chairman, and Mr. Basil Thomson as honorary treasurer and secretary. It will be observed that the associations representing various phases of religious thought which have hitherto been associated with this particular branch of charitable effort are rightly represented upon the council, but it may be suggested that the usefulness of the new body would be materially strengthened by the infusion into it of a medical element. In a large proportion of cases those who come under the cognisance of the central agency will owe their position and their need for assistance, control, and supervision as much to defective mentality as to the other causes which contribute to turn potentially good citizens into criminals. There will also be others whose physical condition will have to be closely considered and appreciated before suitable aid can be administered, and the observation of such temporary physical

conditions as may be due to recent experience of prison discipline will form a useful subject of study for which the Central Association will have considerable facilities. The opportunity to investigate the conditions, mental and physical, of convicted persons who have regained their liberty has been enjoyed by the existing agencies but without the additional power to bring them directly to the notice of the Home Office, a power which an association the president of which is the Home Secretary himself must enjoy to the fullest extent. Such investigation could have no useful result unless made officially and independently of prejudice of any kind by men qualified by training and experience to make it. Under the authority of the new association it should be possible to conduct it simultaneously with the exercise of the benevolent object for which that body has been primarily instituted, and with only a limited necessary outlay which would be likely to be recouped in due course to the State by the saving of a proportion of the expenditure caused by recidivism.

## THE CARE OF SICK SAILORS IN GERMANY.

A CONVALESCENT home for German seamen has been built at Zehlendorf in the Grünewald, near Berlin, by a philanthropic association constituted, under the inspiration of the Emperor and Empress, in 1908 with this particular object. Convalescent homes there were for the army and for other professions, but none for the sailors. That has now been changed, for this home will take seamen of the Imperial Navy or of the mercantile marine, as well as soldiers from the colonial or protectorate troops, to the number of 60, and also their officers to the number of 15. Retired and half-pay officers may be received if there is room. No serious cases requiring much attention can be received and no contagious diseases. The accommodation and recreation rooms for men and officers are quite separate; there are smoking and writing rooms for each with all the foreign military and naval papers, and a good library. For their treatment there are douche, steam, and electrical baths, and even a small swimming-bath. There is central heating and electric light throughout. The association has provided the site and the house; the medical treatment and maintenance are secured by a charge of 3*s*. 6*d*. daily for each man, 4*s*. 6*d*. daily for junior, 5*s*. 6*d*. for senior officers. The navy has taken ten beds, and it is hoped the large shipping firms will each similarly annex others. The estate is a forest, of which few trees have had to be sacrificed to the building, and it is hoped that this sanatorium may be of great benefit to those for whom it is planned.

## A HISTORY OF THE CAVENDISH LABORATORY.[1]

AFTER having successfully provided in the years 1864 and 1865 accommodation for the study of zoology, comparative anatomy, human anatomy, chemistry, mineralogy, and botany, the University of Cambridge turned its attention to the needs of the students who wanted instruction in heat, electricity, and magnetism. The prospect of expenses, however, very nearly defeated the good intentions of the syndicate which was formed to this end and which reported in favour of founding a special professorship and of supplying the professor with the means of making his teaching practical. It was not until October, 1870, that the opportunity came for making a real start with the Cavendish Laboratory. The Duke of Devonshire expressed a desire to carry out the recommendation of the syndicate, adding that he would be prepared to provide the funds required for the building and apparatus. Owing to a decision of the heads of the Colleges that the sums required under the Cambridge Improvement Acts should be levied by assessment instead of being charged on the University chest, the already heavy burden upon it was lightened, and amongst the new professorships founded was that of experimental physics, and the first professor of the Cavendish Laboratory, that distinguished physicist James Clerk-Maxwell, was elected on March 8th, 1871. The inaugural lecture was delivered on Oct. 25th in the same year. Clerk-Maxwell was succeeded on his death in 1879 by Lord Rayleigh, who in turn resigned in favour of the present professor, Sir J. J. Thomson, in 1884. In 1909 Sir J. J. Thomson completed the twenty-fifth year of his tenure of the Cavendish professorship, and it was this fact which gave rise to the suggestion by his immediate colleagues that the occasion should be celebrated in some way which would fitly commemorate a tenure so long and so full of achievement. A most interesting volume recording the history of the Cavendish Laboratory has since been issued, and it forms, we think, a very appropriate consummation of the foregoing suggestion. The University of Cambridge may well be proud of the valuable contributions which have been made to physical science as a result of the foundation of its Cavendish Laboratory, and it has been said with truth that perhaps there is no post in the world which has been held successively by three men of such great and such varied genius as Clerk-Maxwell, Rayleigh, and Thomson, who have made the Cavendish Laboratory known throughout the world. The transactions of the learned societies record what valuable work has been done, and it is now most interesting to discover in the book referred to how that work came to be done, in a series of monographs contributed by competent writers like T. C. Fitzpatrick, Arthur Schuster, R. T. Glazebrook, H. F. Newall, E. Rutherford, C. T. Wilson, N. R. Campbell, L. R. Wilberforce, and the present professor himself. The history is a splendid record of scientific work and education.

[1] A History of the Cavendish Laboratory, 1871–1910. With three portraits in collotype and eight other illustrations. London: Longmans, Green, and Co. 1910. Pp. 342. Price 7*s*. 6*d*. net.

## DIPHTHERIA OF THE VULVA IN A CHILD.

DIPHTHERIA of the vulva or vagina is very rare, and has been observed in two conditions—in the puerperium and in children. In 1898 Whitridge Williams recorded the case of a woman who on the twelfth day of a normal puerperium began to complain of pain and swelling in the vulva. The inner surface of the labia majora and minora was covered by a greyish-white membrane which extended a short distance up the vagina. The diphtheria bacillus was found, and recovery took place under antitoxin. The infant and an elder child were subsequently attacked with diphtheria and died. In necropsies in cases of puerperal septicæmia dirty-greyish or yellowish membrane is frequently found in the uterus and vagina, and has been described in the older works as diphtheria, but is generally due to necrosis produced by the streptococcus or other organism. Very few cases of diphtheria of the vulva in children have been recorded. It may be primary or secondary to diphtheria of the throat. In the *New York Medical Journal* of Jan. 7th Captain L. L. Smith, of the Medical Corps of the United States Army, has reported the following case. On March 15th, 1910, he was called to a girl, aged three years, who was suffering from slight cough with a little pyrexia. The throat and nose were examined with negative result, and in a day or two she seemed to have completely recovered. A few days later he was again called to see the child, as attempts to micturate were unsuccessful and caused her to cry with pain. The meatus urinarius and labia minora were slightly inflamed and swollen. There was some mucoid vaginal discharge, but no membrane was seen. As hot applications to the vulva and lower abdomen failed to produce micturition a catheter was passed. The urine was

normal. An alkaline diuretic was prescribed and micturition became possible but attended with great pain. The temperature was 100° F. On the next day there was slightly muco-purulent vaginal discharge, which was examined for the gonococcus by Gram's method with negative result. As there was no evidence of diphtheria of the throat or nose, this disease was not suspected and cultural methods were not employed. On the following day the discharge had increased slightly and there was some exudation on the labia minora, but no well-defined membrane. The inguinal glands were slightly enlarged and tender. A blood serum agar tube was inoculated and sent to the curator of the Army Medical Museum in order to determine the character of the infection. He reported that the specimen showed an almost pure culture of the diphtheria bacillus. Eight thousand units of antitoxin were administered and within 24 hours the urinary symptoms began to subside. Five thousand units were subsequently given and in a day or two the symptoms had disappeared. A slight greyish membrane separated from the labia minora and from part of the labia majora. Complete recovery without any complications followed. As soon as the infection was found to be diphtheria, and before antitoxin was administered, blood-serum tubes were inoculated from the secretions of the nose and throat with negative result. The only source of infection which could be suggested was a female guest from a locality where there had been cases of diphtheria. She visited the family two days before the child was taken ill and had a bad "cold," but was not ill enough to seek medical advice. She used the bathroom is which the child was bathed daily. Possibly a towel used by her was also used in drying the child, who was thus infected by a diphtheria carrier.

## "INFLUENZA" AMONG CATS.

As to whether the members of the feline tribe can rightly be set down as the subjects of "influenza," such as is understood by the term when applied to the human species, is a point upon which there has been considerable controversy. The differential diagnosis between "influenza" and "distemper" is often only a matter of opinion, and most veterinary surgeons would diagnose the ailment under the latter name. Distemper of the cat is a well-recognised complaint and very often occurs in such a virulent form as to clear out a whole cattery, causing a loss to the owner in some instances of many hundreds of pounds. In several parts of England at the present time epidemics of distemper are raging in a most fatal and virulent form, and veterinary experts have been called in wherever the value of the animal has permitted of the adoption of such a course. It is well recognised that the disease is spread very rapidly by the habits cats acquire of associating together, especially at night time, and that it is a disease which is very difficult to treat satisfactorily owing to the obstinacy and lack of vital resistance of the patient. A cat taken ill with this disease voluntarily refuses all nourishment and will die if not properly and artificially fed and kept thoroughly warm. In some instances the digestive system becomes affected, ulcers appear in the mouth, and there is a persistent diarrhœa and dysentery. In other cases the throat is violently inflamed, saliva streams from the mouth and lips, and the poor beast looks the picture of abject misery. Although it has never definitely been proved that this disease has actually been transmitted to man, it is certainly a wise precaution for the medical adviser of a household to insist upon the strict isolation, especially from children, of a cat suffering from any symptoms of this kind. In some instances death occurs within three days, but in most cases the cat will linger for a week or longer. Recovery is never certain, but when a cat has begun voluntarily to feed again the convalescence is tolerably rapid. Knowing from the daily press that the disease is prevalent just now among cats, we think that it would be an exceptionally good opportunity for practitioners, who may happen to be in infected district, to endeavour to trace up authentic instances of infection from cat to man.

## BILHARZIA IN EGYPT.

Dr. E. Zweifel, of the German Deaconesses' Hospital in Cairo, has very carefully examined the blood in 20 cases of the prevalent "Egyptian chlorosis," and has reported his results in the *Archiv für Schiffs- und Tropen-Hygiene* for February. In all of them bilharzia ova were found in either fæces or urine, but only five could be said to be infected with ankylostoma, which is usually declared to be the cause of the disease. He quotes with approval Kautsky's statement that the healthy lower classes in Egypt have a hæmoglobin content in their blood only 80 or 90 per cent. of that in Europeans, while in persons infected with bilharzia this is reduced to 70 per cent., and is not further lowered by an added infection with ankylostoma. The red corpuscles are reduced to 4,500,000 per cubic millimetre; the colour index is less than unity; the leucocyte count approximates 9750 in uncomplicated bilharziosis, but goes down to 8000 if ankylostoma is present as well; mononuclears are reduced, and eosinophiles are always increased. Full details are given and should be compared with the account of 50 cases in the paper by S. R. Douglas and F. W. Hardy that appeared in THE LANCET of Oct. 10th, 1903, p. 1009. The writer concludes that bilharzia is very prevalent in Egypt (he says that hæmaturia is almost universal and scarcely considered abnormal), and as it sets up a severe anæmia materially weakening the working power of the men, it is clear that it must materially diminish the work done in Egypt, the earnings of the people, and therewith, the revenue. So the Administration may find it well worth their while to spend money on investigation of the disease with a view to prevention and subsequent and consequent increase of the revenue hereafter.

## CONCERNING PRESCRIPTIONS.

A CORRESPONDENT under the pseudonym "Lex" recently informed us of a curious question which had come under his notice with regard to the prolonged and repeated use of prescriptions and to the rights with regard to them which may be claimed by patients. A druggist made up a prescription for a patient more than 12 years ago, kept a copy of it in his books, and from that copy dispensed the prescription on subsequent occasions for the benefit of the same customer. He has recently been asked by a solicitor, who is a relative of the patient, and presumably has the patient's authority for making the demand, to supply a copy of the prescription, and he has replied by declining to do so. "Legal proceedings" have since been threatened, presumably with a view to compelling the druggist to make from his books a copy of the copy contained in them, and to hand it to the patient who at one time obtained the original from a medical man and who possibly has lost it. We suggest another possibility with regard to the somewhat singular demand, as to the supposed motives of which we are not informed—namely, that the copy may be desired for comparison with the original in order to ascertain whether the medicine supplied is that ordered by the medical adviser of the patient so many years ago. Possibly it may not be found so efficacious now as when it was dispensed for the first time, but we are not concerned at the moment with the question whether a patient is wise to take during an indefinite period a medicine ordered on

some previous occasion by his medical attendant, but with the allegation of his right to a copy of a druggist's copy of the document ordering it. So far as the information before us enables us to do so we have considered the matter and on our side we ask this question: In the absence of any express contract to supply copies at any future date on demand, is there any contract to do so on the part of the druggist to be implied from what takes place when a patient brings him a medical man's prescription in order that it may be made up? In the ordinary circumstances of such a case we cannot conceive that there is any implied contract of this kind, and apart from a contract express or implied we do not see how any right enforceable by law to have a copy so made can arise. We are not aware of any custom requiring a druggist to furnish copies of prescriptions on demand, or of any case in which such a claim as that described has been carried into a court of law, and we hope we shall be informed if legal proceedings in fact follow upon the threat described by "Lex." Of course, legal proceedings are conceivable in which the court might order a dispenser to produce his books, but that is not the point we are considering. We have not considered closely what might arise in defence as to a time limitation for the enforcement of such a contract as we have suggested, for that would no doubt be gone into by the legal advisers of the threatened druggist after the first step in the proceedings had been taken by the other side.

## SLEEPING IN THE OPEN AIR.

IN the January number of the *British Journal of Tuberculosis* there is an interesting article by Dr. Thomas Spees Carrington, assistant secretary of the American National Association for the Study and Prevention of Tuberculosis. It is entitled "Directions for Living and Sleeping in the Open Air," and is written primarily for the instruction of patients in America desirous of carrying out the principles of the open-air treatment of tuberculosis at home, but English readers will profit from its lessons. The article is written simply and is admirably practical, full directions being given and the approximate cost of any apparatus or building recommended being stated. The best methods of constructing outdoor shelters, of building small shacks or cabins on the flat roofs of tenement houses, and of arranging for the patient to sleep and live in a porch or verandah under open-air conditions but sheltered from wind, rain, and snow, are clearly described and illustrated by photographs. When such constructions are not practicable, as, for example, in tenement houses in cities, the use of a bed tent is recommended, and full directions are given for its construction out of simple and inexpensive materials. The use of bed tents is more common in the United States than in this country, and is certainly worth a trial. The patient's bed is placed alongside an open window and a small canvas tent is erected over the patient's head and attached to the casing of the window and to the bed, so that the head and shoulders are practically in the open. Useful and ingenious contrivances are described composed of mosquito netting fixed over barrel hoops to cover the patient's bed completely, so as to act as a protection from mosquitoes and flies in tropical climates. Directions are given in regard to clothing, the making of the patient's bed, the arrangement of pillows, and protection from draughts. Among many useful hints in which the article abounds we may mention the suggestion that two pillows should be placed in the form of an inverted V, the apex being at the top of the bed, and the patient's head lying where the two pillows meet, so that his shoulders nestle between them and are protected. It is also advised that to prevent chilling the patient should get into bed indoors and then be wheeled into his outdoor shelter if this is practicable. Dr. Carrington's article is well worth perusal by any practitioner who has tuberculous patients under his care, and might be read also with advantage by the friends of those suffering from the disease.

## THE FUNDAMENTAL BASIS OF THE VOCATION OF MEDICINE.

THE persistent attempt to commercialise the profession of medicine that may be seen operating in varying degrees throughout the civilised world is defended by its supporters by the argument that this is essentially the commercial age. More and more are we urged to consider the fact that after all the practice of medicine is a business, in that it is a means of livelihood, and that consequently it ought to be conducted on business methods. This argument has cropped up in the recent perennial discussion on medical fees. "Senior," who started the correspondence in the *Times*, displayed all through his letter an underlying incapacity to understand that there need be any essential difference at all between the practice of medicine as a means of livelihood and any other business occupation. Yet it is undoubtedly the case that in all times the highest and worthiest thought in medicine has considered that there is a fundamental and unbridgeable chasm between the practice of the healing art and all commercial pursuits of whatever kind. The general principle on which this decision is based has been incisively and lucidly enunciated recently by Dr. Robert T. Morris in his report as trustee of Cornell University. In dealing with the subject of medical education Dr. Morris says: "The law of survival of the fittest does not work out in the professions as it does in the trades, because it is the public that has to bear the consequence of competition among physicians, and the fittest to survive is not always the one who represents the best interests of the public and of the profession." Method is, of course, as desirable for physicians as for anyone else, it is absolutely essential in science, and consequently in that aspect of medicine which depends on science. It should be cultivated in the extra-scientific aspects of the practice of medicine—the obligations between the medical man and the public—and in so far as the word method is synonymous with business the medical practitioner should surely be business-like. But his methods must be the special methods that accord with the spirit of the above-mentioned general principle—not the "customs of the commercial world." These, worthy of respect though they may be at the hands of the commercial man, are based upon first principles essentially different from those upon which the practice of the healing art has been from time immemorial established.

THE Local Government Board has issued an Order enabling the Metropolitan Asylums Board to utilise spare accommodation in the hospitals of the Asylums Board for the reception and treatment of additional classes of poor persons. Under the authority thus conferred upon it the Asylums Board will be enabled to receive from any of the Poor-law authorities of the metropolis children suffering from measles or whooping-cough into any of its hospitals or parts of its hospitals where there is vacant accommodation. It is understood that some 1000 beds will be available for these cases.

ON the retirement of Dr. Franklin Parsons, assistant medical officer of the Local Government Board, and Dr. Bruce Low, second assistant medical officer of that service, Dr. Theodore Thomson and Dr. G. S. Buchanan have been appointed respectively to these posts. Dr. Buchanan, for the last five or six years, has acted as chief inspector in the new division of the medical department which has been set up

to deal with questions of the purity of food and the prevention of adulteration.

THE number of small-pox cases in the epidemic in the East-End of London had reached over 40 by the middle of the week. Close supervision of suspects is being practised.

Professor W. E. Dixon, Professor W. H. Lang, Professor R. Muir, and Professor J. B. Leathes are among the candidates recommended by the Council of that body for election to the Royal Society.

## BONE-SETTING AND ITS GENERAL PRINCIPLES.

BY FRANK ROMER, M.R.C.S. ENG., L.R.C.P. LOND.

SINCE Dr. Wharton Hood in 1871 described from personal observation the methods employed by Hutton, a leading bone-setter of the day, many surgeons have adopted, with satisfactory results, similar or modified principles. This article is submitted with the object of dispelling the popular notion that the medical profession know nothing of bone-setting, while at the same time drawing attention to the general principles which should be observed in dealing with joints whose utility has been impaired by adhesions. No useful object will be served by describing the pathology of the various ankyloses, and for the purposes of this article it may be assumed that reference is made to fibrous adhesions caused mainly by trauma. Again, though treatment by bone-setting is usually rapid and effective, it must be remembered that a cure could in many cases be achieved by electricity, prolonged massage, or other means.

Adhesions may appear within three weeks of the injury, but their capability of interfering with the action of a joint depends to a large extent on their situation. They may exist within the joint itself, binding together the articular surfaces and folds of synovial membrane, or be entirely periarticular when the surrounding tendons have become adherent to their sheaths through tenosynovitis. The resulting disability may vary from complete ankylosis of the joint to a condition where pain is only elicited by some particular movement. An important point to bear in mind is that a joint need not be entirely incapacitated by adhesions to require manipulation. Indeed, in these days of early massage and movement complete ankylosis is rare compared to what it was in the time when absolute rest was considered essential for the treatment of bone and joint injuries. Hence it frequently happens that the possibility of some small adventitious band is not suspected, provided the joint moves with comparative freedom, and it is especially in these cases that the modern bone-setter proves so successful. Careful examination in such cases will reveal a painful though comparatively slight interference with the normal range of movement, to cure which forcible manipulation will be just as necessary as in joints whose action is entirely crippled by adhesions. Some authorities state that previous to attempting these operations on ankylosed joints careful preparation for a week beforehand by hot fomentations and massage is essential. These preliminaries are not needful, though perhaps in certain cases of long standing, where the whole limb is stiff from disuse, a few radiant heat baths combined with massage might prove useful by rendering the muscles more supple. Again, it has been suggested that in such circumstances tenotomy should be previously performed, but proper attention to the after-treatment makes this a quite unnecessary procedure.

Unless contra-indicated, when adhesions are to be broken down an anæsthetic must always be given, not so much for the avoidance of pain as to ensure complete relaxation of the muscles. By dispensing with an anæsthetic the difficulties of the operation are increased, as it will be necessary to overcome muscles which the patient will involuntarily put into action for the protection of the joint, before the adhesions can be satisfactorily ruptured; at the same time, a risk is run of severely spraining or rupturing the contracted muscles. It is for the same reason that nitrous-oxide should not be selected as the anæsthetic, and it is possible that where severe inflammation has followed forcible movements these points have not been observed. Where manipulation has been properly performed no untoward result need be feared, as there is nothing in the rupture of fibrous bands to cause inflammatory action provided the case is otherwise suitable.

Generally speaking the movements should be performed in a swift, even, and firm manner, so that a joint undergoes the motions of its normal action, though not necessarily to the full extent of its range. The reason of this is that the muscles will have contracted in proportion to the limitation of movement permitted by the adhesions, and once that limit has been overcome the contraction of the muscles will be the only impediment to the normal range. The adhesions once ruptured after-treatment will speedily restore the elasticity of the muscles, which might well be strained should the full extent of movement be at once sought. In cases of long standing the adhesions yield with a distinct audible snap or crackle, others of less duration with the noise of tearing wet parchment, whilst those of still more recent date, though giving no audible sound, can generally be felt by the fingers of the operator. Experience shows that rapidity in the execution of the movements gives rise to far less after-pain than if the adhesions are broken down by slow and deliberate stretching, but care must be exercised against jerks or undue violence. When taking hold of a limb the grasp should be just above and just below the affected joint, for though a more powerful leverage can be obtained by more distant grips, yet it is as well to bear in mind that other structures may be broken besides adhesions, whilst in the young there is danger of separating the epiphyses.

After-pain is certain to be present in varying degrees, but will pass off in the course of an hour or so, and provided sufficient care has been taken in the operation no apprehension need be felt on this point. Within a few hours the joint should be gently massaged and movements aided. The mere allowing a joint to remain quiescent for 48 hours, as is sometimes recommended, is not safe; sufficient time may thus be given to allow the freshly ruptured adhesions to reunite. Notwithstanding the pain, every effort should be made to keep the joint free, and on no account should any bandage or splint be applied. It will be found that the rubbing, if skilfully performed, gives great relief from the pain, and any local application is scarcely ever requisite.

Occasionally full movement and freedom from pain follow the manipulations, but this ideal result is rare. More often a patient is quite unable to move the joint beyond the extent obtained under the anæsthetic, the explanation being that though there is no longer mechanical obstruction in the joint, the muscles from disuse are so wasted and contracted that they are physically incapable of normal work. To dismiss a patient without correcting this condition is to court almost certain failure. Merely ordering the joint to be used is for the most part useless, as few people have the strength of will necessary to make muscles perform their proper functions at the expense of pain. It is the custom of a large number of bone-setters to administer an anæsthetic on two or three subsequent occasions for the purpose of overcoming the muscular resistance. This should never really be necessary if the adhesions have been properly dealt with at the time of the operation, and the most satisfactory treatment after the first two days consists in substituting for the rubbing graduated exercises by means of weights and pulleys. These exercises, though possibly painful, must be performed daily, when it will be found that increase of strength and mobility bring decrease of pain. Exercises should be diligently persevered in till the muscles have regained their former bulk and the joint its full power of movement.

Such are the broad principles upon which bone-setting is based, and, though in certain particulars the procedure I have set out differs from that advised by some surgeons, it embodies the experience gained in a large number of cases, in which success has followed its adoption. Doubtless many joints affected by small adhesions might eventually recover by other means, but the facilities of radiant heat and massage are not easily come by in country places, and are moreover expensive. Where perfect recovery from effects of trauma is unduly delayed time is too often considered as the only solution of the difficulty, and when the patient, tired of his disability, seeks unqualified advice, his cure by the aid of "bone-setting"

must not be regarded as one of "suggestion." Contrary to the popular belief that some mysterious gift is essential for the successful performance of these manipulations, there is nothing to prevent any practitioner doing them with success, provided that care is taken to ascertain the particular lesion that exists. A certain delicacy of touch is doubtlessly requisite to properly appreciate that lesion, whilst the correction of it largely depends on knack, but both can easily be acquired by experience and practice.

## THOMAS v. BARKER.

### MR. JUSTICE DARLING'S SUMMING-UP.

**IN the High Court of Justice, King's Bench Division, on Tuesday and Wednesday of last week, before Mr. Justice Darling, this important case was tried.**

**The following is a transcript from the shorthand notes of Messrs. Marten, Meredith, and Co., 8, New-court, Carey-street, London, W.C., of the summing-up of the learned judge, in the course of whose remarks the gist of the medical evidence becomes apparent as it struck an acute and impartial lay critic. The reasons both for the verdict in favour of the plaintiff and for the modest amount of the damages will be obvious.**

*Summing-up.*

MR. JUSTICE DARLING: Gentlemen, you are aware that this is a case in which the plaintiff seeks damages from the defendant, Mr. Barker, because he says he has established before you, and it is for him to establish it, that Mr. Barker, undertaking to treat him for some affection of the knee, treated him without the amount of skill which he was entitled to expect from Mr. Barker, and that thereby the plaintiff suffered damage in money to the extent of £400, and damage in this, that he had to have the leg amputated, which he would not, he says, otherwise have lost. Now, gentlemen, I tell you that it is for the plaintiff to satisfy you, or else your verdict must be given for the defendant, that the negligence alleged against the defendant is made out. As to what that negligence should be, it is conceded that the defendant is a very skilful manipulator of bones; he is not a man who has passed examinations and got degrees, but has been a long time at this business, and everyone admits and it cannot be too well remembered that he has a great amount of skill and practice in dealing with affections of joints, dislocations of joints, as well as other injuries, which people may suffer from in their joints and limbs. That being so, he is bound to use the best of his skill and knowledge, and it will not do for him to say, and he does not say: "I am only a poor ignorant man, and I did my best." What he says is this: "I am a skilful man, I am a man who has performed thousands of remarkable operations resulting in cure where ordinary doctors have been less successful," and it is because of that reputation that the plaintiff went to him, and therefore the plaintiff is entitled to expect a reasonable amount, a fair and proper amount, of the skill and knowledge of the defendant to be placed at his disposal.

Now, gentlemen, there are some things in this case which we may take absolutely for granted. If I state anything that is not to be taken absolutely for granted I hope the learned counsel against whom I state it will interrupt me at once. The plaintiff had long been suffering from a state of knee which it is now admitted had resulted in a tubercle affection of the knee of some long standing. He hurt his knee in 1901; it had been bad off and on in 1905 and 1906 and 1908; he had been at the Charing Cross Hospital, where the surgeons had suspected tuberculosis; what is called a radiograph had been made of his leg, of the joint, by the skilful photographer and doctor there, and he had come to the conclusion that then in 1908 at the Charing Cross Hospital the plaintiff was suffering from a tuberculous affection of the knee-joint. Now we start with that, and that is before he sees the defendant at all. It may be also taken for granted that nothing that the defendant did, whatever it was, did produce or could have produced the tuberculous affection of the knee-joint; it is admitted that the tuberculous affection was present before. Now we know what has only lately been known, for a very few years even to doctors, but it is now common knowledge that tuberculosis is the work of a little microbe; it is called a little bacillus, a thing that can be identified under the microscope, a thing that can be differentiated from other bacilli, so that a doctor will say, "That is a bacillus which produces tuberculosis; that is a bacillus which produces cholera; that is the bacillus which produces some other definite disease." These things are known. People knew long ago that there was such a thing as tuberculosis, and they called it tuberculosis, and they knew long ago that if you got a tuberculous joint you should keep it quiet, but they did not know why. But now the doctors know why, and the reason is that the bacilli are warring against the tissues in the human body, but among what the doctors call the forces of nature—the bacilli also ought to be recognised as the forces of nature, it seems to me—among the other forces of nature there is something at work, what it is we have not been told, but it is something at work which fights the bacillus, and what it does to him is to cover him over with an envelope. If you keep the place quiet where he is at work and cover him over with an envelope and imprison him, as long as he is there he is like the genius which the Eastern emperor put into the bottle and which the fisherman released unskilfully, not knowing he was there. While there imprisoned he is like the genius, he can do no harm, but take him out, release him, and he becomes active at once. He finds his way to the most vital parts of the body and he will kill the patient in whom he is operating, unless he is removed by some such process as the amputation of the affected limb. Now that happened here. Somehow the bacillus was at work in Mr. Thomas, and had been for a long time. Some of the doctors, the doctors on the one side, said, "We believe he was quiescent; we believe he had become quiescent; we believe he was imprisoned, encapsulated, use whatever term you like, and it would not have done him harm if it had not been interfered with." The doctors on behalf of the defendant said this afternoon, "We do not agree at all." They said, "We had not the same advantage; we had not the same opportunity as the plaintiff's doctors, because they saw the plaintiff while he had his leg upon him, they saw the sinus, they saw the abscess, they took off the leg, they examined while it was fresh, bone, cartilage, tissues, and everything," and they were called yesterday and gave their evidence. The doctors called by the defendant to-day say, "We have not had that advantage, we have examined the thing since it has been preserved in formalin, and we come to the conclusion that the microbes had not been encapsulated; that this was a thing of long standing; that it was a progressive thing; it did become more active than it had been; it did result in such a thing that by the 15th April it was necessary to amputate the leg or the man would have died." They all agree to that, but the defendant's doctors say that was in no way due to anything the defendant did, it would have happened anyhow. Then it becomes necessary to inquire what did the defendant do? Here, again, it is conceded on all hands, unless I am much mistaken, that it would have been grossly improper, with a leg being in the state in which it was in November, 1909, and December, 1909, to do any such thing to it as the plaintiff suggests was done. It would have been grossly improper, the defendant himself says, to have used any violence to it, to have attempted to break down adhesions by giving it a violent wrench.

Now, gentlemen, it is also admitted that in certain circumstances it is a perfectly proper thing to take hold of a joint and to use violence to it to break down adhesions. It is stiff because something has grown on to it and holds it tight, and it is admitted that there is a legitimate operation of breaking down adhesions, and then the joint will work. But it is admitted that must not be done if the joint is a joint affected by tuberculosis, and it must not be done for the reason that if you do that kind of operation upon a joint affected by tuberculosis you set free the bacilli and they do the work which I have just described to you. Now the contest comes between the plaintiff and the defendant. The plaintiff says the defendant did undertake to perform an operation upon him, the operation of breaking down the adhesions; he told me that he would have me dance, which he could not do while these adhesions were there. The defendant says, "I never undertook to do anything of the kind; I told you you had tuberculous disease of the joint." The plaintiff says "You did say something about tubercle, we talked about it, because I said the doctors at the Charing Cross Hospital suspected something of the kind." The defendant says, "I told him that I must examine him, and I should recommend radiant-heat baths, and I should want to examine the knee." The plaintiff said, "You told me you must give me an anæsthetic because the operation you were going to perform would cause me great pain." The defendant says, "I never said anything of the sort. I wanted to perform no operation. I wanted to make an examination," and therefore the defendant says—I will read it if you wish, but I think I can summarise it—"I recognised from the first this was a very bad knee. I suspected there might be cancer it was so bad, sarcoma it is called. I never expected even to be able to give relief, but I said I will try these radiant-heat baths and make the examination, and I shall want, for the examination, to give you an anæsthetic." Gentlemen, he did prescribe the heat baths, and the plaintiff took them, and he went back, and on two occasions, the 27th November and the 16th December, the defendant got Dr. Axham, his anæsthetist, to give gas to the plaintiff. While under gas he did something to the plaintiff, and he did it with his hands. The defendant says, "What I did was I handled him very gently, I simply moved my hands during a few seconds to make an examination." Why did he do it? He said, "I did it to confirm myself in my opinion. I had made a hurried examination before, and this was to satisfy myself whether my first opinion about it was right." If the very first examination, the one on the 27th November, did satisfy him be was quite right that it was tuberculosis, that there was nothing to be done, the case was hopeless—he said himself there was nothing for it but amputation, and that he told the plaintiff so, and that he must see a surgeon—If that is so, how is the second examination explained? What is said is, if you are going to treat a leg in the way of breaking down adhesions, if you do not break them all down the first time you will have to perform a subsequent operation. That is common enough, but it is asked, If he had made an examination under gas and satisfied himself by that examination of the 27th November that he was right in his diagnosis, why put the plaintiff to 5 guineas more expense to make another examination? The answer to that is that it was done to see what effect the radiant-heat baths had produced. Now are you satisfied of that? Dr. Axham has been called, you have heard his evidence. I will not attempt in any way—it is so lately given and it would be impossible to summarise it in a few words—to convey any idea of it. You have heard it. Does it satisfy you no operation was performed on that day? Does it satisfy you there was nothing else? You heard his examination and his cross-examination. There is the fact of what is put down in the books. You see "Op. gas" and those two letters and you have heard the defendant's explanation of what that means. They are the very words he puts down when he does do an operation, when he does operate by breaking down adhesions. There is nothing to distinguish them, but he says: "It merely means I wanted the anæsthetist; it does not mean there was an operation, it merely means gas." Gentlemen, I suppose you will ask yourselves: If it only means gas, why not put down only "Gas": why put "Op. gas," which is put when there is an operation under gas, if you do not mean any operation but only mean gas? But there is his explanation. It seems certain that gas is quite sufficient if you are only going to do such an operation as can be done by a very skilful man, a very quick man. Gas is quite sufficient if a skilful practised man is going to break down adhesions, to take hold of a limb, twist it, and break down the adhesions. It might take you or me half a day, but a man who knows exactly what to do can do it; and the defendant habitually does do it with gas. When he wants to perform an operation he puts "Op. gas," and then he performs an operation not with chloroform or ether necessarily, but with nitrous oxide gas. If that is so, you must ask yourselves are you satisfied what was done on these days was nothing but examination. If it was nothing but examination the plaintiff's case is gone, because nobody pretends that merely to examine that knee without using the sort of violence that would be used to break down

adhesions would have produced the kind of thing the plaintiff said was produced by what was done on those two days. Here, again, mind, it is for the plaintiff to satisfy you that what was done was violent twisting or breaking down of those adhesions. He must satisfy you. If you cannot make up your mind about it you must not find for the plaintiff upon that, but you must take this evidence into your consideration and say what are you satisfied was done. The defendant's case is this, and he and Dr. Axham are the only two people who were awake in the room at the time what he did was done; the plaintiff, of course, was asleep owing to the gas. The defendant undoubtedly knows what was done, the plaintiff does not accurately; I mean he cannot tell you, he was asleep; the defendant does know what was done. Dr. Axham may or may not know what was done, according as you think you can trust his evidence as being genuine or with insufficient knowledge. But there are three witnesses whose evidence you must bear in mind in considering really what was done on the 27th November and the 16th December. It is admitted that the plaintiff took with him on the first visit his sister Alice, and she said she saw the defendant in a waiting-room. "I asked him if he thought he could do my brother any good; he said Yes. Defendant said my brother did not want to take an anæsthetic, but what he was going to do could not be done without one as it would cause intense pain." Gentlemen, if you believe that, that does not refer to an examination to satisfy himself as to whether his first diagnosis was right, because it is not pretended that an examination would cause any pain at all. Examination would be the gentle touching alluded to in the letter as a "gentle movement of the joint," to see if it was free or tuberculous. Do you believe that young woman when she says that was said to her? "The defendant said he was quite sure he could do my brother a lot of good, if he did not quite cure the limb that he could walk without a stick or anything." Now the defendant's evidence is totally different, because he says, "I recognised from the first I could not do him any good. I never pretended I could do him any good; it was a shocking case, a very bad case of tuberculous joint, as I could see the very first time when I made my first examination on the 27th November. I was absolutely confirmed by that, although he had those radiant heat baths meantime." That was said on the 2nd November, not at the time when any operation took place. But on the 27th November, when the first operation or examination was performed, the plaintiff undoubtedly took with him Mr. Joy, his cousin. We know he undoubtedly did, because the defendant himself says, "I saw Mr. Joy; I saw him in the waiting-room. I saw him as I came out," and Mr. Joy says this: "After the operation I saw the plaintiff; he was dazed and exhausted; they had all come into the ante-room; the defendant looked very heated, that is Barker; drops of perspiration were on his brow. I said, 'You seem very warm, Mr. Barker.' The defendant said, 'He has given me a hard job,' or a 'tough job.' I asked if the plaintiff was all right. Defendant said, 'Oh yes, we will soon see him all right.'" He says, "the plaintiff was in the defendant's room, where I was not, for 20 minutes or half an hour." Now, gentlemen, you must ask yourselves is that evidence true? If it is true it points to something being done very different from a little examination, and no one disputes that if a man is going, within a short space of time, something under a minute, to take a joint forcibly and break down adhesions, that is very hard work, and the defendant himself told us yesterday he worked very hard, that the work was hard and exhausting, and you could see for yourselves if you are applying your force with knowledge upon a very small space and within a very short time, it is bound to fatigue and to fatigue you suddenly and greatly. You must ask yourselves is that evidence true? If it is not true, Sir Edward Clarke said, and I see no alternative to it, Mr. Joy has simply invented it, and Sir Edward Clarke said it was perjury and very deliberate perjury. There he will have invented the fact of the appearance of the defendant, and invented a conversation with the defendant, and I do not see how you can help applying the same observations to the evidence I have just read of Miss Alice Thomas. Mind, you must not be afraid; juries must do their duty and must face most difficult circumstances bravely. It may be that is perjury, it is for you to judge: you saw the young woman; you saw Mr. Joy; you heard him give his evidence and you heard what cross-examination there was. Do you or do you not believe him?

Now Miss Elizabeth Thomas went with her brother on the 16th December, and she says, "I went with my brother; I saw the defendant before the anæsthetic was given, and again afterwards. The defendant came downstairs"—it was suggested at one time that could not be, that the consulting room was on the ground floor, but he has two, and sometimes uses one and sometimes the other—"and took me up to where the plaintiff was; the defendant looked very hot; the defendant left me alone with my brother and then came in again. I asked the defendant what he thought of my brother's leg; he said he thought it might be sarcoma, and said: 'It is a very bad leg.' I asked if he thought he could do my brother any good, and he said, yes, he thought he could. He said he felt quite sure we should have him walking about again." Then she was cross-examined and said, "I know now what sarcoma is"—the defendant says he believed he explained it to her and told her it meant cancer—"I inquired a few days later of one of our own doctors, it may have been Dr. Bunn or Dr. Carruthers, and I think he said it was something like cancer of the bone; this was in December, and I told him that is what the defendant had said the plaintiff was suffering from. I do not know that the defendant led me to believe that he had used great force; he looked very hot." There is her account.

Now, gentlemen, really it seems to me the crux of this case is what was done on those two days. Do you feel sure of what was done? Can you make up your minds upon the evidence of the plaintiff and of the defendant, and of Dr. Axham and of those three witnesses, what was done? Some of them are not telling you the truth, that is certain. If the defendant is telling you the truth the plaintiff is not, and I should say if he is telling the truth it is almost impossible to suppose that Mr. Joy is telling the truth, and very difficult to suppose these two young women are. What he says is absolutely irreconcileable with what Mr. Joy says. Now, gentlemen, you must make up your minds, I think, whether on those two days, the 27th November and the 16th December, an operation was performed or whether only an examination took place. As to these the defendant says it was only an examination; it was an examination, if an examination, under gas. He does use gas when he is going to perform an operation. Does anyone use gas except for operations? Does anyone use it for making an examination alone? The doctors for the plaintiff say no, but now here is a doctor called for the defendant, Dr. Garrard; he is a very eminent doctor, as Sir Edward Carson has pointed out. Listen to what he says about this: "I never have examined a knee of this kind with an anæsthetic; it is sometimes required to overcome reflex contraction; gas could not do the patient any harm; I should not have given it myself; I should not want to examine the joint; if so, I should prefer chloroform; gas is the least dangerous." That he said in examination-in-chief, but if he wanted to examine a joint he would not give an anæsthetic; he would not need to; he could examine the joint without. What bearing has that on this case? What was there here which made it necessary to examine that joint with an anæsthetic? What was there that the defendant had not found out about the joint in the interviews which preceded the 27th November and in what he knew had happened from the treatment of the radiant heat baths? Dr. Garrard was then cross-examined by Sir Edward Clarke and said this: "I have much experience of tuberculous joints. I have had to examine many tuberculous joints. A careful examination would take some considerable time." The reason for that is this: what was done by the defendant only took a few seconds, something inside a minute. It is conceivable an operation may be performed within that time, a sudden violent twist, but if you are going to examine in order to confirm earlier examinations is it enough time? Listen to what Dr. Garrard says: "A careful examination would take some considerable time. I have never used an anæsthetic for it, and have always made a satisfactory examination. I should prefer chloroform if I had to give an anæsthetic to examine a joint, because it gives a longer time and relaxation of the joint. Gas gives a very short relaxation; then the muscles become rigid, and so the purpose of the examination would be defeated." That is Dr. Garrard's evidence. Now ask yourselves, in the light of the scientific knowledge which these people place at your disposal——

A JUROR: May I make a remark, my lord?

Mr. Justice DARLING: Certainly.

The JUROR: The evidence seems so conflicting on the part of the doctors as to the immediate result of the breaking down of the adhesions. Some doctors say he could not walk away at all.

Mr. Justice DARLING: I was coming to that.

The JUROR: Others say it would not show for some weeks.

Mr. Justice DARLING: I know, and I will come to that. There you have the medical knowledge which is put at your disposal as to the object and as to the utility of giving gas to a person for an examination. That it may be given for an operation is not disputed, because it has been done. As you yourself have said, it has been said by the doctors, some on one side and some on the other, that the plaintiff would have been in such pain that he could not have walked away. He says himself, I will read it to you if you like, that directly this was done he did feel easier. If nothing was done but examine it was difficult to imagine that could have made him feel easier, but he says he did feel easier at the time; that he walked away with a stick, he came with a stick; that after a time the knee-joint got stiff and swelled. He went and had more of the baths; then the last operation was performed, after a time the knee-joint got stiffer, more swollen. Before he gave up attending the defendant at all there had appeared the inflammation on the outside, there had appeared the sore, and then he put himself in the hands of these other doctors. Now, gentlemen, what do the doctors say? On the one side they said if anything beyond an examination had been made, anything in the way of breaking down adhesions, he could not have walked away. Other doctors, Mr. Waterhouse and others, say he could. At the time there is nothing inconsistent. They heard all the evidence he gave, and they said there was nothing inconsistent in his having walked away from the place directly the operation had been performed. I cannot tell you how to reconcile this. You must try to find out some means for yourselves. It would be improper for me to say you should rely on this doctor more than on that. You have seen them in the box, you have heard them give their evidence, you have heard them cross-examined. You find that the doctors on the part of the plaintiff, Mr. Waterhouse, and the rest, see nothing inconsistent with an operation being performed on those two days and the plaintiff walking away and walking about some time afterwards, and finding the damage becoming noticeable some time after whatever was done was done. You have heard the cross-examination, a long cross-examination, as to whether it would not necessarily have brought about great pain and suppuration even within a very short time; whether the microbes would not have got to work at once and practically destroyed his life within a few days. The doctors on the other side, the same doctors who have given this theory you have lately listened to from the observing of that joint in the bottle, have given their opinion, and said he could not have walked away after an operation had been performed.

A JUROR: My lord, could we not know how many said he could and how many said he could not, because it seems to me to hang on that?

Mr. Justice DARLING: Dr. Bunn thinks he could, Dr. Carruthers thinks he could, Mr. Waterhouse thinks he could, Mr. Ballance thinks he could. There was one other doctor.

Sir EDWARD CLARKE: Dr. Ironside Bruce.

Mr. Justice DARLING: Not one of them saw anything inconsistent in his walking away as he said he did, with a stick and feeling stiffness and swelling after a time, after a day or two. Not one of them saw any inconsistency in his doing that, anything inconsistent with the fact that an operation—a wrenching—had been performed on him that day. He walked with a limp when he came—he came because he always walked with a limp, and he went away with a limp. The doctors you have heard this morning—Mr. Barker you are entitled to take because, although not a qualified doctor, he knows a good deal about this kind of thing—Mr. Barker, Mr. Garrard, Mr. Phillips——

Mr. HOLMAN GREGORY: Dr. Axham.

Mr. Justice DARLING: Yes, Dr. Axham.

Sir EDWARD CARSON: And Dr. Whitehead.

Sir EDWARD CLARKE: He did not say anything about it.

Mr. Justice DARLING: Dr. Whitehead did not say very much about it.

Sir EDWARD CARSON: He said that he agreed with the other doctors.

Mr. Justice DARLING: Yes, he did, he agrees with Dr. Garrard and Mr. Phillips. He also said to Sir Edward Clarke that he agreed with Dr. Garrard's evidence, and you have heard the points in that evidence; Sir Edward Clarke called Dr. Whitehead to his aid, the points in which he relied himself upon his evidence.

Gentlemen, that is the case, but beyond I ought to tell you it is never a good way in estimating the value of evidence to say there are so many

on one side and so many on the other, because if time enough is given to it you could in most cases find always enough witnesses to overbalance in mere numbers the witnesses on the other side. Gentlemen, you must apply your own common-sense to the evidence, apply your own knowledge of what would be likely to happen, and weigh the evidence given by the doctors and by every other witness with that knowledge in your minds; but also do this: when you have theory on one side and theory on the other, and you want to find out whether a particular thing did happen or did not happen, you must have something to go by beyond those who say if it did happen the consequences would be so-and-so, and those who say if it did happen the consequences would be the reverse. If you feel you have direct evidence upon which you can rely as to what was done at the time and said at the time, and you are entitled to satisfy yourselves by that, you are not bound to attempt to reconcile one theory with the other. If the evidence satisfies you a thing was done or was not done, you should say it was done or it was not done, notwithstanding that so-and-so says the consequences if it was done would be this, and somebody else says the consequences if it was done would be that. If you are satisfied by evidence a thing was done, what can it matter that people say if it had been done the consequences would have been so-and-so? Let me put a simple case. Suppose you go away from this building and see a man knocked down by a taxicab, as you very likely will, and you see him get up and run away, and suppose when you come back here a year or so hence the case is being tried and people were to come before you and say if a man had been knocked over by a taxicab he could not have got up and run away; he might have gone a yard, and another said he could not have moved at all, he would be lying there still; and suppose you find another witness saying if a man were knocked down by a taxicab not only could he get up and run away but he would run all the better, all the faster, because he was so frightened, you would say to yourselves, "I cannot reconcile these theories; these are theories, I cannot reconcile them." I would say to you, if you were trying that case, "For goodness sake, there is one thing do not do: do not count how many witnesses have been called for the plaintiff and how many for the defendant; satisfy yourselves whether the thing did happen or not." If you saw it happen you would have a simple way of saying, "I know it happened because I saw it," but you might have a way not quite as simple but yet sufficient; you might have this: a man might come and say, "I care nothing for theories, I saw that happen; I do not want to go into what the man could do; I saw it happen," and if that was a man whose evidence you felt you could trust you would say that did happen, or, if a man said, "I was there and it did not happen," you would say "I am satisfied it did not happen," and you would not want to ask yourselves what would be the consequences if this man is right, or the other. I am not telling you that this scientific evidence should not be taken into consideration; it should. It should be taken into consideration, and due and proper weight given to it, but the number of witnesses should not be counted as a means of finding out a preponderance of opinion. The weight of evidence should be watched and carefully considered, and to arrive at whether it is satisfactory evidence or not it should be compared with what you can satisfy yourselves to be the indisputable facts of the case, and some facts there may be you are satisfied are indisputable. I do not think there is anything more I need say to you. If there is any point learned counsel desire me to call attention to I will call attention to it, but I do not think there is. Gentlemen, you will find for the plaintiff, therefore, if he has satisfied you that the defendant treated him negligently and that damage was thereby occasioned. If he did treat him negligently some damage was certainly occasioned, because he paid the defendant, I forget how much.

Sir EDWARD CLARKE: 17 guineas, my lord.

Mr. Justice DARLING: And if he paid 17 guineas for doing that which was worthless some damage was occasioned. Of course, if you find for the plaintiff it does not follow all the damage which the plaintiff says occurred to him occurred to him because of what the defendant did, even if what the defendant did was negligent, because there still remains, as Sir Edward Carson put, this possibility, that even if the defendant was negligent what he did may have had the smallest possible effect upon the sufferings or the losses of the plaintiff outside the loss of the 17 guineas. It may be that those microbes would have become active if the plaintiff had never seen the defendant. You may say to yourselves you are satisfied they would, or you are satisfied that they would not. You may say to yourselves you are satisfied if you find the defendant did do that which is negligent to the plaintiff, that but for that the plaintiff would not have had to pay this £400 and lost his leg, but it is only if you are satisfied of the negligence and of the resulting damage from it that you may give a verdict for the plaintiff with a sum commensurate with what you find to be the result of the damage. Gentlemen, you will take the case into your consideration and say whether you find the plaintiff's case is proved. If you do, you will say "Verdict for the plaintiff." If it is not proved you will say "Verdict for the defendant." If it is proved, then you will say "Verdict for the plaintiff" with such damages as you are satisfied resulted from what the defendant did to the plaintiff. If you would like to retire do so, and take any documents you like with you.

The FOREMAN of the JURY: My lord, cannot we have special terms?

Mr. JUSTICE DARLING: I have no power in the matter. I cannot order anything, but while you are out I will consider and see if anything can be done.

The Jury retired at 5.5 P.M., and returned into Court at 5.57 P.M.

The ASSOCIATE: Gentlemen, are you all agreed?

The FOREMAN of the JURY: Yes.

The ASSOCIATE: Do you find for the plaintiff or for the defendant?

The FOREMAN: We find for the plaintiff.

The ASSOCIATE: What damages?

The FOREMAN: £21.

The ASSOCIATE: £21.

The FOREMAN: 20 guineas; that is £21.

Sir EDWARD CLARKE: I ask your lordship for judgment for the plaintiff and a certificate for a special jury.

Mr. Justice DARLING: Yes. (*To the jury*): This is not a case in which I have any power to make an exceptional order. You have only served just your ordinary time. You will be discharged from serving again this week. You will get away two days earlier than you would have done.

Sir EDWARD CLARKE: I am told I ought to ask your lordship for an order for costs on the High Court scale.

Mr. Justice DARLING: Certainly. I have certified for a special jury. It is obviously a case for a special jury.

Sir EDWARD CLARKE: If your lordship pleases.

# THE METROPOLITAN WATER-SUPPLY.

*Report on Water Examinations for October, 1910.*

Dr. A. C. Houston, the Director of Water Examinations of the Metropolitan Water Board, has recently issued his report on the results of the chemical and bacteriological examinations of the London waters for the month ending Oct. 31st, 1910. This report shows that 1407 samples of water have been examined chemically or bacteriologically. Full details of the analyses are given in tables. The results of the analyses show that, speaking from chemical standards, the filtered waters have, generally speaking, maintained approximately their standard of purity, there being a slight deterioration only as regards the Lambeth and Southwark and Vauxhall supplies, and also as regards the Kempton Park and West Middlesex and Grand Junction supplies. The other filtered waters showed chemically a slight improvement. The bacteriological results were satisfactory and showed, on the whole, a slight improvement.

The value of the systematic and careful routine examinations which Dr. Houston is carrying out daily on the London waters cannot be too highly estimated. They are the best safeguard possible against any outbreak of water-borne disease in London, and in addition the results of these daily routine examinations must be of the greatest assistance to the engineers in charge of the filtration of the London waters at the various stations, since they form the only reliable check on the efficiency of the filtration processes.

*Results of the Storage of Water.*

Dr. Houston has recently published his sixth report on research work on "The Comparative Vitality of 'Uncultivated' and 'Cultivated' Typhoid Bacilli in Artificially Infected Samples of Raw River Water, with Special Reference to the question of Storage." This report is an exceedingly interesting and valuable contribution to our knowledge of the exact danger resulting from the possible infection of raw water with typhoid bacilli, and the results of Dr. Houston's investigations clearly indicate the manner in which the dangers from infection are best safeguarded. Dr. Houston deals in the first part of his report with the two varieties of typhoid bacilli which may be artificially experimented with—viz., "uncultivated" and "cultivated" bacilli. In the previous experiments made with typhoid bacilli "cultivated" bacilli were used which had been grown on agar cultures, and it might reasonably be argued that conclusions based on experiments with "cultivated" bacilli could not be applied to cases where the bacilli were uncultivated—i.e., taken fresh from a living patient. Professor E. J. McWeeney of Dublin has had under his care a patient whose urine was swarming with living typhoid bacilli, and Dr. Houston was, by the courtesy of Professor McWeeney, able to obtain from this patient living "uncultivated" typhoid bacilli for the carrying out of a valuable series of experiments detailed in his research report. The history of the case is given in detail, and it is of interest to note that the patient contracted typhoid fever as long ago as 1903 and was apparently completely cured after three months. Since that time the urine of the patient has contained swarms of typhoid bacilli, and apparently the patient has been the cause of infection of several cases of typhoid fever. On August 9th, 1910, Dr. Houston received 500 c.c. of the patient's urine and obtained from this by centrifugalisation great numbers of living typhoid bacilli. These were added to raw Thames river water, so that each cubic centimetre of water contained 770,000 organisms. The water was placed in a partially

filled stoppered bottle in a dark place. After one week only four living typhoid bacilli per cubic centimetre were present, and after 14 days it was found that no living typhoid bacilli remained in the water. Dr. Houston confirmed his scientific experiments by the practical one of drinking himself on the twenty-fourth day half a pint of the infected water with no harmful result. He states as his belief that, while the urine-polluted river water was grossly infective at the starting of the experiment, after 24 days it had become absolutely innocuous owing to the death of all the typhoid bacilli.

Dr. Houston made a second experiment of similar nature and found that at the end of one week no living typhoid bacilli remained in the water which had been grossly infected a week previously. On the twenty-third day and subsequently each day for four days Dr. Houston drank half a pint of the infected water with no harmful result to himself. He made comparable experiments with raw Thames water to which "cultivated" typhoid bacilli had been added. It was found that the cultivated organisms were more resistant to the effects of storage, and some living bacilli were found after five weeks' storage. The fact that the uncultivated typhoid bacilli die much more speedily in raw river water than their cultivated brethren is of far-reaching practical importance, and very reassuring, since the danger of drinking polluted water arises only from the possible presence of the "uncultivated" bacilli.

The conclusions of Dr. Houston's experiments go to further support what he has continually insisted upon in so many of his previous reports—viz., that adequate storage of raw water antecedent to filtration is the best possible safeguard against water-borne epidemic diseases, and that an adequately stored water is to be regarded as a "safe" water. Dr. Houston hopes that the day is not far distant when adequate storage of the whole of the London waters will be secured. At present this does not appear to be the case, though great improvements have recently been made in this respect.

In Addendum C, Dr. Houston gives the results of the examination of the pre-filtration water—i.e., representative samples of practically all the London water antecedent to filtration. The experiments on which the results are based were made on examinations of the water for the bacillus coli. Dr. Houston, from his investigations, has made some very valuable suggestions as regards weak points in the system of supply which might, without much difficulty, be remedied. No doubt these suggestions will be adopted at as early a date as possible.

In Addendum D an extremely interesting account is given of the subject of typhoid carriers. Unfortunately there is no legal provision enabling the carrier to be debarred from undertaking what occupation he pleases, notwithstanding the fact that a carrier who is engaged in the milk trade or in the preparation or handling of food may be a public danger.

The whole of this sixth research report is teeming with interest, and Dr. Houston is to be congratulated on a valuable and courageous addition to his previous excellent researches.

## THE HEALTH OF THE ARMY IN 1909.

### II.[1]

#### *Sanitation.*

MUCH attention is now being paid to the instruction of regimental officers and men in army sanitation. Over 400 officers were instructed and examined before promotion to captain, nearly all of whom passed the test successfully. The army school of sanitation at Aldershot is vigorously at work, regimental and medical officers and men, and members of the Officers Training Corps and the Territorial Force receiving instruction by lectures and demonstrations. At this institution, also, valuable experimental investigations have been carried on during the year in the direction of improving the filter water-cart and the exchange heater apparatuses in use for purifying water. The Griffith machine continues to be favourably spoken of. A new feature has been introduced by the utilisation of the steam generated in the sterilising process (that was formerly allowed to go to waste), as a means of filling the supply tanks, thus saving the labour of pumping.

The sanitary condition of *Camps* is reported generally to have been good; greater attention is being paid by all ranks to sanitary affairs; it is stated that the importance of sanitation is, perhaps, not sufficiently recognised by members of the Territorial Force, a circumstance, no doubt, due to the shortness of their period of training which hardly leaves sufficient time for its study. Large bodies of men, both Regulars and Territorials, have been encamped during the training season on very limited areas without any serious outbreak of disease; on Salisbury Plain over 80,000 troops were under canvas during the summer. At Caerwys, in Flintshire, the camp between August 1st and 15th, comprising roughly 14,000 men, "perhaps represents the largest body of Territorial troops ever brought together in a single encampment for so long a period. The camp was certainly unique in the fact that the water-supply had been condemned, and all water used for drinking purposes was sterilised by means of heat exchange apparatus." This speaks very well for the sanitary supervision of the camp; we hope, however, that it will not become a routine practice to mass many thousands together—chiefly untrained troops—on sites where the water-supply is unfit for drinking.

A change has been made in the source of lymph-supply for *Vaccination*. Formerly it was prepared at the Army Vaccine Institute at Aldershot; since September, 1909, it has been supplied from the Government Lymph Establishment at Hendon. Of the recruits enlisted 949 per 1000 had vaccination marks, and 0·4 per 1000 marks of small-pox. The proportion per 1000 bearing no marks either of small-pox or vaccination was 50·6. This shows a higher proportion of unprotected persons than has hitherto been noted. In the five years, 1891–95, the average was 27·7; in 1896–1900, it was 34; in 1901–05 it reached 39·3, in one year only (1903) having been above 40; in the last four years, 1906–09, the ratios have been 35·9, 42·8, 49·9, and 50·6. The matter is of little consequence for the army, because every recruit that needs it is either vaccinated or re-vaccinated. But if these figures are to be taken as generally applicable to the young adult male population, they indicate that a large amount of inflammable material is accumulating throughout the country.

#### *Infectious Diseases.*

It is stated on page 36 that "cases of infectious disease were much more numerous among the troops than in the previous year, due chiefly to excessive prevalence of scarlet fever and measles at certain large stations." This is not borne out by the figures in the tables, which show that for the acute specific fevers in Group A there were 2976 admissions in 1909, compared with 4460 in 1908. There were rather more cases of diphtheria and scarlet fever, but fewer cases of enteric fever and measles, and a large reduction in the admissions for influenza, 2032 compared with 3449 in 1908. None of the outbreaks appear to have been serious. The only real epidemic of enteric fever occurred at Kilworth Camp, in the Cork district, where 24 cases were admitted; the milk-supply came under suspicion and infection was traced to the presence of a female carrier on the farm whence the milk was derived; she had had an attack of enteric fever in 1903, and her subsequent movements had been followed for some time by the appearance of febrile attacks among those with whom she had come in contact, either directly or through the medium of the milk-supply. The outbreak was chiefly connected with the officer's messes, 14 officers and 9 servants being attacked. On examination the girl's blood was found to react with B. typhosus up to a dilution of 1 in 100, and the urine contained typical enteric bacilli. The milk used at the messes was said to have been boiled, but obviously this was not invariably the case.

#### *Barracks.*

Extensive improvements are being carried out in the housing of troops; some barracks, as at Dorchester and Newbridge, have been vacated, and others will be vacated shortly. The most important new works in hand are the Redford Barracks, near Edinburgh; new married quarters are being constructed at several stations.

[1] No. I. was published in THE LANCET of Feb. 25th, 1911, p. 534.

*The Mediterranean Area.*

The stations in the Mediterranean Command are Gibraltar, Malta, Crete, Cyprus, and Egypt. All these stations show a reduction in the admission-rate, except Gibraltar; all except Crete have a lower death-rate; and all without exception have a lower ratio constantly sick than in the previous five-year period. Gibraltar and Malta have the lowest admission rates (370·3 and 373·6 respectively), Egypt has the highest (672·9); the death-rates were 2·46 at Gibraltar, 2·97 in Malta, and 4·21 in Egypt. The average strength of the command was 15,948.

At *Gibraltar* no serious illness occurred, except an outbreak of 14 cases of Malta fever. There had been no incidence of the disease in the garrison since two isolated cases in 1907; the civil returns also showed not a single case in 1908, but in May, 1909, there were two cases among the civil inhabitants. Some admissions for fever occurred in the garrison in spring and early summer which were thought to be influenza; and in July the discovery of Phlebotomus pappatasii[2] on the Rock caused attention to be given to phlebotomus fever due to the sand-fly; some of these early cases may have been Malta fever, but the sanitary officer, Major C. E. P. Fowler, thinks this very doubtful. In September 11 cases were admitted from the military population, of a severe type, the infection being a mixed one with both M. melitensis and B. typhosus. The infection was, there is little doubt, derived from a herd of goats, some of which had been landed from Malta in April; these animals had a clean bill of health from Malta, but Major Fowler obtained a positive reaction for M. melitensis in two on arrival, and subsequently in four others; 13 out of the 14 Malta fever patients had been consuming milk from the dairy to which these goats belonged. "The fact, or coincidence, is mentioned for what it is worth. Proof would be impossible of attainment" To most people the sequence of occurrences would afford sufficient grounds for forming an opinion; but the curious point is that amongst the Gibraltar goats, numbering 300 or 400 (whose blood reaction is noted twice a year), a number of positive results has always been obtained, varying from 10 to 15 per cent., showing that this proportion of animals was possibly infected with M. melitensis, and yet no case occurred among the consumers of the milk until the arrival of the imported goats from Malta. Six cases of enteric fever were reported, all sporadic.

*Malta.*—The improvement in health of the troops at this station still continues; as compared with the previous quinquennial average, 1904 to 1908, the ratios for admission to hospital and men constantly sick have fallen from 540·8 and 35·54 to 373·6 and 24·47; the death-rate is 2·97 compared with 4·97. For the ten-year period, 1896–1905, the admissions averaged 748·2 per 1000, the constantly sick 47·78, and the deaths 7·44. Since the beginning of 1907 there have been practically no admissions for Malta fever; the reductions have been in influenza, some forms of venereal disease, and generally all round. The number of invalids sent home was higher than in 1908, owing to the large number of cases of tubercle of lung (17) and of heart disease (13). Enteric fever, unfortunately, shows an increase this year, 14 cases having been admitted. The outbreak coincided with a marked increase among the civil population. It is stated that none of the cases were attributable to insanitary conditions in barracks; five of them, however, came from Fort Manoel, where dry earth latrines are in use and flies abundant. They were believed to be connected with the arrival of a carrier case from India. The substitution of saponified cresol for dry earth in latrines might surely be carried out in Malta now that its efficacy has been demonstrated in India. Pyrexia of uncertain origin caused 235 admissions, a ratio of 44·6 per 1000, compared with 102·9 for the quinquennium. The cases were investigated by Lieutenant-Colonel C. Birt, who believes the disease to be identical with the pappataci fever of Dalmatia, infection being conveyed by means of Phlebotomus pappatasii. The fever is of two to five days' duration and not of a serious character. It was distributed all over the island, except at Imtarfa, near Citta Vecchia, which stands at 630 feet above the sea. There is a distinct relation between prevalence of the disease and the distribution of the sand-fly, and transmission by this means has been actually proved; the fly remains virulent for seven to ten days; no pathogenic organism has yet been identified. One case of Malta fever occurred in the garrison; the patient had drunk unboiled goat's milk in a restaurant in Valetta. Improvement has been effected in the sewerage arrangements, especially in the way of increased flushing; a large tank for storage of sea water is in course of construction on Kemmana Hill, which when finished will supply flushing water in ample quantity for the whole island. When Malta fever is abolished, or, rather, now that it has been abolished, and when the closets and sewers of the island are properly flushed, Malta will regain much of its old popularity as a delightful winter resort.

The small garrisons in *Crete* and *Cyprus* had good health during 1909, the constantly sick ratio being only 25·52 per 1000 in Crete and 16·54 in Cyprus. Two types of pyrexia prevailed in Crete, one resembling the pappataci fever, and lasting from one to three days; the other, of longer duration, from seven to ten days, and with more marked symptoms. Malaria diminished in Crete owing to vigorous anti-mosquito operations.

*Egypt.*—With an average strength of 5457, the admissions to hospital were 672·9, and the constantly sick 40·61 per 1000; the deaths were 4·21 per 1000. These ratios are all lower than those for the preceding quinquennium. Dysentery, pyrexia, pneumonia, and tonsillitis caused more admissions than the average; enteric fever and malaria were less prevalent, also venereal diseases. Nine cases of small-pox occurred in Cairo, one being hæmorrhagic and confluent, terminating fatally; the condition of this man as regards vaccination marks and history is not stated. There were 21 cases of enteric fever, mostly from the Abbassiyeh barracks, Cairo; three of these cases had been inoculated. It has to be admitted that it is very difficult to trace enteric fever to any single, or definite, source in Cairo; there are so many likely causes. It is noted that there was a plague of common house-flies in the spring, and again from September to the end of the year; but there was practically no enteric fever when the fly plague was worst. The water-supply is good at its origin, from the wells at Zeitoun and Rod-el-Farag, but the mains are laid in filth-sodden ground, and if they are not perfectly in order infection might easily gain access. Pasteur filters are in use in barracks. The milk-supply for the troops is entirely tinned; for officers' messes it is said to be invariably boiled. Possibly the disease is contracted outside barracks. Pyrexia of uncertain origin caused 431 admissions (79 per 1000), a considerable increase on the quinquennial ratio of 59·5 per 1000. A careful description is given of the cases, which are considered to belong to four or five different diseases. The phlebotomus is the common sand-fly of Cairo, and it is here that the fever appears to be endemic. It is noted that the rise and fall of the disease coincide with the rise and fall of the Nile and of the summer temperature. Possibly variable types of influenza and dengue are included under the same heading. The principal increase in 1909 occurred in the citadel at Cairo, and it is suggested that aggregation of cases in the hospital may have had something to do with this. The only point that seems to stand out quite clearly is that the disease exists definitely in Cairo and hardly at all at Alexandria. No deaths resulted, and the average number constantly sick was only 1·77 per 1000. It would seem, however, that here is an opportunity for a careful and detailed investigation by a skilled officer specially deputed for the purpose. A good deal of sanitary work has been carried out during the year; new infantry barracks have been commenced at Cairo; water-tanks have been protected against mosquitoes; Berkefeld filters have been installed throughout barracks, and the water is no longer boiled; the pressure of water is not sufficient to enable Chamberland filters to be used. At Alexandria the public water-supply, which is derived from a very foul source, the Mahmoudiyeh Canal, is treated on the Jewell system of filtration, and in barracks all drinking water is in addition passed through Chamberland or Berkefeld filters. Latrines and urinals are treated most successfully with cresol solution; there is no unpleasant smell, and flies are conspicuous by their absence.

*(To be continued.)*

[2] The spelling of this word is uncertain. It is spelt differently in different parts of the report. In a recent number of the R.A.M.C. Journal Lieutenant-Colonel Cecil Birt spells the name of the fly, P. pappatasii, which appears to us preferable. The original form seems to have been "pappatacifieber."—ED. L.

# MEDICINE IN THE ENCYCLOPÆDIA BRITANNICA.[1]

## II.—PURE MEDICINE.

WE proceed to review briefly some of the more important articles on general medical subjects, dealing in this note with the volumes from A to I.

The subject of Aphasia is discussed clearly and succinctly in an article of about two and a half columns in length. The views of Pierre Marie in opposition to current teaching on the subject are briefly mentioned in a footnote. The various meanings attaching to the word "catarrh," as applied to the effects of conditions of irritation of the respiratory and other mucous membranes, are described, though it is perhaps not made clear that an inflammatory reaction is the basis of catarrhal states. Catalepsy and its associations are described and referred to the class of functional nervous disorders, but this condition is also mentioned as occurring in association with epilepsy and grave forms of mental disease. Cramp is described as a painful spasmodic contraction of muscles. In addition to the common form of cramp in the limbs, which is stated to be associated frequently with a rheumatic or gouty tendency, other forms of muscular spasm are mentioned, including writer's cramp. Gastralgia is referred to as cramp of the stomach, which seems to us to apply too definite a pathology to this somewhat vague condition. The article on Cretinism describes the appearance of the cretin and differentiates this disease from Mongolism, achondroplasia, and infantilism. The use of thyroid extract in treatment is discussed. It would have been an advantage to indicate that the secretion of the thyroid gland, to the absence or deficiency of which the disease is attributed, is an internal secretion, in view of the fact that this work is intended for non-medical as well as professional readers.

The Pathology of the Digestive Organs is reviewed in a long article, in which the various general diseases and abnormalities of structure and function are enumerated and briefly described. In dealing with appendicitis, it is stated that it appears to be increasing in frequency, and that it is associated by many with the modern deterioration in the teeth. The former of these statements is probably correct, but the latter is open to question. Perityphlitis is mentioned as a separate condition with very similar symptomatology, and is regarded as "doubtless in former days frequently due to the appendix, an acute or chronic inflammation of the walls of the cæcum often leading to abscess formation outside the gut, with or without direct communication with the canal." This somewhat vague description is misleading, and the term perityphlitis might with advantage be dropped, since it is a relic of an erroneous interpretation of appendicular disease. In connexion with diseases of the colon, membranous colitis is described as a very severe inflammation, whereas from the description it is evident that under this heading the condition of mucous colic is included, the inflammatory factor in which is now regarded as doubtful, or at any rate subsidiary. In connexion with the subject of tuberculous abdominal disease the statement that "it is hardly possible that tubercular invasion of the mesenteric glands can ever occur unaccompanied by peritoneal infection" is certainly not in accordance with recent researches, which have clearly demonstrated that such an invasion may occur, even without any discoverable lesion in the intestinal mucous membrane. In other respects the article gives a useful *résumé* of the pathology of diseases of the digestive organs.

Diuretics are described and classified according to their mode of action. The article on Diphtheria is an admirable account of the main facts regarding this disease, its causation and treatment, and contains also a critical examination of some of the more important problems connected with its epidemiology. The conditions governing the general prevalence of diphtheria and its epidemic rise and fall are described; and the hypotheses which have been put forward to explain them, notably that of Dr. A. Newsholme, that diphtheria only becomes epidemic in years when the rainfall is deficient, are critically considered. The origin and use of antitoxin are well described and the results of its employment convincingly demonstrated. The article on Dysentery is also clearly and carefully written. The two varieties, amœbic and bacillary, are differentiated from one another, and the distinctions between the Shiga and Flexner strains of organisms in the bacillary form are brought out. The treatment is also discussed, and measures for prevention are enumerated. The subject of Dyspepsia is described in general and somewhat popular fashion, but useful advice is given in regard to treatment, notably in connexion with the quantity and nature of the food taken, the necessity for careful and efficient mastication, and the value of moderation and regularity.

Dreams are discussed in an interesting article, which also gives an account of the explanations that have been offered of their occurrence, including the views of classical and mediæval philosophers. Hallucination receives very detailed consideration in an article of no little interest. It is first defined and distinguished from illusion, then a classification is given, and the conditions under which hallucinations may occur, both in health and disease, are examined. The nature of the nervous processes underlying hallucination and the theories put forward by various psychologists are critically discussed. An interesting analysis is given of the evidence concerning so-called coincidental hallucinations—i.e., apparitions of persons known to be in distant places, more especially at or near the time of death. The results of the census of hallucinations made by the Society for Psychical Research are quoted. Hypochondriasis is defined in a short note about half a column in length, its symptoms and associations being outlined carefully. In the article on Hysteria the well-known definition of Möbius is quoted—viz., that it is "a state in which ideas control the body and produce morbid changes in its functions." The general and local manifestations of hysteria are very briefly stated. The fact that a hysterical attack may occur as an immediate sequel to an epileptic fit is mentioned, and a warning is given that in cases of petit mal the post-epileptic character of the hysterical symptoms is likely to be overlooked. Treatment is dismissed with but little notice, but the important distinction between hysteria and malingering is insisted upon.

A short but interesting note on Hydropathy contains a historical account of its development as a formal system of treatment and affords a summary of the various methods of applying water therapeutically which have been employed. The article on Hydrophobia deserves special commendation. It gives an admirable account of the disease as it occurs in dogs, and then a description of its characters in the human subject. The two forms in dogs—the furious and the dumb—are described in full detail, various stages being differentiated. A clear and intelligible account of the Pasteur treatment is given, and it is rightly pointed out that it is to be regarded as an anticipatory cure, since it is not exactly a treatment, being useless or nearly so when the disease is well established. Reference is also made to the recent attempts at actual treatment by means of antirabic serum by Babes and Lepp and by Tizzoni and Centanni. The value of the muzzling order as a means of eradicating the disease is discussed, and due tribute is paid to Mr. Walter Long, the Minister who so successfully enforced that order in this country. An interesting presentation of the chief facts regarding Hypnotism is contained in the article devoted to that subject. After a brief historical account of the chief discoveries in connexion with hypnotic states, the effects of suggestion are described and post-hypnotic results are considered. The theory of mental dissociation is carefully enunciated and its merits are pointed out. This theory regards hypnosis as a state of relative dissociation and assumes "a temporary functional depression of all or of many of the associations or nervous links between the neural dispositions." The medical applications of hypnotism and its possible dangers are discussed.

Influenza forms the subject of an interesting article in which the origin and spread of the disease are discussed as well as its symptomatology and treatment. The evidence that the dissemination of influenza occurs by human agency, and not, as was formerly supposed, by atmospheric influences, is given, and suggestions are offered with a view to lessening the spread of the disease in epidemics. The subject of Insanity forms the basis of a long article, containing a valuable and practical account of the ordinary forms of mental alienation, both

[1] Article I. was published in THE LANCET of Feb. 25th, 1911, p. 530.

congenital and acquired. The causes of insanity are enumerated. The various forms of idiocy, imbecility, and insanity are classified and described. The classifications given are practical and satisfactory. The legal aspects of insanity are also considered at some length. The treatment is discussed in a special section of the article, giving suggestions for the best methods of carrying out treatment sympathetically and effectively. Hospitals for the acutely insane, with outdoor departments for advice and diagnosis of early cases, and colonies for the chronic insane patients are recommended. From the above brief notes it will be gathered that the medical writers for the Encyclopædia Britannica have realised well their responsibilities, and on the whole have also performed the difficult task of writing on highly technical subjects in such a way as to be informatory to the general public while preserving a position of scientific authority. The pure medicine in the remaining volumes of the issue, containing as they do the inclusive article on Medicine, will be considered later.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, March 2nd, 1833.

### ST. THOMAS'S HOSPITAL.

#### GLANDERS IN THE HUMAN SUBJECT.

"A new disease is opened to us" said some of the medical officers of this hospital, after examining the body of one of Dr. Williams's patients on Monday, February the 18th, in the dead-house. Drs. Williams, Elliotson, Roots, and Bright, and Mr. Travers and Mr. Youatt (London University), with several other professional gentlemen and a crowd of students, were present on this occasion. The corpse was that of a man, who had been admitted ten days or a fortnight before, for we hardly know what, nor could learn. The case progressed up to Thursday the 14th, when a symptom appeared which Dr. Williams supposed to be "gout in the head." The attention of Dr. Elliotson was soon after called to the man, who, when seen by that gentleman, presented the following diseased characters. Several large phlyzaceous pustules appeared on the face and neck; a profuse stinking discharge issued from each nostril; there was swelling and bright redness of the eyelids, so as to close the eyes, and gangrenous inflammation of the right temple and adjoining part of the nose; soft fluctuating swellings, some red, some livid, some pinkish arose in the upper and lower extremities, and one of great size was on the head. His age was 23, but he appeared to be 40.

"This man has glanders," observed Dr. Elliotson, immediately; "have you ever been in a stable, my man?"—"Yes, Sir, I have been in stables all my life."—"Have you had anything to do with glandered horses?"—"Oh, yes, Sir, master had a glandered horse twelve months ago."—"And did any of the snivel ever fall upon any part of your body?"—"Yes, Sir, I have had my hand covered with it."

The man then said, "Oh, then I've got the glanders, and I shall die, but so happy, because I die through the horses, and I know what I've got." There was a scar on his right hand. He eventually became delirious, and was obliged at last to be strapped down; and a short time before he died, kept calling out, during an hour or more, "Stop that horse! stop that horse."

The inspection of the body, which was opened by Mr. Rush, excited great interest. Dr. Elliotson entered the dead-house under the certain expectation, that the result would tend to establish the position so indisputably urged in his paper, in the 16th volume of the *Medico-Chirurgical Transactions*, and verified in several instances in this journal, that glanders was communicable from the horse to man.* Dr. Williams did not entertain the same impression, either not crediting, or appearing not to be aware of, the facts on record tending to establish the fact of the occurrence of this disease in man. Neither did Mr. Travers appear to have made up his mind in the affirmative of the question. Before leaving the place of autopsy, however, no doubt on the subject seemed to exist in the breasts of either of the gentlemen present. Mr. Youatt (the lecturer on veterinary medicine) attended, on invitation, to witness the inspection; and to this gentleman reference was made for his opinion on each peculiar morbid appearance. The representations of Mr. Youatt tended in most instances to confirm the views entertained by Dr. Elliotson, and also, apparently with equal conviction, by Dr. Roots, with regard to the case. The ulcerations did not all present an equally glanderous aspect; but in most of them, especially in one found in the trachea, Mr. Youatt observed, that it presented just such an appearance as he should have expected to find in the horse—rather shallower however in the man than in the brute. He called it a true glanderous chancre. The frontal sinus was filled with discharge, and the membrane of the septum was ulcerated, and presented exactly the appearance seen in that part of glandered horses. At the bottom of the suppurations and in the schneiderian membrane, several such granules were found as appear in the horse in the early stage of the disease, and the existence of which granules has caused the French to call it the "tubercular disease."

The case, in short, so precisely agrees with all the other published cases of alleged glanders in the human subject, that not a doubt can reasonably be entertained on the matter.

(Here follow, in the original, four columns entitled "Mr. Youatt's Report of the above Case." We have not transcribed them for lack of space.)

* A case, if we mistake not, is also on record in some of the old Journals, which has not subsequently been quoted, where a great kitchen knife, which had been employed in skinning a glandered horse, was afterwards used by a cook, who accidentally cut himself with it, and died in a short time with all the symptoms of glanders.—REP. L. March 2, 1833.

## VITAL STATISTICS.

#### HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7526 births and 5345 deaths were registered during the week ending Feb. 25th. The annual rate of mortality in these towns, which had been equal to 16·0, 17·6, and 17·2 per 1000 in the three preceding weeks, declined to 16·2 in the week under notice, and was equal to the average annual death-rate recorded in these towns and also in London during the first eight weeks of the current quarter. The annual death-rates in the 77 towns during last week ranged from 7·0 in Bury, 7·7 in Hornsey, 8·3 in King's Norton, and 8·4 in Handsworth (Staffs), to 21·3 in St. Helens, 21·9 in Wigan, 22·0 in Stoke-on-Trent, and 25·9 in Middlesbrough. The 5345 deaths from all causes in the 77 towns showed a decline of 328 from the number returned in the previous week, and included 601 which were referred to the principal epidemic diseases, against 477, 525, and 621 in the three preceding weeks; of these 601 deaths, 359 resulted from measles, 91 from whooping-cough, 53 (of infants under two years of age) from diarrhœa, 51 from diphtheria, 33 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The fatal cases of measles, which had steadily increased from 160 to 333 during the first seven weeks of the current year, further rose last week to 359, and caused the highest annual rates of 2·5 in Coventry, 2·6 in West Ham, 4·2 in Aston Manor, 5·4 in Devonport, and 7·5 in Sheffield. The deaths from whooping-cough, which had increased from 85 to 132 in the five preceding weeks, declined last week to 91; the highest death-rates from this disease were 1·2 in Willesden, in Reading, and in Norwich, 1·4 in Middlesbrough, and 1·5 in Bootle. The 53 deaths of infants under two years of age attributed to diarrhœa showed a decline of 11 from the number recorded in the previous week. The fatal cases of diphtheria, which had been 58 and 55 in the two preceding weeks, further declined last week to 51, and included 11 in London, 7 in Leeds, 5 in Manchester, 4 in Portsmouth, and 3 in Blackburn. The deaths referred to scarlet fever, which had been 21 in each of the three preceding weeks, rose to 33 last week; 6 deaths were registered in London, 5 in Liverpool, 3 in Manchester, and 2 each in Stoke-on-Trent, in Blackburn, and in Sheffield. The 14 fatal cases of enteric fever showed a decline of 2 from the number recorded in the previous week, and included 4 in London and its suburban districts. The number of scarlet fever patients under treatment in

the Metropolitan Asylums and the London Fever Hospital, which had been 1264, 1257, and 1276 in the three preceding weeks, declined to 1242 on Saturday last; 138 new cases of this disease were admitted to these hospitals during last week, against 130, 147, and 166 in the three preceding weeks. These hospitals also contained on Saturday last 906 cases of diphtheria, 586 of measles, 195 of whooping-cough, and 44 of enteric fever; in addition to these 35 cases of small-pox were admitted to the small-pox hospitals of the Metropolitan Asylums Board during last week. The 1540 deaths from all causes in London last week (showing a decline of 73 from the number in the previous week) included 395 which were referred to diseases of the respiratory system, against 365, 404, and 421 in the three preceding weeks. In the 77 towns 173 deaths resulted from different forms of violence, against 187 and 163 in the two preceding weeks, and 391 inquest cases were registered. The causes of 36, or 0·7 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London and its eight suburban districts, in Manchester, Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Salford, and in 42 other smaller towns; the 36 uncertified causes of death in the 77 towns last week included 11 in Liverpool, 3 in Stoke-on-Trent, 3 in Birmingham, and 2 each in St. Helens, Rochdale, and Sunderland.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 888 births and 641 deaths were registered during the week ending Feb. 25th. The annual rate of mortality in these towns, which had been 18·2, 19·8, and 19·0 per 1000 in the three preceding weeks, declined again to 17·4 in the week under notice. During the first eight weeks of the current quarter the death-rate in these towns averaged 17·0 per 1000, and was 0·8 above the mean rate during the same period in the 77 English towns. The annual death-rates last week in the eight Scotch towns ranged from 14·6 and 15·4 in Aberdeen and Edinburgh to 20·8 in Perth and 25·0 in Dundee. The deaths from all causes in the eight towns last week showed a decrease of 57 from the number returned in the previous week, and included 76 which were referred to the principal epidemic diseases, against 63, 69, and 68 in the three previous weeks; these 76 deaths were equal to an annual rate of 2·1 per 1000, the highest epidemic rates being 4·2 in Perth and 5·9 in Leith. Of these 76 deaths from the principal epidemic diseases, 39 resulted from whooping-cough, 12 from diarrhœa, 9 from diphtheria, 8 from scarlet fever, 6 from measles, and 2 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had increased from 14 to 45 in the four preceding weeks, declined to 39 last week, of which 22 occurred in Glasgow, 8 in Leith, 5 in Dundee, and 3 in Edinburgh. The 12 deaths attributed to diarrhœa showed an increase of 3 upon the number returned in the previous week, and included 8 of infants under two years of age. The deaths from diphtheria, which had been 11 and 7 in the two preceding weeks, rose to 9 last week; 3 deaths were recorded in Glasgow and 2 in Edinburgh. The 8 fatal cases of scarlet fever showed an increase of 7 upon the number in the previous week, and included 4 deaths in Glasgow. The 6 deaths from measles showed a slight increase upon recent weekly numbers; 5 deaths were registered in Edinburgh. The 2 fatal cases of enteric fever occurred in Glasgow. The deaths in the eight towns referred to diseases of the respiratory system, which had increased from 117 to 181 in the four preceding weeks, declined last week to 139, but were 42 above the number returned in the corresponding week of last year. The deaths resulting from different forms of violence, which had been 28 and 22 in the two preceding weeks, further declined last week to 21. Of the 641 deaths from all causes in the eight towns last week, 180, or 28 per cent., occurred in public institutions. The causes of 25, or 3·9 per cent., of the total deaths were not certified or not stated; in the 77 towns last week the proportion of uncertified causes of death did not exceed 0·7 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 596 births and 466 deaths were registered during the week ending Feb. 25th. The annual rate of mortality in these towns, which had been 19·6, 24·1, and 22·7 per 1000 in the three preceding weeks, declined again last week to 20·9, and was equal to the average annual rate recorded in these towns during the first eight weeks of the current quarter. During the same period the death-rate in the 77 largest English towns did not exceed 16·2 per 1000, and in the eight principal Scotch towns it was equal to 17·0 per 1000. The annual death-rate last week was equal to 23·8 in Dublin, 18·5 in Belfast, 24·7 in Cork, 22·6 in Londonderry, 9·6 in Limerick, and 13·6 in Waterford; in the 16 smallest of the Irish town districts the annual death-rate last week averaged 21·6 per 1000. The 466 deaths from all causes in the 22 town districts last week showed a decrease of 41 upon the number returned in the previous week, and included 25 which were referred to the principal epidemic diseases, against 26 and 29 in the two previous weeks; these 25 deaths were equal to an annual rate of 1·1 per 1000, the highest epidemic rates being 2·6 in Dublin and 4·8 in Sligo. Of these 25 deaths from the principal epidemic diseases, 10 resulted from whooping-cough, 5 from diarrhœa, 3 from measles, 3 from scarlet fever, 2 from diphtheria, and 2 from enteric fever, but not one from small-pox. The deaths from whooping-cough, which had been 9, 8, and 11 in the three preceding weeks, were 10 last week, and included 7 in Dublin. The 5 deaths from diarrhœa included 3 of infants under two years of age; 4 other deaths at this age were referred to enteritis. Of the 3 deaths from scarlet fever, 2 occurred in Dublin. The 3 fatal cases of measles, 2 of enteric fever, and 2 of diphtheria were all recorded in Dublin. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 141 and 137 in the two preceding weeks, declined to 110 in the week under notice. The 466 deaths from all causes last week included 127, or 27 per cent., which occurred in public institutions. The causes of 12, or 2·6 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes last week did not exceed 0·7 per cent. in the 77 English towns, but was equal to 3·9 per cent. in the principal Scotch towns.

### VITAL STATISTICS OF LONDON DURING JANUARY, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·1 per 1000 of the population, provisionally estimated at 4,912,054 persons in the middle of this year. In the three preceding months the rates were 5·9, 5·0, and 4·3 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, Chelsea, the City of Westminster, Hampstead, and Holborn; and the highest rates in Stoke Newington, Finsbury, Bethnal Green, Bermondsey, and Battersea. Scarlet fever continued to show a declining prevalence last month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in St. Pancras, Stoke Newington, Battersea, Wandsworth, and Woolwich. The Metropolitan Asylums Hospitals contained 1280 scarlet fever patients at the end of last month, against 1825, 1727, and 1574 at the end of the three preceding months; the weekly admissions averaged 130, against 229, 183, and 155 in the three preceding months. Diphtheria was more prevalent than it had been in the preceding month; this disease was proportionally most prevalent last month in Hammersmith, Islington, Stoke Newington, the City of London, and Bermondsey. There were 842 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 866 and 827 at the end of the two preceding months; the weekly admissions averaged 107, against 106 and 95 in the two preceding months. The prevalence of enteric fever showed a considerable decline from that recorded in other recent months; the greatest proportional prevalence of this disease was recorded in Finsbury, Bethnal Green, Poplar, Bermondsey, and Lewisham. The number of enteric fever

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1911.

*(Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1911. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa and enteritis (under 2 years). | Total. | Annual rate per 1000 persons living. | | |
| LONDON... ... ... ... ... ... ... ... | 4,912,054 | — | 598 | 516 | — | 74 | 6 | 22 | 324 | 2 | 1542 | 4·1 | — | 322 | 14 | 55 | 104 | — | 18 | — | 71 | 584 | 1·5 | 5915 | 16·5 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... ... | 154,072 | — | 13 | 10 | — | 2 | — | 1 | 9 | — | 35 | 3·0 | — | 3 | — | 2 | 4 | — | 1 | — | 5 | 15 | 1·3 | 166 | 14·9 |
| Kensington ... ... ... ... ... ... | 185,607 | — | 18 | 12 | — | 1 | — | 1 | 12 | — | 44 | 3·1 | — | 30 | 1 | — | 6 | — | — | — | 1 | 38 | 2·7 | 253 | 19·2 |
| Hammersmith ... ... ... ... ... ... | 129,140 | — | 15 | 21 | — | — | — | — | 5 | — | 41 | 4·1 | — | 14 | 1 | 7 | 4 | — | 1 | — | 3 | 30 | 3·0 | 198 | 20·8 |
| Fulham ... ... ... ... ... ... ... ... | 186,190 | — | 15 | 23 | — | 2 | — | 4 | 8 | — | 52 | 3·6 | — | 12 | 1 | 4 | 2 | — | 1 | — | 1 | 21 | 1·5 | 179 | 13·1 |
| Chelsea ... ... ... ... ... ... ... ... | 75,673 | — | 4 | 3 | — | — | — | — | 3 | — | 10 | 1·7 | — | 2 | — | — | 1 | — | — | — | — | 3 | 0·5 | 95 | 17 0 |
| City of Westminster ... ... ... ... ... | 165,593 | — | 11 | 10 | — | 2 | — | 2 | 5 | — | 30 | 2·4 | — | 1 | — | — | — | — | — | — | 1 | 2 | 0·2 | 143 | 12·7 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone ... ... ... ... ... ... | 124,373 | — | 12 | 11 | — | 1 | — | 1 | 9 | — | 34 | 3·6 | — | 14 | — | — | 3 | — | — | — | 1 | 18 | 1·9 | 172 | 19·2 |
| Hampstead ... ... ... ... ... ... ... | 97,288 | — | 11 | 4 | — | 2 | — | 2 | 5 | — | 24 | 3·2 | — | — | — | 1 | 1 | — | — | — | — | 2 | 0·3 | 70 | 10·6 |
| St. Pancras ... ... ... ... ... ... ... | 238,187 | — | 37 | 31 | — | 1 | — | 1 | 11 | — | 81 | 4·4 | — | 25 | 1 | 2 | 10 | — | 1 | — | 2 | 41 | 2·2 | 338 | 19·3 |
| Islington ... ... ... ... ... ... ... | 355,550 | — | 40 | 67 | — | 6 | — | 1 | 17 | 1 | 132 | 4·8 | — | 37 | 1 | 6 | 9 | — | 2 | — | 7 | 62 | 2·3 | 467 | 17·8 |
| Stoke Newington ... ... ... ... ... ... | 55,260 | — | 10 | 11 | — | — | — | — | 4 | — | 25 | 5·9 | — | 1 | — | — | 2 | — | — | — | — | 3 | 0·7 | 57 | 14·0 |
| Hackney ... ... ... ... ... ... ... ... | 242,388 | — | 34 | 22 | — | 2 | — | — | 14 | — | 72 | 3·9 | — | 11 | 2 | — | — | — | — | — | 3 | 16 | 0·9 | 249 | 14·0 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn ... ... ... ... ... ... ... ... | 52,484 | — | 6 | 4 | — | — | — | — | 3 | — | 13 | 3·2 | — | 4 | — | — | — | — | — | — | — | 4 | 1·0 | 53 | 14·2 |
| Finsbury ... ... ... ... ... ... ... ... | 93,874 | — | 8 | 10 | — | 3 | — | 1 | 19 | — | 41 | 5·7 | — | 19 | — | 2 | 4 | — | — | — | 1 | 26 | 3·6 | 168 | 24·1 |
| City of London ... ... ... ... ... ... | 16,069 | — | 2 | 4 | — | — | — | — | — | — | 6 | 4·9 | — | 1 | — | — | — | — | — | — | — | 1 | 0·8 | 27 | 24·1 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... ... | 113,981 | — | 8 | 9 | — | 1 | — | — | 12 | — | 30 | 3·4 | — | 9 | — | 1 | 3 | — | — | — | 1 | 14 | 1·6 | 184 | 22·0 |
| Bethnal Green ... ... ... ... ... ... | 131,855 | — | 10 | 12 | — | 6 | — | 1 | 23 | 1 | 53 | 5·2 | — | 6 | — | 1 | 6 | — | 1 | — | 5 | 19 | 1·9 | 189 | 18·9 |
| Stepney ... ... ... ... ... ... ... ... | 316,269 | — | 32 | 35 | — | 7 | — | 3 | 30 | — | 107 | 4·4 | — | 14 | 1 | 2 | 7 | — | 3 | — | 5 | 32 | 1·3 | 389 | 16·7 |
| Poplar ... ... ... ... ... ... ... ... | 172,917 | — | 17 | 17 | — | 7 | 2 | — | 13 | — | 56 | 4·2 | — | 13 | — | 5 | 5 | — | 2 | — | 1 | 26 | 2·0 | 253 | 19·7 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark ... ... ... ... ... ... ... | 212,560 | — | 30 | 22 | — | 4 | 2 | — | 14 | — | 72 | 4·4 | — | 23 | — | 2 | 5 | — | — | — | 5 | 35 | 2·1 | 319 | 20·5 |
| Bermondsey ... ... ... ... ... ... ... | 126,919 | — | 14 | 22 | — | 5 | — | 1 | 11 | — | 53 | 5·4 | — | 15 | — | — | 4 | — | 2 | — | 4 | 25 | 2·6 | 206 | 21·7 |
| Lambeth ... ... ... ... ... ... ... ... | 330,000 | — | 39 | 21 | — | 6 | — | 2 | 16 | — | 84 | 3·3 | — | 10 | 2 | 2 | 4 | — | 3 | — | 6 | 27 | 1·1 | 364 | 14·9 |
| Battersea... ... ... ... ... ... ... ... | 190,434 | — | 32 | 26 | — | 2 | — | — | 13 | — | 73 | 5·0 | — | 29 | — | 6 | 8 | — | — | — | 7 | 50 | 3·4 | 249 | 18·2 |
| Wandsworth ... ... ... ... ... ... ... | 314,087 | — | 60 | 32 | — | 3 | — | — | 18 | — | 113 | 4·7 | — | 8 | — | 4 | 8 | — | — | — | 5 | 25 | 1·0 | 270 | 11·8 |
| Camberwell ... ... ... ... ... ... ... | 289,130 | — | 42 | 18 | — | 4 | — | 1 | 23 | — | 88 | 4·0 | — | 13 | 2 | 3 | 5 | — | 1 | — | 2 | 26 | 1·2 | 333 | 15·6 |
| Deptford ... ... ... ... ... ... ... ... | 120,715 | — | 16 | 7 | — | 2 | 2 | — | 9 | — | 36 | 3·9 | — | 2 | — | 1 | 1 | — | — | — | 1 | 5 | 0·5 | 125 | 14·2 |
| Greenwich ... ... ... ... ... .. ... | 114,872 | — | 15 | 16 | — | — | — | — | 5 | — | 36 | 4·1 | — | — | — | 1 | — | — | — | — | — | 1 | 0·1 | 90 | 10·4 |
| Lewisham ... ... ... ... ... .. ... | 169,078 | — | 14 | 21 | — | 4 | — | — | 10 | — | 49 | 3·8 | — | 4 | 2 | 2 | 1 | — | — | — | 1 | 10 | 0·8 | 166 | 13·3 |
| Woolwich... ... ... ... ... ... ... | 137,489 | — | 32 | 15 | — | — | — | — | 2 | — | 49 | 4·6 | — | 2 | — | 1 | 1 | — | — | — | 3 | 7 | 0·7 | 143 | 14·5 |
| Port of London ... ... ... ... ... ... | — | — | 1 | — | — | 1 | — | — | 1 | — | 3 | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

patients under treatment in the Metropolitan Asylums Hospitals, which had been 134 and 88 at the end of the two preceding months, had further declined to 68 at the end of last month; the weekly admissions averaged 7, against 16 and 11 in the two preceding months. Erysipelas was proportionally most prevalent in Finsbury, Bethnal Green, Stepney, Bermondsey, and Camberwell. The 22 cases of puerperal fever notified during the month included 4 in Fulham, 3 in Stepney, and 2 each in the City of Westminster, Hampstead, and Lewisham. Of the 2 cases notified as cerebro-spinal meningitis, 1 belonged to Islington and 1 to Bethnal Green.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the several boroughs. During the four weeks ending Jan. 28th the deaths of 5915 London residents were registered, equal to a corrected annual death-rate of 16·5 per 1000, against 17 4 and 15 8 in the two preceding months. The death-rates last month ranged from 10·4 in Greenwich, 10·6 in Hampstead, 11·8 in Wandsworth, 12·7 in the City of Westminster, 13·1 in Fulham, and 13·3 in Lewisham, to 20·5 in Southwark, 20·8 in Hammersmith, 21·7 in Bermondsey, 22·0 in Shoreditch, and 24·1 in Finsbury and in the City of London. The 5915 deaths from all causes included 322 which were referred to measles, 14 to scarlet fever, 55 to diphtheria, 104 to whooping-cough, 18 to enteric fever, and 71 (among children under two years of age) to diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded in Chelsea, the City of Westminster, Hampstead, Deptford, and Greenwich; and the highest rates in Kensington, Hammersmith, Finsbury, Bermondsey, and Battersea. The 322 deaths from measles were equal to the number recorded in the previous four weeks, but were nearly double the corrected average number for the first four weeks of the years 1906–10; the highest death-rates from measles last month occurred in Kensington, St. Marylebone, Finsbury, Bermondsey, and Battersea. The 14 fatal cases of scarlet fever were equal to only one-third of the corrected average number; of these 14 deaths, 2 belonged to Hackney, 2 to Lambeth, 2 to Camberwell, and 2 to Lewisham. The 55 fatal cases of diphtheria were 13 fewer than the corrected average number; this disease was proportionally most fatal in Hammersmith, Fulham, Finsbury, Poplar, and Battersea. The 104 deaths from whooping-cough were 11 below the corrected average number; this disease showed the greatest proportional mortality in St. Pancras, Finsbury, Bethnal Green, and Battersea. The 18 fatal cases of enteric fever were slightly above the corrected average number, and included 3 in Stepney, 3 in Lambeth, 2 in Islington, 2 in Poplar, and 2 in Bermondsey. The 71 deaths from diarrhœa and enteritis among children under two years of age included 7 in Islington and in Battersea, 6 in Lambeth, and 5 each in Paddington, Bethnal Green, Stepney, Southwark, and Wandsworth. In conclusion, it may be stated that the aggregate mortality in London from the principal infectious diseases (excluding diarrhœa) was 26 per cent. above the average.

## THE SERVICES.

### ROYAL ARMY MEDICAL CORPS.

THE undermentioned Lieutenants to be Captains (dated Jan. 29th, 1911):—George F. Dawson, Thomas McC. Phillips, Harry V. B. Byatt, Harold S. Dickson, Ronald E. Todd, Gerard Petit, Forbes J. Stuart, John B. Hanafin, Harold Gibson, William R. O'Farrell, John A. Renshaw, Cecil A. T. Conyngham, Dalziel B. McGrigor, Richard G. S. Gregg, William A. Spong, Herbert W. Carson, Henry P. Hart, Francis T. Dowling, Richard F. O'T. Dickinson, Harold T. Treves, James C. L. Hingston, Arthur E. B. Jones, Benjamin A. Odlum, Alexander Hendry, Charles P. O'Brien Butler, John R. Lloyd, and James F. Grant.

Major John H. Rivers retires on retired pay (dated Feb. 25th, 1911).

Lieutenant-Colonel J. Will, at present in medical charge of the troops at Kinsale, has been selected for the appointment of Staff Officer to the Administrative Medical Officer, Northumbrian Division, at Richmond, Yorks, with effect from April 1st next. Lieutenant-Colonel M. O'D. Braddell, commanding the Station Hospital at Lahore, has been granted six months' leave of absence on medical certificate. Lieutenant-Colonel W. W. Pike, D.S.O., in charge of the Military Hospital at Tidworth Park, has been placed under orders for service in Egypt. Lieutenant-Colonel C. W. Johnson, from Gibraltar, has taken over charge of the Military Hospital at Bulford Camp, Salisbury Plain. Major D. J. Collins has been appointed to officiate as Staff Officer to the Principal Medical Officer of the Irish Command. Major G. A. Moore, on the completion of the tenure of his appointment, has been transferred from the medical charge of the Royal Military Academy, Woolwich, for duty at Chatham as Specialist in Laryngology. Major F. W. Begbie, from Colchester, has been placed under orders to join at Tidworth Park as Assistant Administrative Medical Officer for Royal Army Medical Corps Training. Major H. D. Packer has been transferred from Devonport to Exeter. Major G. H. Goddard, from Alderney, has taken up duty at Shorncliffe. Captain G. S. C. Hayes, from the London District, has been appointed Medical Officer to the 1st Life Guards at Windsor. Captain E. B. Booth has been appointed for duty in the Irish Command. Captain J. G. Gill has been granted six months' general leave of absence home from India. Captain J. T. Johnson has been transferred from Sheffield to Newcastle. Captain R. J. Cahill, on completion of a tour of service in India, has been posted to the Curragh Camp for duty. Captain A. C. Vidal, from Pretoria, has taken up duty at Bloemfontein. Captain C. D. Myles, from Cosham, has joined at Gosport. Captain A. C. Amy has been appointed Specialist in Radiography and Electrical Science to the Seventh (Meerut) Division. Lieutenant H. G. Robinson has been transferred from Sheffield to Litchfield. Lieutenant G. Rollaston has been appointed to the West African Medical Staff, Sierra Leone Protectorate, from the Special Reserve. Lieutenant S. W. Kyle, from Mullingar, has taken up duty at Belfast. Lieutenant P. E. C. Pottinger has embarked for a tour of service in India.

### INDIAN MEDICAL SERVICE.

Colonel C. H. Beatson has arrived home on leave. Colonel G. W. P. Dennys has taken over the duties of Principal Medical Officer of the Derajat and Bannu Brigades. Lieutenant-Colonel A. J. Macnabb has been appointed Presidency Surgeon of Kashmir by the Foreign Department of the Government of India. The Honourable Lieutenant-Colonel C. Mactaggart, Inspector-General of Prisons in the United Provinces, has been granted leave of absence from India for one year and eight months. Lieutenant-Colonel A. W. Dawson has been appointed to hold Civil Medical Charge of Roorkee Cantonment. Lieutenant-Colonel J. Crimmin, V.C., C.I.E., has been appointed by H.E. the Governor of Bombay to act as Presidency Surgeon, in succession to Major S. H. Burnett, proceeding on leave. Lieutenant-Colonel R. J. Marks has been posted as Civil Surgeon to Gorakhpur. Lieutenant-Colonel W. A. Sykes has arrived home on leave of absence from India. Major A. W. T. Buist has been appointed Civil Surgeon at Ambala. Major W. Selby has been transferred from Gorakhpur to Lucknow as Civil Surgeon. Major T. B. Kelly has been appointed a Specialist in Ophthalmology. Major J. M. Crawford, on return from leave, has taken over duty as Civil Surgeon of Benares. Major A. Miller, Madras Presidency, has arrived home on leave. Captain W. J. Powell, on return from furlough, has been appointed to officiate as Superintendent of the Central Jail at Jubbulpore. Captain C. W. Cazaly has been appointed Specialist in Advanced Operative Surgery to the Fifth (Mhow) Division. Captain D. N. Anderson has been granted six months' extension of his leave, on medical certificate. Captain G. Fowler, civil surgeon of Akola, has been deputed to attend the investigations in connexion with malarial fevers at Amritsar. Captain C. A. F. Hingston, personal assistant to the surgeon-general with the government of Madras, has been appointed Medical Inspector of Factories in the Madras Presidency. Captain C. Dykes has been transferred from Saharanpur to Jaunpur as Civil Surgeon. Captain E. T. Harris has been granted eight months' leave of absence from India. Captain F. F. Elwes, Surgeon to H.E. the Governor of Madras, has been appointed District Medical and Sanitary Officer at Cuddapah. The services of

Captain C. R. O'Brien have been placed permanently at the disposal of the Government of Eastern Bengal and Assam. Captain D. Munro, Bengal Presidency, has arrived home on leave. Lieutenant W. T. Keyworth has been appointed Specialist in Midwifery and Diseases of Women and Children to the Sixth (Poona) Division. Lieutenant A. A. C. McNeill has been appointed to officiate in medical charge of the 51st Sikhs and No. 3 Company Sappers and Miners at Peshawar.

SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

The undermentioned lieutenants are confirmed in their rank:—James B. Williamson, Claude Johnson, John Adams, David T. M. Large, David T. Richardson, William L. Webster, and Frederick W. Lumsden.

TERRITORIAL FORCE.

*Royal Field Artillery.*

1st South Midland (Gloucestershire) Brigade, Royal Field Artillery: Surgeon-Captain James R. Bibby resigns his commission (dated Feb. 25th, 1911).

*Royal Army Medical Corps.*

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Edwin A. Houchin is restored to the establishment (dated Dec. 15th, 1910).

5th London Field Ambulance, Royal Army Medical Corps: Lieutenant Robert Corfe to be Captain (dated Dec. 1st, 1910).

3rd Northumbrian Field Ambulance, Royal Army Medical Corps: August Frederick Perl to be Lieutenant (dated Jan. 14th, 1911).

3rd London (City of London) Field Ambulance, Royal Army Medical Corps: Lieutenant Harold A. T. Fairbank to be Captain (dated August 30th, 1910).

1st Scottish General Hospital, Royal Army Medical Corps: The undermentioned officers retire under the provisions of Paragraph 75 of the Territorial Force Regulations (dated Feb. 25th, 1911):—Lieutenant-Colonel John Gordon and Major George Rose.

*For attachment to Units other than Medical Units.*—Major John Alfred Masters, from the 2nd London (City of London) Field Ambulance, Royal Army Medical Corps, to be Major (dated Jan. 23rd, 1911).

*Attached to Units other than Medical Units.*—Lieutenant Alan L. S. Tuke to be Captain (dated Dec. 10th, 1910). Lieutenant-Colonel Charles C. Greig retires under the provisions of Paragraph 116 of the Territorial Force Regulations, and is granted permission to retain his rank and to wear the prescribed uniform (dated Feb. 25th, 1911). Lieutenant Edward Oliphant resigns his commission (dated Feb. 25th, 1911). Major James A. Rigby resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Feb. 22nd, 1911).

*Unattached List for the Territorial Force.*—Stuart McDonald to be Second Lieutenant for service with the Durham University Contingent, Senior Division, Officers Training Corps (dated Feb. 1st, 1911).

STAFF TOUR FOR R.A.M.C. OFFICERS.

The following officers assembled at Colchester and took part in a medical staff tour which was held from Feb. 27th to March 2nd inclusive:—Surgeon-General J. C. Dorman, C.M.G.; Brigadier-General J. H. L. Haldane, C.B., D.S.O. (General Staff); Lieutenant-Colonel M. W. Russell, Lieutenant-Colonel W. G. Birrell, Lieutenant-Colonel D. V. O'Connell, Lieutenant-Colonel C. A. Lane, Major H. E. Winter, Major G. A. T. Bray, Major G. S. Mansfield, Major S. H. Fairrie, and Major A. W. Cooper, D.S.O.

THE VISION OF RECRUITS.

In view of the difficulty experienced by men who fire from the left shoulder in maintaining the necessary rapidity of rifle fire, the Army Council has decided as an experiment for one year to exclude from the Infantry, Cavalry, Artillery (except drivers), and Royal Engineers (except drivers) recruits whose vision is below 6/24 in the right eye, but who, if they reach the standard of 6/6 in the left eye, are accepted under existing regulations. When a recruit is below the 6/24 standard in the left eye he will not be accepted unless he possesses normal vision in the right eye. As this experiment is only applicable to the arms mentioned above, recruits rejected under it continue to be eligible for other corps and services.

# Correspondence.

"Audi alteram partem."

## CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

*To the Editor of* THE LANCET.

SIR,—The heading of this correspondence should be: "Did Bell or Magendie discover the motor and sensory functions of the anterior and posterior roots of the spinal nerves?"

Professor Keith is in error in his statement somewhat floridly made in your last issue to the effect that I quoted my own text-book as authoritative concerning the historical facts in connexion with the discovery of the motor and sensory functions of the spinal nerve roots made according to Professor Keith by Charles Bell and according to me by Magendie. I only quoted what I had written 20 years ago, accompanied by references to the original papers at my elbow, by which the accuracy of my statements could be verified or the reverse. Professor Keith believes that the discovery belongs to Sir Charles Bell, and without having himself given any actual quotation in support of his belief, says that it would be well for me to quote from the original work of the author in dispute so that readers of THE LANCET may form an unbiassed opinion. I will do so.

The original documents—neglecting "reproductions" and polemical misquotations subsequent to the year 1822—are in last resort, or in first resort: 1. Charles Bell: "Idea of a New Anatomy of the Brain," submitted for the observations of his friends by Charles Bell, F.R.S.E. (small 8vo, pp. 36, published by Strahan and Preston, printers, London; without date, but on collateral evidence the date 1811 is accepted, in spite of the date 1802, which is that assigned to it in the 1885 catalogue of the British Museum). A copy also exists in the library of the Royal Society, presented to it 18 years ago by Professor Jeffrey Bell. II. Magendie: "Expériences sur les Fonctions des Nerfs Rachidiens." (Experiments on the Functions of the Spinal Nerves). Journal de Physiologie Expérimentale et Pathologique, par F. Magendie. Tome II., année 1822, pages 276–9.

Two papers by Charles Bell in the Philosophical Transactions of the Royal Society for 1821 and 1822,[1] dealing with the nerves of respiration and with the nerves of the face, are only indirectly connected with the subject. The subsequent controversies alluded to by Professor Keith, and, in fact, all publications posterior to the date 1822, are without value as direct evidence bearing upon the main question. I therefore shall confine myself to that question as recorded in the two essential documents. Both are accessible, and the accuracy and completeness of my quotation and translation can therefore be readily verified.

I.—Bell, 1811: "Idea of a New Anatomy of the Brain (p. 21)—

I took this view of the subject. The *medulla spinalis* has a central division, and also a distinction into anterior and posterior fasciculi, corresponding with the anterior and posterior portions of the brain. Further, we can trace down the crura of the *cerebrum* into the anterior fasciculus of the spinal marrow, and the crura of the *cerebellum* into the posterior fasciculus. I thought that here I might have an opportunity of touching the *cerebellum*, as it were, through the posterior portion of the spinal marrow and the *cerebrum* by the anterior portion. To this end I made experiments which, though they were not conclusive, encouraged me in the view I had taken. I found that injury done to the anterior portion of the spinal marrow convulsed the animal more certainly than injury done to the posterior portion; but I found it difficult to make the experiment without injuring both portions.

Next, considering that the spinal nerves have a double root and being of opinion that the properties of the nerves are derived from their connections with the parts of the brain, I thought that I had an opportunity of putting my opinion to the test of experiment, and of proving at the same time that nerves of different endowments were in the same cord, and held together by the same sheath.

On laying bare the roots of the spinal nerves, I found that I could cut across the posterior portion of the spinal marrow without convulsing the muscles of the back; but on touching the anterior fasciculus with

[1] On the Nerves: Giving an Account of Some Experiments on their Structure and Functions, which lead to a New Arrangement of the System. Phil. Trans. R.S., 1821, pp. 398–424. The subject-matter of this inquiry is limited to the nerves of respiration. The subject is prosecuted in the next paper: Of the Nerves which Associate the Muscles of the Chest in the Actions of Breathing, Speaking, and Expression. Being a continuation of the paper on the Structure and Functions of the Nerves. Phil. Trans. R.S., 1822, pp. 284–312.

the point of the knife, the muscles of the back were immediately convulsed.

Such were my reasons for concluding that the *cerebrum* and the *cerebellum* were parts distinct in function, and that every nerve possessing a double function obtained that by having a double root. I now saw the meaning of the double connection of the nerves with the spinal marrow; and also the cause of that seeming intricacy in the connections of nerves throughout their course, which were not double at their origins.

The spinal nerves being double, and having their roots in the spinal marrow, of which a portion comes from the *cerebrum* they convey the attributes of both grand divisions of the brain to every part; and therefore the distribution of such nerves is simple, one nerve supplying its destined part. But the nerves which come directly from the brain come from parts of the brain which vary in operation; and in order to bestow different qualities on the parts to which the nerves are distributed, two or more nerves must be united in their course or at their final destination. Hence it is that the 1st nerve must have branches of the 5th united with it: hence the *portio dura* of the 7th pervades everywhere the bones of the cranium to unite with the extended branches of the 5th: hence the union of the 3rd and 5th in the orbit: hence the 9th and 5th are both sent to the tongue: hence it is, in short, that no part is sufficiently supplied by one single nerve, unless that nerve be a nerve of the spinal marrow, and have a double root, a connection (however remotely) with both the *cerebrum* and *cerebellum*.

p. 26—

The *cerebellum* when compared with the *cerebrum* is simple in its form. It has no internal tubercles or masses of cineritious cortex, and forms the *crus*; and the *crus* runs into union with the same process from the *cerebrum*; and they together form the *medulla spinalis*, and are continued down into the spinal marrow; and these crura or processes afford double origin to the double nerves of the spine. The nerves proceeding from the *Crus Cerebelli* go everywhere (in seeming union with those from the *Crus Cerebri*); they unite the body together, and control the actions of the bodily frame; and especially govern the operation of the viscera necessary to the continuance of life.

p. 27—

The cerebrum I consider as the grand organ by which the mind is united to the body. Into it all the nerves from the external organs of the senses enter; and from it all the nerves which are the agents of the will pass out.

p. 36—

The secret operations of the bodily frame, and the connections which unite the parts of the body into a system, are through the cerebellum and nerves proceeding from it.

No unprejudiced reader possessing even a slight acquaintance with the state of anatomical and physiological knowledge at the beginning of last century can fail to recognise that Bell in saying "that every nerve possessing a double function obtained that by having a double root" used the word "double" to denote *cerebral* and *cerebellar*, not motor and sensory. In Bell's view the spinal nerves being double, with roots from the cerebrum and from the cerebellum, convey the attributes of both grand divisions of the brain to every part (p. 23).

Cerebral (anterior) in Bell's idea is motor and sensory. Cerebellar (posterior) is visceral ("governing the operations of the viscera"—p. 26—"controlling the secret operations of the bodily frame"—p. 36).

That is the real meaning of Bell's argument, and it is entirely consistent with the one experimental fact brought forward in the pamphlet. Every physiologist who has repeated the experiment knows that in a recently killed animal the "posterior fasciculus of nerves" is inexcitable and the anterior fasciculus excitable (p. 22). But to infer from this fact alone that the posterior are sensory and the anterior motor was at that time, and would be now, wholly unwarrantable. And as a matter of historical fact Bell did not do so.

II.—Magendie, 1822. Experiments on the Function of the Roots of the Spinal Nerves. (*Journal de Physiologie*, tome ii., 1822, pp. 276–9.)

I had long desired to make an experiment in which I should cut on an animal the posterior roots of the nerves that spring from the spinal cord. I had attempted to do so many times without success on account of the difficulty of opening the vertebral canal without injuring the cord, thereby causing the death, or at least serious injury, of the animal. Last month a litter of eight little dogs, aged 6 weeks, were brought to my laboratory; these animals appeared very suitable for my purpose, and in fact I was able with a sharp scalpel almost by a single stroke to expose the posterior half of the spinal cord surrounded by its sheaths. In order to expose the cord almost completely it was only necessary to cut through the dura mater; this was easily done, and I then had under my eyes the posterior roots of the lumbar and sacral nerves which being raised successively by the blades of a small pair of scissors could be cut on one side, the cord remaining intact. I did not know what would be the result of this proceeding. I closed the wound by a suture through the skin and observed the animal. At the outset I thought that the limb corresponding to the divided nerve was entirely paralysed; it was insensitive to pricking and to the strongest compression; it also appeared to be immobile, but before long to my great surprise I saw it move in a very evident manner although its sensibility remained absolutely abolished. A second and a third experiment gave me exactly the same results. I began to regard as probable that the posterior roots of the spinal nerve might have functions different from those of the anterior roots and that they were especially concerned with sensibility. It naturally occurred to one to cut the anterior roots, leaving the posterior roots intact, but this undertaking was more easy to conceive than to execute. How was it possible to expose the anterior part of the cord without interfering with the posterior roots? I confess that at first this seemed impossible, but the idea pursued me for two days and at last I made up my mind to attempt to get a sort of cataract knife in front of the posterior roots with a very narrow blade enabling me to cut the roots by compressing them between the edge of the knife and the posterior surface of the vertebræ, but I was obliged to abandon this attempt on account of the large veins in the vertebral canal. In making these attempts I noticed that by traction of the vertebral dura mater it was possible to distinguish the anterior roots grouped in bundles at the point where they emerge from the membrane. That was enough for me and in a few moments I had divided all the pairs that I wanted to divide. As in previous experiments I divided the nerve on one side only in order to have a term of comparison. It may be imagined with what curiosity I watched for the effects of this operation. There was no room for doubt, the limb was completely immobile and flaccid while it preserved an unequivocal sensibility. Finally for the sake of completeness I have cut at the same time the anterior and the posterior roots; sensation and motion were then absolutely lost.

I have repeated and varied these experiments on many kinds of animals; the results that I have just described have been completely confirmed for the anterior as well as for the posterior roots. I am continuing these experiments and shall give a more detailed account of them in the next issue. I content myself with laying down at present as positive that the anterior and posterior roots of the nerves that spring from the spinal cord have different functions, that the posterior appear to be more specially appropriated to sensation while the anterior appear to be more especially associated with movement.

Comparing these two descriptions, I think it must be obvious that the case as presented by Magendie in 1822 is clarity itself as compared with that given by Bell in 1811. No other part of Bell's pamphlet (nor any portion of his Philosophical Transactions papers of 1821 and 1822) helps to make his case any clearer—on the contrary. No unprejudiced reader can fail to understand that Bell did *not* discover the motor and sensory functions of the spinal roots, and that Magendie actually did so. To speak of a "Bell-Magendie" law is a weak compromise

The sentence quoted from my text-book of 1891 in my first letter to the effect that "The facts were discovered by Magendie (1822)," and that "Charles Bell (1811) to whom the discovery is commonly ascribed, observed motion on excitation of the anterior roots of a recently killed animal, and inferred that the anterior or 'cerebral' roots are motor and sensory, and that the posterior or 'cerebellar' roots serve to govern vital actions" (*loc. cit.*, 3rd ed., p. 485) is as accurate as is possible in a small number of words. No statement subsequent to 1822 is "*authoritative.*"

I am, Sir, yours faithfully,

A. D. WALLER,
Physiological Laboratory, University of London, S.W.

Feb. 27th, 1911.

## THE TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS, WITH ESPECIAL REFERENCE TO INTUBATION AND TO RADIUM.

*To the Editor of* THE LANCET.

SIR,—In your last issue (Feb. 25th) there appears a very generous and excellent summary of my communication to the Medical Society of London on Feb. 13th on this subject, but there occurs one printer's error which, if left uncorrected, would lead to an entirely wrong impression of my radium treatment, the essential feature of which is the employment of large quantities. Near the end of the article Dr. Finzi and I are credited with "using from 50 to 20 milligrammes on the gullet for periods varying from 12 to 28 hours on end, repeated in some instances as many as six times." A cypher has obviously been omitted by the printer, for the amounts mentioned by me were "50 to *200* milligrammes" of pure radium salt. Twenty milligrammes is a very small dose to employ in a malignant tumour of any size, and though Dr. Morton claims to have obtained some substantial results with about 34 milligrammes of radium salt (which by a slip he describes as "pure radium"), yet I should strongly object to any endeavour to check the claims made by Dr. Finzi and myself being based on the employment of anything less than 50 milligrammes, which was the minimum amount used in our earlier cases. With the larger doses of 100 and 150 and 200 milligrammes our later results have commensurately improved. I have heard of several hospital and private patients with malignant disease in the gullet or in the throat who have been submitted to, what is really, though not intentionally, a bogus radium treatment. At one very large hospital *two* milligrammes of radium were applied for 18 or

22 hours respectively in the gullet of two patients suffering from cancer, and at two other large hospitals insignificant doses of radium salt have been applied for an inadequate time. These applications were made in good faith by those who probably did not then appreciate the uselessness of such very small amounts, but the employment of inadequate doses in hospital and private practice by practitioners without technical knowledge or experience either of radium or of gullet work will, if persisted in after this protest, come very near to quackery.

There is another point of technique mentioned in your report of the subsequent discussion which, if followed, will, in my opinion, be not unlikely to lead to occasional disaster. Mr. Tilley is represented as saying that "when an anæsthetic was required for endoscopy of the œsophagus chloroform was better than ether." Mr. Tilley, as a matter of fact, put the question of choice of anæsthetic more strongly than that; he said that ether was contra-indicated and that chloroform was *the* anæsthetic to employ in œsophagoscopic procedures. To this sweeping pronouncement I strongly dissented. In some cases where the heart is sound and the patient not debilitated chloroform may be safely and preferably administered in gullet work, and it undoubtedly causes less local congestion than ether anæsthesia alone, more especially if the latter is given by the closed method before the endoscope is introduced; moreover, ether by the closed method is contra-indicated where, as frequently happens, there is much laryngeal involvement or irritation, and in cases with abductor paralysis; but chloroform alone also has its disadvantages, and is contra-indicated in those cases to which Mr. Tilley alluded in another connexion—viz., those with a tendency to syncope when the endoscope is introduced; in other words, in patients debilitated by semi-starvation and toxæmia from advanced disease and whose hearts are weak. To give chloroform *alone* in such cases is to court disaster. It is for this reason that Chevalier Jackson, an œsophagoscopist of enormous experience, insists on ether as the main anæsthetic with occasional whiffs of chloroform. Dr. G. A. H. Barton, who anæsthetises my private patients, relies mainly on the chloroform and ether mixture given by the *open* method in cases with a weak heart; this can be alternated with spells of chloroform alone after the heart has been sufficiently stimulated by the C.E. mixture.

Another point of anæsthetic technique seriously recommended has only to be stated to carry its own refutation with it. Mr. Tilley came to the meeting provided with an œsophagoscopic tube, together with Mr. Bellamy Gardiner's anæsthetic tube, which can be linked up with the proximal end of the œsophagoscopic tube. This well-known apparatus Mr. Tilley displayed to the audience and handed to the President, and explained that the chloroform was pumped through the Bellamy Gardiner anæsthetic tube into the œsophagoscope! We may be quite sure that neither Mr. Bellamy Gardiner nor any other anæsthetist in his senses would dream of administering a general anæsthetic *through the œsophagoscope*, not even in those cases where there is a communication between the gullet and the air passages.

There are other points of œsophagoscopic technique on which I do not see eye to eye with Mr. Tilley, but they are too technical for discussion outside the Laryngological Section. It was very evident to those present who were really expert in endoscopic procedures in the gullet that, absent-mindedly wandering from the subject under discussion, Mr. Tilley was *talking* œsophagoscopy and *thinking* bronchoscopy, of which latter he is admittedly such an experienced and accomplished exponent.

I am, Sir, yours faithfully,

Weymouth-street, W., Feb. 27th, 1911. WILLIAM HILL.

## THE LANTERN TEST FOR COLOUR BLINDNESS.

*To the Editor of* THE LANCET.

SIR,—In reference to the letter of Mr. Buxton in THE LANCET of to-day, in which he says that in many particulars his lantern anticipated mine, I should like to point out that I am not aware of any lantern which has anticipated any essential point of mine. My lantern was constructed more than 22 years ago, and has never been altered in any important particular. A full description of the lantern was published in my pamphlet "On the Detection of Colour Blindness from a Practical Point of View"[1] in 1889, at which time I was a member of the International Code of Signals Committee.[2] I took up the subject of colour blindness for my thesis for M.D. After the publication of my papers numerous lanterns were brought out. I tested some of these with persons that I knew to be colour blind, and with some failed to detect a single colour-blind person. I will now deal with Mr. Buxton's statement in which he says that in two points his lantern possesses an advantage over mine. He says that with his the illumination can be readily varied; this is accomplished in my lantern by means of the neutral glasses. The second supposed advantage is that of comparing the wools with the light; this method was originally employed by me (see my book on "Colour Blindness," first edition, page 115). The objection to this method is that it cannot be employed in the dark, and is therefore more suitable for the classification test, but anyone can if he wish use this method with any lantern. My tests were all based on the special facts of colour blindness which I was the first to discover. Most of these facts have now been rediscovered (probably independently) by other persons and claimed as new by them. A few days ago an ophthalmic surgeon wrote to me about a lamp which he had purchased which was said to be mine and was made by a maker of whom I had not previously heard. I also find that these lamps, which may be useless, are being extensively advertised on the continent.[3] The essential parts of my lantern are the glasses. I differ from Mr. Buxton in his opinion that the colours of his glasses are almost identical with mine. I discovered that there were cases of shortening of the red end of the spectrum without any other defect of colour perception. These cases fail to see a red of a certain wave-length, therefore it is absolutely necessary that the lantern should be able to show a red consisting only of these rays. It is not possible to show a red of this kind with Mr. Buxton's lamp. I have examined all his glasses with my spectrometer and I would not pass or use any one of them in my lantern. They are very defective from my point of view. I can obtain numerous important combinations with my lantern; no combinations at all are possible with Mr. Buxton's instrument. The neutral glasses of my lantern are also absolutely necessary. In reference to the concluding remarks, I may mention that the Admiralty are now using my lantern and that Fleet-Surgeon Pryn reported on it as the best form of lantern.

I am, Sir, yours faithfully,

F. W. EDRIDGE-GREEN.

The Institute of Physiology, University College, Gower-street, London, Feb. 25th, 1911.

## THE PHILADELPHIA IDEA AS TO MEDICAL TEACHING.

*To the Editor of* THE LANCET.

SIR,—On several occasions within the last few years statements have been made in medical journals, here and abroad, to the effect that the medical schools of this country are not equipped with satisfactory opportunities for clinical teaching. Last spring the President of Cornell University, when delivering an address which should have been carefully prepared, made the extraordinary statement that no medical school in this country, with the exception of Johns Hopkins, had a hospital completely under its control, and therefore adequately used for teaching purposes. In the issue of THE LANCET of Feb. 4th, 1911, your correspondent in describing a proposed amalgamation between the medical department of Columbia University and the Presbyterian Hospital, refers to this plan as the "Johns Hopkins idea." It goes without saying that those of us who know much of medical teaching hold the Johns Hopkins medical department in the highest esteem, but it is only proper that the correct facts be stated. The object of this communication is to point out the fact (not as generally known as it should be) that every medical school in Philadelphia has as a part of its equipment a hospital which exists, not as an affiliated

[1] London: Baillière, Tindall, and Cox.

[2] See THE LANCET, Oct. 19th (p. 797) and Nov. 30th (p. 1146), 1889. See also a leading article in THE LANCET of Nov. 9th, 1889, p. 964.

[3] My lantern can be obtained from Messrs. Reiner and Keeler, 9, Vere-street, W.

institution, but as part and parcel of its teaching plant. As long ago as 1824, when the Jefferson Medical College was founded, it established an out-patient service in order to give its students the advantage of clinical material under its own control, and in 1841 the medical department of the University of Pennsylvania did likewise. In 1873 the Jefferson College inaugurated its plan for a complete hospital, and this institution was opened Sept. 17th, 1877, containing 160 beds. On June 4th, 1874, the hospital of the University of Pennsylvania went into active service. Three years ago the new Jefferson Medical College Hospital, costing $1,250,000, was completed, containing 300 beds, and from time to time the University Hospital has been considerably enlarged. As soon as it was started in 1881 the Medico-Chirurgical College established an out-patient department, and a few years afterwards erected a hospital. The Woman's Medical College of Pennsylvania also has a hospital known as the Hospital of the Woman's Medical College. The Hahnemann Medical College, the largest homœopathic school in this country, also has its own hospital, and the medical department of Temple University, the youngest of the Philadelphia schools, has under its direct control the Samaritan Hospital. It is interesting to note in this connexion that all of these hospitals are under the control of the same boards of trustees as govern the institutions in which the students matriculate for the purpose of studying medicine, and in the Jefferson Medical College, in the University, and in the Medico-Chirurgical College, members of the Faculty who teach in the practical branches are by virtue of their professorial chairs in actual control and on duty in the wards. In other words, to be elected professor of medicine, therapeutics, or surgery in the Jefferson College means that a man is elected physician or surgeon to the Jefferson Medical College Hospital. It is therefore a matter of absolute control and not of friendly affiliation, and by this means only can satisfactory medical teaching in the medical school be accomplished. If, therefore, the principle of having an active hospital as a part of a thoroughly equipped medical school is to be given a specific name it should be called the "Jefferson College Idea" or the "Philadelphia Idea" and not the "Johns Hopkins Idea." As a matter of fact, barring the Johns Hopkins Hospital, there is, I believe, no other medical school in the United States so thoroughly equipped with hospital facilities under its own control as each of the Philadelphia medical teaching institutions. All of these institutions have, in addition, the opportunity of teaching their students in large hospitals which are thrown open to all the schools, such as the Pennsylvania and Philadelphia hospitals, for example. In other words, the Philadelphia schools have all the benefit of unattached hospitals possessed by institutions elsewhere, and in addition their ownership and control of their own hospitals.

As a matter of historical fact, the Jefferson College was the first medical institution in America to establish clinical teaching, and all its sister institutions in Philadelphia, with which it dwells in the most cordial friendship, have followed her example.

I am, Sir, yours faithfully,

Philadelphia, U.S.A., Feb. 11th, 1911. H. A. HARE.

## DISEASES OF ELEPHANTS' TUSKS.

*To the Editor of* THE LANCET.

SIR,—I have been interested in reading Mr. Bland-Sutton's paper on the above subject read before the Hunterian Society, published in THE LANCET of Nov. 26th, 1910. It recalls to my mind the case of a tusk of an elephant which was found in this country tightly wedged between branches of a tree. Examination of the tusk showed that there had evidently been disease at its root, no doubt inflammation of the pulp, with probable abscess formation, and the evidence all goes to show that the suffering giant had managed to attain to the extraction of the offending member. It was impossible to assign a cause, but probably a bullet, as in the case quoted by Mr. Bland-Sutton, was at the root of the evil.

I have also in my possession the tushes of a hippopotamus I shot in Lake Nyasa, of which one of the lower curved teeth shows a cavity on its grinding surface opening into the pulp chamber with resulting periodontal inflammation and the laying down of a quantity of new dentine round the root. Of aberrant teeth I have an example in the skull of an old-man baboon, one of whose upper canines had been thrust out of line by the other teeth; this had grown long and projected out of the mouth, and must have served as a formidable weapon of offence in making the side-way slashes as they do when attacking.

I am, Sir, yours faithfully,

HUGH S. STANNUS, M.B. Lond.,
Medical Officer, Nyasaland Administration.

Zomba, Nyasaland, Jan. 16th, 1911.

## THE LATE DR. JAMES EDMUNDS AND CÆSAREAN SECTION.

*To the Editor of* THE LANCET.

SIR,—In your obituary notice of Dr. James Edmunds, I am surprised to see no mention of his two cases of Cæsarean section performed in 1860 and 1876 with success to both mothers and children (one child subsequently died). These two cases aroused a good deal of attention from the circumstance that Dr. Edmunds deliberately refrained from suturing the uterine wound. I suppose he was the only British operator who could say that he had successfully performed Cæsarean section over 50 years ago. His cases are interesting items in the history of Cæsarean section, and I should like again to call attention to them in the pages of the journal in which they were published so long ago as apparently to have escaped the observation of the writer of the obituary notice.[1]

I am, Sir, yours faithfully,

Harley-street, W., Feb. 27th, 1911. HERBERT R. SPENCER.

## ADMISSION OF CASES OF MEASLES AND WHOOPING-COUGH TO THE HOSPITALS OF THE METROPOLITAN ASYLUMS BOARD.

*To the Editor of* THE LANCET.

SIR,—Misunderstanding seems to have arisen in some quarters as to the scope of the Order recently issued by the Local Government Board empowering the Metropolitan Asylums Board to receive into their hospitals cases of measles and whooping-cough. I should therefore be glad if you would kindly allow me to inform medical practitioners and others through your columns that this Board are only authorised to admit poor persons, under 16 years of age, on the order of a relieving officer, or master of a workhouse, or medical superintendent of an infirmary or district sick asylum, or the superintendent of a Poor-law school, accompanied by the certificate of a Poor-law medical officer.

I am, Sir, your obedient servant,

T. DUNCOMBE MANN,
Clerk to the Board.

March 1st, 1911.

## THE TREATMENT OF A CASE OF PERNICIOUS ANÆMIA.

*To the Editor of* THE LANCET.

SIR,—I think the following note may interest some of your readers.

The patient was a man, aged 68 years, belonging to the labouring classes. He was treated with increasing doses of arsenic (by the mouth) for ten days without any sign of improvement. In his own cottage it was difficult to obtain for him the proper amount of fresh air or light. I was fortunate enough to find, close to my own house, a good room where there was plenty of the two latter requisites, and where there was also a housewife who ably seconded me in all my efforts. At this time his blood count, as estimated by the Clinical Research Association, was as follows: Red corpuscles, 3,700,000 per c.mm., or 74 per cent.; white corpuscles, 3000 per c.mm. I now treated him with iron and arsenic hypodermically in the following doses, twice a day, by means of the very convenient B.W. vaporoles—viz., ferr. citrat. virid. 0·05 gm., sodii arsenat. 0·002 gm., aquam ad 1 c.c. In a few days I administered this dose three times a day, and it was well borne. The improvement

[1] See THE LANCET, 1861 vol. i., p. 4; and 1876, vol. ii., p. 818.

in many ways was very great. Formerly, at home, he had practically eaten nothing and cared only to stay in bed. He now ate and drank all that was given him, and was always ready to rise from bed in the afternoon. After six days his blood count was as follows: Red corpuscles, 5,100,000 per c.mm., or 102 per cent.; white corpuscles, 3000 per c.mm. The general improvement was, however, not maintained. He had to return home, and gradually the disease obtained the upper hand.

Pernicious anæmia, of course, shows remarkable remissions, but the rapid improvement in the blood count after the hypodermic treatment seems to hold out some hope for the cases of younger and more vigorous patients, especially if it were begun soon enough. I did not see my patient until the case was at least four months advanced according to history, and quite possibly more.—I am, Sir, yours faithfully,

East Meon, Hants, February, 1911. EDWARD T. JONES.

# EXPERIMENTS IN SEWER VENTILATION AT LEICESTER.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Leicester, February, 1911.

MORE than eight years have elapsed since a detailed description was given of an ideal method of ventilating sewers.[1] At that time the system had not gone beyond the theoretical and laboratory stage. The chief fault then found was that it all seemed too good to be true. Now it is possible to speak differently, for the method has been applied during a sufficient number of years and to a large enough district to be judged from the practical results obtained. The object of the system is to prevent the ventilation of sewers in the streets or by soil-pipes on the tops of the houses. Further, greater care is displayed to prevent the intercepting traps placed between houses and sewers becoming small cesspools and to ensure more efficient ventilation of the small branch drains. A vigorous current of air may pass along the straight sewer in the street and yet have but little or no effect on the small tributary drains that come from behind the houses and down passages. The only way to ensure ventilation throughout is to place the inlets or outlets at the extreme ends of the piping. Thus there is the school of sanitary engineering that would have no intercepting trap between the house and the sewer, and by carrying every soil-pipe to the roof of the houses convert them all into sewer ventilators. The air would then have to travel the whole length of the domestic drains to get out, and there would be no neglected corners or branch drains. The ventilation of private drains and public sewers on the roofs of dwelling houses and within a few feet of bedroom windows is not, however, a very satisfactory expedient. To say that the sewer air will be blown away is not a sufficient assurance. When a neighbouring chimney catches fire the odour, and even the smoke, is blown down to the street level. Sometimes the smoke from one chimney is blown down the chimney of another house, invading, much to the surprise of the inhabitants, a room which has no fire; and where the smoke goes the air from the soil-pipes will follow.

### *Air Needed Per Head in Sewers.*

To meet these and many other objections it has been proposed to reverse the process and not allow any air to escape from the soil-pipes; but, on the contrary, to draw air down these pipes to the domestic drains and into the sewers. Here the air would be conveyed to a spot where it could be treated or safely discharged. For this artificial power is necessary, and that constitutes the first and probably the chief objection to the whole system. There is an instinctive dislike to the employment of machinery, based probably on the too frequent experience that machinery is apt to get out of order. It is therefore a good point in favour of a mechanical system if it can be shown that, in the event of a breakdown in the machinery, no very injurious consequences would ensue. Of greater importance than arguments for or against machinery is the dominating fact that in ventilating it is absolutely impossible to ensure a stable result except by the use of machinery. Just as the weather varies, so does natural ventilation vary, and this precisely in the opposite direction to our requirements, giving violent draughts in cold weather and hardly any movement of the air when it is hot and sultry. In dealing with this problem Mr. I. Shone had the advantage of experience as a mining engineer, where the entire ventilation must be artificial, though the breakdown of machinery might involve a serious loss of life. There was no hesitation, therefore, in proposing to base the ventilation of sewers on the revolutions of a fan so as to provide in all weathers exactly the volume of air required to keep the atmosphere within the sewers and drains so fresh as to be uninjurious. What this amount would be has been explained by others writing on this subject. Dr. Letheby had made experiments on the gases engendered by putrid sewage, and the results were that one cubic foot of fresh air every two minutes would suffice to dilute the air escaping from the 30 gallons, or normal daily flow of sewage per inhabitant. In other words, for every inhabitant 30 cubic feet of fresh air must be drawn every hour into the soil-pipe of the house inhabited. Obviously this cannot be done with any degree of certainty except by mechanical appliances. Having obtained this figure it was further possible to calculate that at 3*d.* per Board of Trade electric unit a "Sirocco" fan could be worked so as to provide the requisite amount of air for 1·41*d.* per annum per head of the population.

### *The Need of Cubic Measurements.*

The next point was to devise means to insure that the regulation amount of air should penetrate every soil-pipe, whether near or far from the fan. This seemed more easy to do in theory than in practice, and experience has proved the accuracy of this criticism. Originally a very elaborate inlet was provided, regulated by a vulcanite screw plug which had a small hole pierced in the centre. The size of the hole, in some places barely big enough to let a lead pencil through, varied according to the suction within the pipe, being smaller the nearer the house stood to the extraction fan. These and many other details were given by me in the first description of the system which appeared in these columns, and it is not necessary to go over the same ground again. But we have to see how far the original plan has been modified in actual application. That such experience has now been acquired is due to the enterprising spirit of the highway and sewerage committee of the Leicester Corporation. They determined to apply the system to an area of two and a half acres consisting of streets 40 feet wide with 80 six-roomed houses of the artisan class, and a population of 356 persons, or an average of 4·45 persons per house. The foul water sewers it was proposed to ventilate were 297 yards long. There is a totally separate system for storm and rain water from the surface of the streets and the roof of the houses. To convey the sewage proper there is a 12 inch pipe sewer 202 yards long and two short branches at right angles. The sewers to which the new system is applied discharge into a brick main of 3 by 2 feet, from which they are disconnected. At the junction the pipe sewer is carefully separated from the main sewer by a deep dip trap. The drains that connect the dwellings with the 297 yards of pipe sewers measure in all about 583 yards and are mostly 6 inches in diameter, while the branches to the closets and sink wastes are 4 inches. The smaller half of these have clay puddle joints instead of Portland cement for the joints. A 4 inch diameter cast iron pipe is added to the soil pipe and carried to the roof. It becomes a ventilator, but there are only 27 such ventilators to the 80 houses, in some cases six houses being connected with the one upright pipe ventilator. The cubic capacity of all these house pipes and drains is 304 cubic feet, that of the public sewer 661 cubic feet, so we have to deal with a total of 965 cubic feet, and it would take 6021 gallons to fill this with water. Now when a part of these drains and sewers were submitted to a water test it became apparent that there was a considerable leakage, amounting to seven gallons per minute. Here, then, was the first obstacle, the first great difference between the theory as demonstrated by laboratory experiments and actual application.

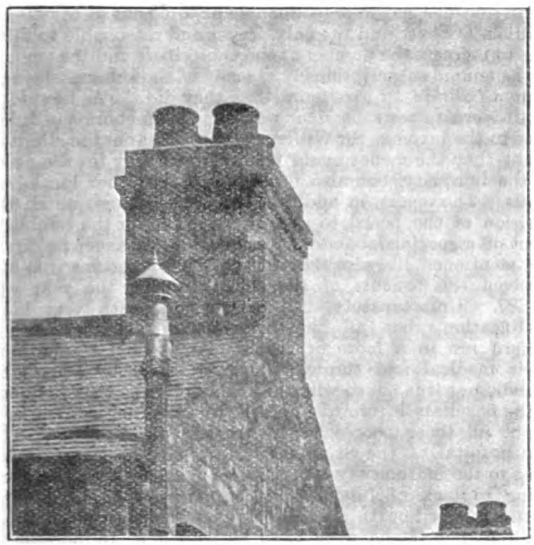
### *Leakage Upsets all the Calculations.*

At the highest point in the district a chamber was constructed under the causeway and here a "Sirocco" fan, 15 inches in diameter, driven by an electric motor capable of producing 700 revolutions per minute, was introduced. On one

[1] See THE LANCET, August 9th, 1902, p. 405.

side the chamber is connected with a flushing manhole and the air is drawn out of the sewer by the fan. On the other side the air thus extracted is forced into a ventilating shaft 40 feet high. When all was completed a five days' test was made. The velocity of the air entering the 27 soil-pipe inlets was measured by anemometers and the result showed that more air was pumped out through the extract ventilating shaft than had entered the sewers by the proper inlets. Therefore the leakage which had enabled some of the water to escape when the water test was applied now allowed some air to penetrate the sewers and drains. Thus the ideal calculations which, as said before, were all too good to be true are now upset. Given absolutely air-tight sewers and drains, with inlets all accurately measured and a fan revolving with mathematical precision, every soil-pipe would have received exactly the number of cubic feet of fresh air needed. But here was an unknown volume of air penetrating from unknown places and upsetting all these precise calculations. The mechanical part alone worked satisfactorily. The fan pumped out of the sewer exactly the right amount of air, only it did not appear that this air came from the farthest as well as the nearest inlets. At these inlets—that is to say, at the top of the 27 soil-pipes which are prolonged to the roofs of the houses—it was found, in some instances, that there was no perceptible current of air. It is true that air must travel at the rate of 30 feet per minute before it has sufficient force to move the anemometer, but the amount entering at a slower rate than this is hardly worth including in any calculation.

FIG. 1.



A cowl, constituting an air-inlet, placed on the top of the soil-pipes. The door-like opening can be seen which is used for introducing the anemometer.

Under the existing circumstances, short of re-laying all the house drains and the sewers in such a manner as to make them absolutely air-tight and keeping them in that condition for ever, a totally new set of calculations had to be made. Nor could any theoretical basis for such a reckoning be found, for no one could tell the extent of the leakages with which it was necessary to deal. Therefore, experiments had to be made with all the air inlets. Obviously much more air must be extracted so as to maintain a current through all the soil-pipes and also carry away what the leakages supplied. The minute and elaborated air inlet was too delicate an instrument for this rougher procedure. After trying many models the present system was adopted. It consists of a cylinder fitting over another cylinder. Both these have vertical apertures or slits, and the outer cylinder can be twisted round. If the apertures are made to fit over each other we have the maximum opening, but by slightly moving the outer cylinder the openings are rendered smaller and smaller till they are closed altogether. This is covered over by an ornamental hood or cowl to keep the rain off (Fig. 1). Underneath there is a commencement of piping which fits on the top of the soil-pipe, and here is the space for a small door large enough to admit a hand holding an anemometer. Thus it is necessary to place a ladder against the wall, to climb up and introduce an anemometer into this aperture. If the record shows that the amount of air descending the soil-pipe is insufficient, then the cylinder above must be turned round so as to enlarge the inlets. This descent of the air will vary from soil-pipe to soil-pipe according to its position and proximity to the extraction fan. Thus there is no rule, but a separate experiment must be made in each instance. This may seem complicated, but the needful procedure shows that the system deals with realities. According to the experiments made and the report of the borough engineer, Mr. E. George Mawbey, M.Inst.C.E., the 27 inlets measured at first only 10,278 square inches, and this might have sufficed had the sewers been absolutely air-tight. The inlets had to be increased to 75,258 square inches, and the six-inch diameter extraction shaft was replaced by a nine-inch pipe. Thus the inlet space was equal to 89 per cent. of the outlet space given by the nine-inch extraction shaft. The working showed that 752 cubic feet of air were discharged per minute by the fan into the extraction shaft; but of this only 325·53 cubic feet, or a little less than half the total volume extracted from the sewers, entered the sewers through the 27 soil-pipe inlets. In these ventilating soil-pipes of four-inch diameter the average velocity of the air was 226·2 feet per minute, representing an admission of 12·02 cubic feet per minute, or 5·23 cubic feet per house per minute, which is more than necessary. Therefore, the fan was utilised to ventilate a neighbouring sewer outside of the area devoted to the experiment. This reduced the volume of air extracted from the sewers and drains of the area to 142 cubic feet per minute, and of these 106·08 cubic feet were admitted through the 27 soil-pipe inlets, giving an average per house of 1·73 cubic feet per minute. This is a magnificent result, for in 24 hours the air within the house soil-pipes and drains is changed 502 times and replaced by air drawn from the outside atmosphere once in three minutes. Within the street sewers the air is changed about 309 times in the 24 hours, or once in four and a half minutes.

### *The Chemical Test.*

The result thus achieved, it must be borne in mind, is absolutely independent of all climatic conditions. The wind may blow or not blow from any point of the compass, the temperature may fluctuate from the extremes of heat or cold, but still pure outer air penetrates the highest point of the soil-pipe, travels down to the lowest, then on to the sewers, bearing away all noxious effluvia and preventing any accumulation or stagnation. The sewage, if foul, is constantly swept over with fresh air; there is not time for mischief to accrue. This is confirmed by chemical analyses. Outside, but close to the area, analyses were first made of the air in the street, and it contained 3·55 parts of carbonic acid gas per 10,000 parts. In the sewer the air contained in the best samples 15·95 and in the worst 24·98 parts of carbonic acid gas per 10,000 parts of air. When, however, the nine-inch extraction shaft was applied and the system in the selected area was in working order the air in the principal street of this area was found to contain 3·18 parts of $CO_2$ per 10,000, and within the sewers the average throughout the system was 9·59 parts of $CO_2$ per 10,000 parts. On another occasion the average was only 8·08, and after that it fell to 7·04 parts of $CO_2$ per 10,000 parts. Thus there can be no doubt but that the sewer atmosphere is purified by this system of ventilation. Finally, if the air from the sewer is discharged in the street, though, of course, at as high a level as possible, it will not prove as injurious as the ordinary sewer airs, which, it has been seen, contain a much larger proportion of carbonic acid gas and whatever other impurities the excessive quantity of this gas may indicate or favour.

### *The Advantages Secured.*

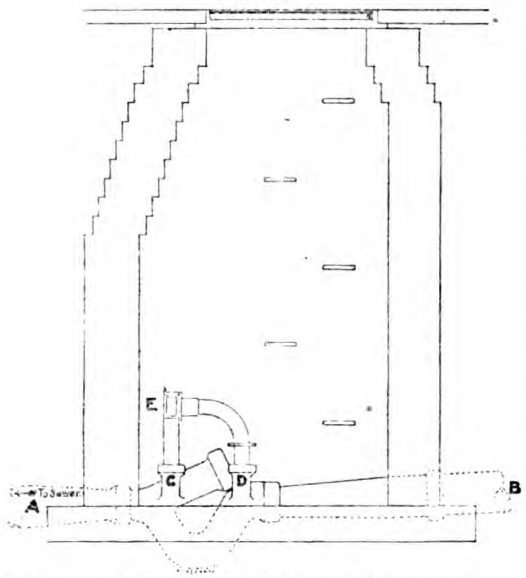
To fully appreciate these advantages it is necessary to bear in mind that at present in most cases the sewer airs travel up from the sewers to the houses, escape by numerous leakages, and are discharged either through grids into the streets or through various ventilating shafts, many placed against houses and near windows. Thus the current is always from the sewer to the street or the dwelling. But with mechanical power to produce a vacuum in the sewers the current is

reversed. Even if the sewers are badly built, if the drain-pipes are insecurely jointed, then it is pure outside air that is drawn through these leakages into the drain or sewer, and not foul air from drain or sewer that ascends and permeates the surrounding soil or dwelling. There remains, however, the old objection that all this is due to a mechanical appliance which may get out of order. If the fan is worked by an electric motor the electric current may he stopped by an accident or by a strike. In that case no more disastrous result would ensue than that of having to revert to the system of ventilation now actually applied in most towns. The inlets would once more become outlets. The worst that might have to be done would be to remove the cowl inlets that are on the top of the soil-pipes so that the latter might more readily become outlets till such time as the ventilating fan could be set in motion and the system re-established.

*The Intercepter Trap and other Obstacles.*

There is one more consideration. In many places there are intercepting traps between the house drains and the public sewer. How, then, can the air be drawn down the house drains into the sewer without forcing the water seal of these intercepting traps? For this purpose a special intercepter has been invented, and it is applied in one instance at Leicester to show how it works. (Fig. 2.) On

FIG. 2.




Paton-street, Leicester. Plan of chamber containing Messrs. Shone and Cutt's patent intercepting trap. A, Drain between intercepter and sewer. B, Drain from house to intercepter. (Of course any inlet for fresh air purposes into the house-drain B, as would be necessary under the London County Council by-laws, would require further calculations against the admission of the extra air.) C, Shaft for passage of air from house-drain to sewer. D, Shaft for passage of air from house-drain to E, box holding the suspended valve which only permits air to pass from house to sewer.

each side of the water seal there is a small opening where a pipe can be introduced and carried over to the other side of the water seal. Between the two a space is reserved where a valve is suspended in such a manner as to open and let air through from the house to the sewer, but the greater the pressure of air from the sewer towards the house the tighter this valve would be closed. It is very similar to the intercepting trap which was proposed for use in carrying out the drainage scheme for Cairo, and was described with illustrations in these columns of May 8th, 1909 (p. 1350).

For several years now this the Shone system of sewer ventilation has been working in Leicester. No accident has happened. It has given general satisfaction. The chief objection is the cost of the power that must be employed, not necessarily electricity; but all power is more or less expensive. On the other hand, the perfection of the results attained is worth a small outlay, and at the worst the cost is not great. The second objection is that the system cannot be applied like a ready-made suit of clothes. It represents, on the contrary, the highest art yet attained in this direction, and therefore requires to be tried on and fitted carefully, with intelligence and knowledge of the object to be realised. But when was a real scientific problem solved otherwise? The desire for simplicity may be exaggerated. The first sailing boats had very simple sails and rigging, but they did not sail far or quickly. The first sewers were also of very simple construction, but the greater frequency of epidemics in their days did not speak well for their sanitary qualities.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*The Manchester Hospitals.*

THE financial position of the Manchester hospitals is becoming serious enough to cause great anxiety as to the future. The Royal Infirmary, the leading medical charity, "one of the finest infirmaries in the world," as Sir William Cobbett said at the annual meeting of trustees the other day, with its very complete equipment, must live far beyond its income if it is to be used to its full capacity. To meet the expenses of the past year the board of management had "to withdraw £11,944 from unappropriated capital," and, of course, this depletion of capital cannot go on indefinitely. Sir William Cobbett said that energetic action was required to improve the position. One solution was to close 168 beds, so reducing the number to 315, or only about 25 more than the number in the old infirmary. A second was "to pay each deficiency of income as it arose, out of capital." Each of these schemes was so objectionable as to be out of court. Sir William Cobbett said the only proper and reasonable solution was to increase the number of the subscribers and the amount of the annual subscriptions, "as many of the subscribers must be in a position to give more than they did." As he said, a small increase per subscriber would make an enormous difference to the income. Sir William Cobbett had not the slightest doubt that the money could be found, not only for the needs of the infirmary but also for those of the other local hospitals. The report, in addition to other matters, stated the decision of the board to appeal for £2500 for the establishment of a special laboratory for the work of cancer research, and mentioned likewise that the number of persons who had received the benefits of the charity during the year was 67,827. Unfortunately, it may be said, with very little qualification, that all the hospitals in Manchester and Salford are in a more or less similar financial condition. Their medical and surgical work increases by leaps and bounds, but it is not so with the subscriptions. Patients flock to the hospitals in crowds, and the question naturally arises, Ought all these people to be treated gratuitously? The new hospital of the St. Mary's Hospitals, in Oxford-road, close to the infirmary, which has stood empty for some years owing to lack of funds, is to be properly equipped and opened in April next. It will be a great boon to women and children, but if the work is to be well done an increase in the subscriptions of several thousand pounds a year will be required.

*Ashton Infirmary Jubilee.*

The infirmary of Ashton-under-Lyne is to have its jubilee in the coming spring, and an effort is being made to raise £6000. Of this sum £4000 are required to clear off a debt, and the £2000 will be used for the further equipment of the infirmary. Up to the present over £2000 have been subscribed. In addition to the special appeal of the governors the workpeople's committee has decided to raise £1000 in sixpences—40,000 sixpences—and this fund is rapidly mounting up.

*Low Death-rate at Stalybridge.*

The Lancashire and Cheshire manufacturing towns do not pretend to be attractive as health resorts; but, as a rule, perhaps their reputation is lower than they deserve. However this may be, Stalybridge has been pluming itself on the last quarterly report of the medical officer of health, which shows that the births were 124 (rate 17·0) and the deaths 106 (rate 14·5). This, said the chairman of the sanitary committee, was the lowest death-rate for some time past, and "was a most marked and gratifying reduction for the winter months," and "knocked on the head" the old saying that a green Christmas meant a fat churchyard. He said

also that there had been a marked decrease during the last year or two in the deaths of young children. He thought the sanitary committee might be proud of this improvement. It is to be hoped that as the knowledge of sanitary matters permeates the lower sections of the community death-rates may still fall.

*Appointment for a Manchester Physician.*

Dr. E. S. Yonge, assistant physician to the Manchester Hospital for Consumption, has been appointed as the English representative in connexion with the Hay Fever Department of the Scientific Section of the International Hygienic Exhibition to be held at Dresden. Manchester plumes itself to some extent on its connexion with hay fever, as it is said, on what is considered good authority, that Dr. Blackley, a Manchester man, showed in 1873 that the cause of hay fever was the pollen of certain plants, especially of the graminaceæ. But the conditions determining the susceptibility of some and the immunity of others to the action of the pollen remain to be discovered. Perhaps the department at the Dresden Exhibition will throw more light on the subject.

Feb. 28th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Royal Liverpool Country Hospital for the Chronic Diseases of Children.*

THERE was a large and influential gathering at the dinner held at the Adelphi Hotel on Feb. 23rd in the interests of the Royal Liverpool Country Hospital, Heswall. The Earl of Derby presided, and among others present were the Countess of Sefton, Sir Thomas Barlow (President of the Royal College of Physicians of London) Sir Donald MacAlister (President of the General Medical Council), Sir Edward and Lady Russell, Sir James and Lady Barr, Sir Benjamin and Lady Johnson, Mr. B. G. A. Moynihan, Dr. W. T. Grenfell, Mr. Harold J. Stiles, Mr. Robert Jones, Dr. Charles J. Macalister, Dr. Dawson Williams, and Dr. A. Bernard (representing THE LANCET). The chairman having given the customary loyal toasts, the Lord Mayor of Liverpool proposed "Success to the Hospital" in a felicitous speech. Sir Thomas Barlow, in supporting the toast, said that there were no more severe critics of the work of physicians and surgeons than the physicians and surgeons themselves. They were conscious of the many limitations of the hospitals, which were not all due to the physicians and surgeons, but some of which arose out of the conditions under which they worked. Owing to the difficulty they had of securing that their patients should remain under their care a sufficient length of time to enable complete cures to be effected, much of their work was merely patchwork, and the results were extremely disappointing to the medical man. Often, however, the collateral results of their work were quite as important as the objects at which they directly aimed. For example, the great crusade which had been conducted against tuberculosis, besides the direct objects, brought many indirect benefits. Everybody in that room, he presumed, now made a practice of sleeping with the bedroom window open, and they were all appreciating the value of the free circulation of fresh air and sunshine. Although he had not paid it a visit until that day, the Royal Liverpool Country Hospital was an undertaking with which he had been familiar for many years. Dr. C. J. Macalister, who, with Mr. Robert Jones, was so conspicuously associated with the work, had confided to him his plans 10 or 12 years ago. One of the commendable features of the hospital was that its objects were clearly defined. Its promoters knew what they wanted to do, and were not attempting too much. They were not attempting to deal with all kinds of diseases, but had specially directed their attention to chronic cases which would require a very long time to effect complete recovery. He had been greatly impressed by the perfect happiness of the children at the hospital, and by the frugal, careful, and business-like way in which the institution was managed; and he felt he could recommend all persons engaged in the work of hospital reform to study its excellent methods. These were the days of municipalisation of everything, and it might be that eventually they would come to the municipalisation of hospitals. Well, he hoped he would never live to see that day. Liverpool, it was true, in regard to its municipal hospitals had a splendid record; all the same, he devoutly trusted that they would never permit such a hospital as they had established at Heswall to become a municipal hospital. In time he hoped that at Heswall they would make developments on educational lines by grafting into the hospital work the teaching of handicrafts and other subjects. The greatest improvements and reforms would always be found to be due to voluntary effort, and therefore he besought them to stand firmly by their voluntary institutions. Mr. Moynihan observed that the scheme of the hospital had been carried through with every circumstance of care, and the skill with which the general plan had been organised was only equalled by the enthusiasm of those interested. The toast of "The Medical Profession," proposed by Sir Edward Russell, was replied to by Sir Donald Macalister and Mr. Stiles. The former alluded to the splendid discipline which was obtained in the study of medicine. Liverpool, he said, had bred many leaders of the medical profession, and this city was now teaching many of her older sisters in medicine, especially with regard to tropical disease and hygiene. The health of the Earl of Derby was drunk on the proposition of Dr. Grenfell of Labrador. Lord Derby acknowledged the toast in a graceful and very amusing speech. The dinner was a most enjoyable one, and a number of ladies were present.

*Annual Meeting of Charities.*

At the seventy-seventh annual meeting of the trustees of the David Lewis Northern Hospital, held on Jan. 26th, the Lord Mayor presiding, much eulogy was bestowed upon the admirable work performed. Mr. Walter Holland paid a cordial tribute to the services rendered by the honorary medical and surgical staff. The number of in-patients treated during the year was 2467. 17,878 out-patients were attended to, totalling 43,297 reattendances. The second operating theatre was completed during the year.—The annual meeting of the trustees of the Royal Infirmary was held on Feb. 1st, the Earl of Sefton, the President, being in the chair. Mr. Ralph Brocklebank, the chairman of the general committee, in seconding a vote of thanks to the president, expressed the hope that the committee would be able to get the £5000 which the corporation was taking powers to obtain. He felt confident that the citizens would recognise the enormous work done voluntarily by the hospital, and generously assent to the contribution of £5000 by the corporation. Apart from legacies, which for the most part had been invested, the receipts were £16,723 and the expenditure £18,650, resulting in a deficiency of £1900, which brought the debt up to £6793.

Feb. 28th.

## BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

*University of Bristol: The Colston Research Fund.*

THE funds which the University Colston Society has determined to use for the encouragement of research have been allotted in grants amounting to £624 10*s.* out of a total of £900 available for the purpose. The balance has been carried forward to next year. The grants are of a catholic description, encouraging research in almost every department of the University; those of medical interest include work on the relation between the tonsils and tuberculosis of the cervical lymph glands, research into the chemistry and physiology of certain ferments within the blood in their relation to malignant disease and inflammation, and a further instalment of the work already in progress on the typhoid carrier problem. The bacteriology of diphtheria and the curdling of milk are also to be investigated. These researches will be carried on within the University and supervised by a committee representing the University and the Colston Society.

*"The Bristol Nonesuch."*

Under this attractive title the University magazine makes its first appearance in a cover of Bristol red adorned with a conventional design representing the lychnis. The true inwardness of the title is revealed by a quotation, at the head of the first page, from Gerard's Herball (published in 1633), "the floure of Bristowe or None-such ..... was called Lychnis, that is a torch or such-like light, cleere, bright and

light-giving." Not only is the name of the magazine taken from this flower, which from the above description is seen to be a most appropriate symbol of the functions of a university periodical, but also the colour, Bristol red, which is that of the University hoods. The magazine is to appear three times a year, at the middle of each term. This first number has for frontispiece a portrait of the treasurer of the University, Mr. George A. Wills, whose generous and timely gift of an athletic ground was referred to recently in these columns. A plan of the ground, with a full description, also appears in the "Nonesuch." Other notable contents are an admirably worded In Memoriam notice of the late Lord Winterstoke, "Proceedings" of the various athletic and other clubs, a paper on Student Life in the Quartier Latin, another on "Camp," and so on. Altogether it is a most promising first number, all the more so because it does not depend for its attractiveness on "special features," but merely on contributions of the type which we may expect in all future issues. The editor is to be congratulated on his vigorous seedling.

*Bristol Royal Infirmary.*

At the annual meeting of governors held on Feb. 14th a statement of finance and work during 1910 was presented. The ordinary income amounted to £13,714, exclusive of legacies, the addition of which brings the total to £19,100. This includes ordinary subscriptions to the amount of £6062, an increase of £435 over the previous year. The total ordinary expenditure amounted to £17,282, or £119 more than in 1909; to this must be added building alterations and additions amounting to £1057, and investment of certain legacies in corporation stock costing £1215, bringing the total expenditure up to £19,555. This adds £455 to the 1909 deficit, which stood at £3532, the total deficit at the end of 1910 being £3987. The total numbers of in-patients and of out-patients were 4149 and 52,813 respectively; these totals include cases remaining over from the end of 1909, and represent an increase over the work of that year. The daily average of occupied beds was 240 (out of a total of 270), the average stay of each patient was 22 days, and the average cost of each occupied bed was £55 10*s.* An appreciative reference was made to the work of the nursing staff and to the services of the honorary staff. An account of the progress of the new buildings showed that the necessary excavations had been made for the foundations, and that many thousands of tons of stone had been worked. The total cost is estimated at £70,000, of which £35,000 are in hand. A resolution was passed empowering the treasurer "to sell such of the securities of the institution as may from time to time be resolved upon by the committee for the purpose of defraying the outlays upon the works of the new buildings." It is earnestly to be hoped that such a step will never be necessary.

*Queen Victoria Jubilee Convalescent Home, Bristol.*

The annual report of this most useful institution states that in 1910 a record number of patients, 1983, were admitted. Of these, 687 came from the Royal Infirmary, 670 from the General Hospital, 28 from the Eye Hospital, 74 from the Bristol Dispensary, 19 from the Clifton Dispensary, while 338 were free patients admitted from various sources and 167 were paying patients. The income was £2883 15*s.* 10*d.*, the expenditure £2824 16*s.* 10*d.* It has been possible to allot two more beds each to the General Hospital and to the Royal Infirmary, each institution now having the use of 28 beds. Further, by the munificence of the late Mr. Enoch Hendy two more "free" beds have been endowed. Of the other beds specially allotted, the Eye Hospital and the Clifton Dispensary have one each and the Bristol Dispensary three. During the year the average stay of each patient has been 15 days, and the average increase in weight 3 pounds.

*The Winsley Sanatorium.*

The sixth annual report of this institution, presented at a recent board meeting by the chairman, Dr. R. Shingleton Smith, was very satisfactory. It showed that the daily average of patients is 65·7, and the total number admitted since the sanatorium was opened in 1904 is 1292. Of these, 85 per cent. have been improved to some extent, and 48·2 per cent. have gone out fit for some work. A linen league has been formed, under the presidency of Lady Hobhouse. The report of the finance committee is even more encouraging, for it shows that the institution is free from debt for the first time in its history, thanks mainly to the late Mrs. Procter Baber's munificent gift of £10,000. A balance remains in hand of £2122 4*s.* 3½*d.*, to be used as the nucleus of a fund for certain proposed extensions. The Manchester Unity of Oddfellows has undertaken the maintenance of two beds, and the total extinction of the mortgage debt has set the institution free from its heavy annual payment of interest on loan. The ordinary income has also increased from £5561 3*s.* 8*d.* in 1909 to £5838 7*s.* 6*d.*

*Bristol Medical Dramatic Society.*

A very creditable performance of Sir A. W. Pinero's farce, *The Schoolmistress*, has formed the annual outburst of energy for which the Bristol Medical Dramatic Society exists. The piece chosen was eminently suitable, and the cast proved equal to the occasion. The All Saints' Hall was well filled each evening from Feb. 21st to 25th. Mr. W. S. V. Stock as the Hon. Vere Quekett, Mr. J. C. Heaven as Admiral Ranklin, Mrs. F. W. Rogers as Miss Dyatt, and Miss Sylvia Heaven as Miss Hesslerigg are specially worthy of commendation. The proceeds will be devoted to the funds of the University athletic ground.

*The Bristol Coronership.*

Mr. H. G. Doggett, who has been coroner for Bristol since 1892, has resigned the appointment. His resignation will be regretted by the local members of the medical profession, to whom he was always most kind and courteous. The deputy coroner, a solicitor, is a candidate for the post, and the names of two other members of the legal profession are also mentioned. Up to the present there is only one medical candidate, who is also a barrister.

*Bristol Hospital Sunday Fund.*

The collections received up to date amount to £1600 9*s.* 7*d.*, and of this sum £1400 have been allotted as follows: Royal Infirmary, £609; General Hospital, £511; Children's Hospital, £189; Eye Hospital, £91, other sums going to various smaller institutions.

*The Royal Devon and Exeter Hospital.*

The annual meeting of the subscribers of the Royal Devon and Exeter Hospital was held on Feb. 16th. The medical report stated that during 1910 the in-patients numbered 1614, compared with 1585 in 1909. 5014 out-patients were treated, as against 5500 in the previous year. The average cost per occupied bed was £56 16*s.* 4*d.* per annum. The financial statement showed the ordinary income was £10,062, the expenditure £11,129, the deficit being £1067.

*The Exeter Dispensary.*

The annual meeting of the subscribers of the Exeter Dispensary was held on Feb. 22nd. The medical report stated that during 1910 the number of "recommends" used amounted to 5068, compared with 5003 in 1909. Since the opening of the dispensary in 1818 the patients treated amounted to 337,575. The financial statement showed that there was an adverse balance of £269 on the ordinary income of the year, but it was stated that the invested funds of the charity amounted to about £21,000.

*Exeter Sanatorium for Infectious Diseases.*

The annual report of the medical officers of the Exeter Sanatorium shows that during 1910, 296 cases were admitted; of these, 217 came from the city of Exeter and 79 from the county of Devon. There were 16 deaths, equal to a rate of 5·45 per 100 cases admitted. In 1909 the admissions were 361.

*British Red Cross Society.*

At a public meeting held recently at Axminster (Devon) it was decided to form a men's voluntary aid detachment, and Mr. John Neville Blithe Vise, L.R.C.P. Lond., M.R.C.S. Eng., was appointed commandant.

*The Care of the Feeble-minded.*

At its last meeting the Taunton board of guardians offered the workhouse, with the exception of the infirmary, as a suitable building for the accommodation of pauper idiots, imbeciles, and epileptics for the county of Somerset, and this offer will be conveyed to the various boards of guardians concerned.

*Royal West of England Sanatorium, Weston-super-Mare.*

The annual meeting of the subscribers to this institution was held on Feb. 18th. The medical report stated that during 1910 the patients admitted numbered 2322; of these 1143 were males and 1179 females. The financial statement

showed that the expenditure amounted to £4020, and that the receipts showed a falling off of £900 compared with the previous year. This decrease is due to the fact that during the past year the committee had admitted no cases of pulmonary tuberculosis, but it is hoped that more subscribers will come forward and that the usefulness of the sanatorium will be maintained.

*The Mortuary Accommodation at Falmouth.*

At a recent inquest held in Falmouth (Cornwall) the medical man who performed the necropsy complained to the coroner of the state of the mortuary. He stated that there was no water-supply, no proper table, and that the only light which could be obtained was through keeping the door open. He added that there were no towels or means of washing the hands. The coroner said that such a state of affairs was not a credit to Falmouth, and at the request of the jury he decided to draw the attention of the town council to the subject.

Feb. 28th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Association for the Promotion of the Registration of Nurses in Scotland.*

AT the annual meeting of the Association for the Promotion of the Registration of Nurses in Scotland, held in the lecture theatre of the Royal Infirmary, Edinburgh, on Feb. 24th, the chair was occupied by Lord Inverclyde, the President of the association, who said that he was glad to acknowledge the increasing interest which nurses were taking in the work of the association. The various reports were unanimously adopted. Resolutions were passed approving the action of the executive during the year and reappointing the officers and executive for the coming year.

*Glasgow R.A.M.C. Officers' Dinner.*

The annual mess dinner of the officers of the Glasgow units of the Royal Army Medical Corps (Territorial Forces) was held last week. Sir George T. Beatson, K.C.B., Administrative Medical Officer of the Lowland Division, presided, and the company, which numbered over 100, included Surgeon-General W. L. Gubbins, C.B., Director-General of the Army Medical Service. The chairman, in the course of the evening, made a statement regarding the medical service of the Lowland Division. He indicated in the first place that the Territorial Medical Service had been framed on the same lines as that of the Regular Army. It consisted of sanitary and medical establishments of regiments; ambulances in the proportion of three to a division, with the cavalry ambulance for the mounted brigade; sanitary companies where they were thought necessary and water duty men; means for evacuating the sick and wounded from the field units to the general hospitals; general hospitals with staffs of physicians and surgeons from the large civil hospitals in the locality; convalescent homes; and a divisional staff for supervising and coördinating the above formations. As regarded regimental assistance in the Lowland Division, all the units with the exception of two had been provided for, but as each had two medical officers and only one would be called up on mobilisation, they would be quite able to fill up the deficiency. He was glad to say the field ambulances were at full strength in officers and men. They had not yet been called upon to form sanitary companies, but they had the full complement of water duty men, who had done duty during the past two seasons with their respective regimental units. The work of providing voluntary aid detachments for the rapid evacuation of the sick and wounded from the field ambulances to the general hospitals had been enthusiastically taken up in Scotland by the county committees of the Red Cross Society. It was gratifying to know also that the general hospitals were complete. They had obtained the surgical and medical staff and the nurses, and had practically settled upon the buildings, so that within the next ten days, if the consent of the director-general was obtained, they could have in Glasgow and Edinburgh three general hospitals giving 1560 beds in working order within 24 hours. In this connexion he acknowledged they had been met in a very generous and helpful spirit by the Poor-law authorities. Finally, as regarded convalescent homes, they would be arranged for through the Red Cross Society.

*Medical Inspection in Aberdeen and Increased Cleanliness of Children.*

Dr. G. Rose, medical officer of schools in Aberdeen, reports a marked improvement with regard to cleanliness between the children who applied for enrolment in January, as compared with the condition of those who sought admission in August. Of the 763 children examined one-fifth were found defective, the defects calling for exclusion being in 9 cases ringworm, in 5 impetigo, in 1 itch, in 8 vermin, and in 4 other affections. The expediency of excluding such cases on the first attempt to enter school was thus apparent.

*Tuberculosis in Aberdeen.*

Dr. Matthew Hay, medical officer of health of Aberdeen, states in his annual report that for the last few years he has been collecting information regarding the prevalence of tuberculosis in Aberdeen. In 1909 there were 181 deaths from pulmonary phthisis, and 89 deaths from other forms of tuberculosis. The mortality rate both from pulmonary and from other forms of tuberculosis was appreciably lower in Aberdeen than in any other of the large towns. In recent years nearly twice as many girls as boys have died from phthisis. Dr. Hay thinks it not unlikely that this is due in part to the more outdoor life led by boys. Under five, boys, more than girls, tend to be phthisical. Dr. Hay suggests that the high mortality from tuberculosis in infancy—whatever be the source of infection—is due to the low vital resistance or immunity characteristic of the first two or three years of child life. He does not desire to be understood as denying that infantile tuberculosis is due in part to bovine infection. The investigations of the English and German commissioners make it practically certain that infected cow's milk is a source of tuberculosis in infants and children; but the chief source, nevertheless, in them, as in adults, is human infection.

*Vaccination in Aberdeen: Interesting Figures.*

Dr. Hay also furnishes to one of the local papers interesting figures with regard to the vaccination of children in Aberdeen. In 1880, 99 per cent. of the children were successfully vaccinated; in 1890 the figure had fallen to 96 per cent., and in 1900 it was also 96; while in 1906—the year before the passing of the Act—the percentage was 90. In 1907, as a result of the concession to "conscientious objectors," the figure fell to 85 per cent. and in 1908 to 84 per cent., the percentage in 1909 being 85 per cent. In 1907, 2 per cent. of the children were not vaccinated on account of "conscientious objections." In 1908 the percentage was 5·5, and in 1909, 8·4. Since the introduction of the Act there has been a drop of 5 per cent. in the number of successfully vaccinated children in Aberdeen, and compared with 1900 a drop of 10 or 11 per cent.

*Diamond Wedding of an Orkney Doctor.*

On Feb. 20th Dr. and Mrs. Logie of Isbister, Orkney, celebrated the sixtieth anniversary of their wedding. Dr. Logie, who is in his ninety-first year, was for many years a medical practitioner in Kirkwall.

March 1st.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Workhouse Inmates and Old Age Pensions.*

WHEN the pauper disqualification for pensions was removed, an old man who had been for years an inmate of the Swinford Workhouse took his discharge, and was awarded an old age pension. He then claimed admission to the infirmary as a paying patient, the cost of maintenance being a few pence less than the weekly pension. The local pensions committee brought the matter before the Local Government Board, which declared the old man entitled to his pension. His example is now being followed in other unions. In Claremorris the guardians have ordered the master of the workhouse to prepare claims for all the old people in the house on condition that they pay for their maintenance. The result should be a considerable relief to the rates, together with a small amount of pocket-money for the old people.

*Beri-beri in Galway.*

Last week three negroes of the crew of a barque which arrived in Galway from the West Coast of Africa were reported on the sick list. The port medical officer, Dr. W. A. Sandys, and the Local Government Board inspector, Sir J. Acheson McCullagh, diagnosed beri-beri, and the men were removed to the union fever hospital. It is not clear why the patients were not sent to the port isolation hospital. The presence of beri-beri in such an insanitary town as Galway is likely to cause some anxiety.

*Qualification for Inspectorship of Lunatics.*

Some time ago, in view of an expected vacancy in the office of inspector of lunatics, the claim was made that one of the two inspectors should be a woman. Now it is further suggested that one of them should be a "layman of experience" in business matters. The following resolution was passed last week by the Cork asylum committee:—

Whereas the lunatic asylums are in some degree hospitals for curable patients, but in the main homes for chronic inmates, and their upkeep costs the nation over half a million sterling per annum, and whereas there are extensive buildings, workshops, and machinery, lands, farming stock and implements, workmen of all classes, contractors for the supply of the most varied commodities, large numbers of inmates, whose work can be applied reproductively, and other important concerns of a purely business nature, we are strongly of opinon that one of the inspectors of lunatics should be an expert in mental diseases and that the other should be a layman; and that in the interests of the sound and economic working of asylums we respectfully request the Lord Lieutenant to appoint to the post of second inspector, now about to become vacant, a layman of much business ability and experience, of strong grasp of finance, and of great power of organisation, and that copies of this resolution be forwarded to the asylum committees of Ireland.

*Visit of H.R.H. the Princess Christian to a Dublin Hospital.*

H.R.H. the Princess Christian visited last week the Royal City of Dublin Hospital. Her Royal Highness has continuously manifested her interest in this institution since she laid the foundation-stone of its nurses' home in 1900.

*How Dublin's Poor Live.*

At the annual dinner of the Royal Institute of Architects held in Dublin on Feb. 25th, the Lord Lieutenant said that the last census showed that one-fourth of the entire population of Dublin lived in one-roomed tenements, and more than 8 out of every 100 tenements of all kinds were one-room tenements having five or more occupants. This proportion showed twice as many such tenements as in Glasgow, compared with the population of that city, nearly four times as many as in Edinburgh, and 32 times as many as in Liverpool. The excess of such tenements as compared with Belfast was even greater, and still more so as compared with Manchester, where such one-room tenements were only a small fraction of the whole. Again, if they took the number of people who lived in one-room tenements (with five or more occupants) they found that in Dublin the number was 1061 out of every 10,000 of the population; in Glasgow 524, Edinburgh 233, London 70, Liverpool 24, Belfast 10, and Manchester 5. His Excellency quoted Sir Charles Cameron, medical officer of health of Dublin, as follows: "It is the large proportion of the one- and two-room tenements in Dublin which reacts so injuriously on the death-rate of the whole population." Lord Aberdeen spoke of the moral effects of life in such conditions, and said the marvel was that there was not a great deal more vice and crime. He strongly urged the providing of healthful dwellings for the people.

*Londonderry Infirmary.*

Mr. Walter Bernard, physician to the Londonderry Infirmary, has felt called upon to resign his position, owing to failing health. It has been decided to call a special meeting to discuss the terms of appointment of the honorary medical staff. In an institution in which it was reported that on Feb. 21st there were 56 in-patients as well as a good-sized extern department, there is room for physicians, surgeons, and specialists.

*Death of Mr. William Leatham, M.A. T.C.D., L.R.C.S. Irel., J.P.*

Mr. William Leatham, one of the oldest and best-known medical practitioners in County Tyrone, died at his residence, Lisdhu, Dungannon, on Feb. 20th, at the advanced age of 73 years. Mr. Leatham was an M.A. of Trinity College, Dublin, and in 1860 became an L.R.C.S. Irel. He practised for 40 years in the Coalisland district, where, until a few years ago, he was dispensary medical officer. He was medical attendant to the Royal Irish Constabulary and also a certifying factory surgeon. During a long professional career Mr. Leatham enjoyed very fully the confidence and esteem of all classes and creeds.

*Diphtheria in Rathfriland.*

An epidemic of diphtheria has broken out in Rathfriland, County Down, and the surrounding district. The public schools have all been closed. Several cases have been sent to Newry Hospital, and the authorities are doing everything to grapple with the serious situation that has developed.

*The Samaritan Hospital, Belfast.*

The medical report presented at the annual meeting of the Samaritan Hospital, Belfast, on Feb. 27th, showed that during the past year there were 589 extern and 245 intern patients. Of these 222 required surgical operation, 79 of them being major operations. The in-patients and operations performed were more numerous than in any previous year. Financially the amount of debt at the end of the year was close on £470.

Feb. 28th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Treatment of Fracture of the Wrist.*

AT a meeting of the Academy of Medicine held on Feb. 14th M. Lucas-Championnière presented a memoir by M. Marbaix giving details of the treatment of a number of cases of fracture of the wrist. In this memoir M. Marbaix showed the advantages of massage and immediate mobilisation which he had practised in the most thorough manner. He said that after immobilisation of the injured part in the orthodox plaster apparatus the average interval before the patient returned to work was 200 days, but this period was reduced to 40 days when massage and mobilisation were employed.

*The Teaching of "Puériculture."*

At the same meeting M. Pinard made an important communication on the subject of puériculture, and as a type of this means of contributing to the preservation of the race he instanced the Pouponnière, an admirable institution at Porchefontaine, most ably conducted by Madame Veil-Picard and Dr. Raimondi. Single young women who had become mothers were received there with their infants and were provided with a home in return for the services which they gave as wet nurses in the institution. The premises included an infirmary and a model cowhouse, in which the cows were managed so that their milk could be used without being boiled. Among 1946 infants admitted during the last ten years there had been only 54 deaths. Opportunities for the teaching of puériculture are provided. At Porchefontaine the pupils of the normal school of Versailles and those of Sèvres receive practical instruction. M. Pinard was of opinion that in every town in France where there was a normal school for girls there ought to be an institution for puériculture in connexion with it.

*The Mortality of Adults in France.*

The death-rate commission, which is officially subordinate to the Ministry of the Interior and has for its president Professor Lannelongue, a member of the Senate, has adopted the conclusions contained in the report by Professor Lannelongue and Dr. A. J. Martin on the mortality of adults in France. After pointing out that this mortality is steadily declining in France, the report states that this decline is due to the increased attention paid to public hygiene, to the sanitation of towns and houses, and to the personal care of health. The mortality due to transmissible and preventable diseases is continually becoming less, with the single exception that the mortality from tuberculosis either remains stationary or even increases a little, and is responsible for one-fifth, and sometimes even for one-fourth of the total mortality. It is, therefore, in the opinion of the commission, urgently necessary to take all requisite measures for reducing this serious danger to life. For this purpose endeavours should be made to stop the progress of alcoholism, and to encourage whatever tends to the prevention of tuberculosis, including precautionary measures due to individual initiative. It is especially necessary that tuberculous disease should be recognised at the first appearance of the symptoms. The patients in this early stage should receive appropriate treatment, should be prevented from becoming a danger to others, and should have their

necessities provided for as long as they required to be kept under observation.

*Leprosy.*

A commission was some time ago appointed by the Société de Pathologie Exotique for the purpose of reporting on the prevention of leprosy in France. The report has now been presented, and recommends (1) the inclusion of leprosy among the diseases which are compulsorily notifiable in France; (2) the maintenance of a discreet supervision over lepers in order that infected children may be prevented from attending the ordinary schools and adults prevented from following certain occupations; (3) the hospital treatment of leprous beggars and destitute persons; (4) the encouragement of private sanatoriums; and (5) diplomatic arrangements with countries where leprosy prevails in order to prevent the migration of foreign lepers into France.

*The Prevention of Plague.*

An international sanitary conference will be held in Paris next May. In order to facilitate its proceedings the subjects of discussion will be arranged by the permanent committee of the international office of public hygiene, and as soon as the committee has considered these questions its conclusions will be communicated to all the governments invited to take part in the conference.

*Action for Damages against Medical Men.*

A man who had had his face, arms, scalp, and back completely covered with tattoo marks at last became anxious to have them removed and for this purpose he sought advice at the Hôpital Beaujon. Dr. Bazy of that hospital recommended treatment by air heated to a temperature of 800° C. and referred the applicant to Dr. Vignat, who undertook the case and applied the treatment successfully as regards the man's face. On the fingers being afterwards subjected to a similar process the man alleged that the hot-air treatment caused stiffness of his finger-joints and brought an action against Dr. Bazy and Dr. Vignat claiming 6000 francs as damages. These gentlemen, however, cited the man before the *tribunal des référés* on the ground that it was necessary to have him immediately examined by a surgical expert because he was keeping his fingers perfectly immoveable and this might in course of time have the effect of causing stiffness of their joints. They also maintained that it would be useful to have precise information as to the condition of the man's fingers from the present time until the date of the trial.

*Attempted Simulation of Pyrexia.*

For several months past much interest has been aroused in France by the trial of Dr. Brengues, who is accused of having murdered his brother-in-law, an astronomer, in order that he might inherit the property of the deceased. At the present time the case is under consideration by the assize court of Nice. Dr. Brengues having represented that he was in bad health three medical experts were appointed to investigate his symptoms. After hearing the statements of the accused, who said that he suffered from several serious disorders, the experts made a preliminary examination and went away, directing the chief warder to take the temperature of the accused at 6 P.M. When this time arrived the warder telephoned to one of the experts stating that after he had placed the thermometer in position he went away for a few moments, and on his return was astonished to find that a prisoner who shared the cell with Dr. Brengues was warming the thermometer over the gas jet, and that it showed a temperature of 42·8° C. The expert then proceeded to the prison, where he noted that the pulse of the accused was regular and making 80 beats per minute; the thermometer in the axilla showed a temperature of 38° C., whilst another one placed in the rectum showed 37·2°. Both thermometers were then placed in the rectum, when the one registered 37·2° and the other 37·4°. The case was therefore an instance of attempted malingering.

*Monument to Professor Cornil.*

A monument in memory of Professor Cornil will be unveiled on Sunday, March 5th, at 10.30 A.M., at the École Pratique of the Paris Faculty of Medicine. The President of the Republic will preside at the ceremony. The monument has a fine appearance, and is the work of Dr. Paul Richer, a member of the Academy of the Fine Arts and of the Academy of Medicine.

Feb. 27th.

# VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*Remarkable Cases of Swallowing Foreign Bodies.*

A SUICIDAL inmate of a lunatic asylum in Vienna swallowed several spoons and forks, which he had purposely broken across, but singularly enough no appreciable ill effects were produced. He was subsequently discharged and was able to do hard work as a labourer for two months, after which he began to suffer from hæmorrhage from the mouth. This was at first supposed to be of pulmonary origin, but when an examination by a surgeon proved that the blood came from the stomach he was admitted into a surgical ward and operated upon by Dr. Rotheissen, who showed the case at a meeting of the Gesellschaft der Aerzte. Before the operation no foreign body was palpable in the abdomen when the patient was in the reclining posture. The X rays showed near the vertebral column a dark shadow which sank into the pelvic space when the man was standing, and the foreign bodies could then be felt by the hands. When the abdomen was opened the stomach was found to be hypertrophied; the pyloric part was open. A small incision made it possible to extract 14 broken spoons and their handles. There was no gross lesion of the mucous membranes except a condition of chronic catarrh, and the recovery was uneventful. In the case of another patient on whom an operation was performed a short time ago the contents of the stomach had led to perforation of its walls causing peritonitis. The operation revealed the presence of 42 nails which he had swallowed during an attack of melancholia; one of them had worked its way through the wall of the pyloric part, injuring the serosa, whilst the others had already passed the pylorus and lay in the duodenum at a place which was very difficult of access, and as the patient seemed to be in a desperate condition they were left undisturbed and eventually passed out by the anus. It was afterwards ascertained that a month previously the patient had swallowed 10 tacks, which also had passed through his bowels without producing any harm. Both patients are at present doing well.

*Precautions against Plague: End of the Cholera Quarantine.*

The westward progress of plague along the Siberian railway and the possibility of its conveyance by shipping were discussed at the last meeting of the Austrian chief Board of Health (Oberste Sanitätsrath). At present there is no cause for alarm in this country, but the medical officers of health on the eastern frontier as well as in the Adriatic ports have nevertheless been requested to use the utmost vigilance. A quarantine of eight days has been ordered for all arrivals from suspected districts. There was an outbreak of plague in Vienna some ten years ago, when a plate culture containing plague bacilli was scattered in the midst of several persons in one of the laboratories of the General Hospital. At that time Dr. Müller, who had been one of the members of the Austrian plague commission sent to India for the purpose of studying the disease, volunteered to attend the infected persons, two of whom died, as well as Dr. Müller himself from the same cause, but the outbreak spread no further. This prompt success was due to the adoption of most stringent measures, and there is every reason to hope that any fresh invasion could be similarly overcome. As there have been no cases of cholera in Hungary for more than two months, Austria and Hungary have now been officially declared to be free from this disease, and no special precautions are being taken with regard to it.

*Death of Professor Gustav von Braun.*

Some days ago Professor Gustav von Braun, the senior of the Vienna gynæcologists, died at the ripe age of 82 years after a short illness. He was really a self-made man, who by sheer force of talent had attained a most successful practice among the upper class of the population, whilst he at the same time filled until 10 years ago the post of director of the obstetric clinic for midwives in Vienna. He was one of the first to recognise the importance of Semmelweis's observations relative to puerperal infection, and when the era of antisepsis and asepsis arrived he was quick to adopt these new departures as soon as their utility was proved. It is in great part due to him that the Austrian midwives are capable of using modern methods in the treatment of

parturient women, for he organised the teaching of midwives in a most efficient manner. He worked a good deal on certain problems connected with his specialty, especially on anomalies of the pelvis, on extra-uterine pregnancy, and on obstetric surgery. When circumstances required he used to deliver lectures and hold classes in the French, English, and Italian languages for the convenience of the numerous foreign students who come to the University of Vienna.

*Death of Professor Escherich.*

Professor Escherich, the celebrated specialist for diseases of children, died on Feb. 15th, after an illness of only two days. While visiting the wards of his clinic the day before his death he mentioned that he did not feel quite in his usual health. Suddenly he began to speak in different languages, his mind wandered, and he had to be conveyed to his home, where he died the next day. An acute exacerbation of arteriosclerosis from which he suffered was brought on by exertion and abruptly terminated his brilliant career. He was born 54 years ago, and after graduating at a comparatively early age he was soon attracted to the study of children's diseases. While still a young man he obtained a high reputation as a keen observer and an excellent teacher; his first appointment as an independent director of a clinic was in Munich, whence he was called to Graz. In 1902, when Professor von Widerhofer died, he was appointed professor of pædiatrics in Vienna. Here he soon created a special school, which energetically followed up the problems of combating the mortality of infants by scientific and social work. The chemistry and bacteriology of early life were the leading features of the clinical research carried on under his supervision, and numerous contributions to science have originated or were inspired in his clinic, the staff of which always included proficients in various departments of investigation. Professor Escherich's chief published works were "The Bacteria of the Intestines of the Infant," "Diphtheria and Serotherapeutics," and "Tetania."

Feb. 27th.

## CANADA.

(FROM OUR OWN CORRESPONDENT.)

*Annual Dinner of McGill Medical Students.*

AT the annual dinner of the McGill medical students, held in Montreal on the evening of Feb. 2nd, Dr. R. Tait McKenzie, professor of physical education at the University of Pennsylvania, Philadelphia, U.S.A., was the guest of honour. Mr. Roy McGibbon, president of the dinner committee, occupied the chair, and seated at the head table were Principal Peterson, Dean F. J. Shepherd, Registrar J. W. Scane, Judge Archibald, Professor H. S. Birkett, Professor W. F. Hamilton, Professor A. E. Garrow, Professor J. C. Cameron, Professor Nichols, and Dr. Andrew Macphail. Representatives from Toronto, Queen's (Kingston), and Laval (Quebec) failed to be present, being snow-bound on account of the severe blizzard raging that day. Dr. Tait McKenzie spoke of the physical education of the city dweller and said that the whole ground of medical teaching was changing with the life of the people. To-day there are 60 per cent. of the civilised people living in cities. Physical education is the study of the most vital problem facing modern nations. It was the constructive side of medicine. A letter was read at the gathering which went to show that $10,000 had been subscribed as a memorial fund to the late Dr. Arthur A. Browne, and that the committee in charge of it had decided to found a scholarship at McGill to be known as the Arthur A. Browne Scholarship. Dr. T. G. Roddick wrote that he was unable to be present, but sent the students encouraging news with regard to Dominion registration. He confidently expected that in the course of a few days the Canadian Parliament would have passed the amendment to the Canada Medical Act of 1902, which, when ratified by the nine provincial legislatures, would give Canadian students of medicine the right on graduation to commence practice in any province they pleased without further examination. This amendment has recently been considered by a special committee of the House of Commons, but it did not pass unanimously in its entirety, as representatives from the province of Saskatchewan, where there is no university and no medical school, objected to the university representation clause.

*Notre Dame Hospital, Montreal.*

During the year 1910 over 2500 patients were admitted to Notre Dame Hospital, Montreal; in 1909 there were 2215. Out of the 2500 admitted over 2000 were discharged absolutely cured. During the whole year there were 104 deaths in the institution. Some were left in the institution at the end of the year and the balance went out incurable. The ambulance calls numbered 1058. The month of December was the heaviest month. There were 21 deaths, 15 of which occurred within one hour after admission. A judgment has recently been rendered in Montreal of interest to the medical profession in connexion with this hospital. The complainant was a man whose wife had been admitted to the hospital with an injured ankle. When examined the injury was found to be a sprain. After a few days' rest in bed she was ordered to get up, which she did under protest and then fell upon the hospital floor, this time sustaining a fracture of the wrist. Action was entered for $625 damages on the ground that the woman had received additional injury in the hospital through carelessness of her attendants. The court held that the attendants had done all that was scientifically possible for the woman and judgment was rendered for the defendants.

*Poliomyelitis Infection from Canada.*

Dr. Eugene H. Porter, Commissioner of Health for New York State, is arranging with the Canadian authorities for an interchange of information and an agreement as to quarantine regarding poliomyelitis between the Province of Ontario and the State of New York. The disease has been prevalent to some extent along the Niagara frontier.

*Reciprocity in Medical Teaching.*

The medical faculties of Toronto and McGill Universities have entered into an agreement to accept each other's examinations up to and including that of the fifth year. When any student leaves either university with a clean bill of health, both academic and moral, he shall be awarded the same standing in either university without further examination. He could spend one year in Toronto, the second in McGill, and so forth. This signifies that for the future the two medical faculties will act as one in the matter of medical standards. It will tend towards uniformity in standards of matriculation, curricula, and examinations. If these two leading universities be supported by the other universities of Canada in this agreement there will be a tendency to revision and elevation of medical standards all over the Dominion.

*Caisson Disease in Canada.*

Dr. P. Conroy of Charlottetown, P.E.I., who for three years was medical attendant upon several hundred caisson workers employed in constructing a large bridge near or at Charlottetown, gained thereby an opportunity to study caisson disease at first hand. An interesting point elicited by Dr. Conroy, and duly chronicled in a paper in the *Maritime Medical News*, was that the workers themselves by their own practical experience had learned the best treatment. When the disease develops in a workman his comrades quickly take charge of him. He is immediately placed in a hot bath, rubbed vigorously, and then kept absolutely quiet in a hot room for several hours until convalescent. Dr. Conroy suggests that the disease is due to a toxæmia, and that its treatment by the workmen produces free perspiration as a safeguard.

*Medical Inspection of Schools in Canada.*

Medical inspection of schools in Canada has been in vogue to some extent for four or five years in Montreal, Halifax, Hamilton, Ottawa, Vancouver, and latterly in Toronto. Last year the Toronto Board of Education gave it a tentative trial, employing two inspectors and appropriating $2500 for the work. The work this year is to be on a more extended scale in Toronto. A chief medical inspector of schools has just been appointed in the person of Dr. E. W. Struthers at a salary of $2500 per annum. He is to have eight medical inspectors and a corps of nurses numbering 17 and a chief nurse. The total appropriation set apart for this work will reach $24,000. The Board of Education decided to retain control over the inspection work and not to delegate it to the medical health department of the city. In Halifax one general inspector and an oculist are employed with a few nurses. In Montreal the work is under the health department, with 17 medical inspectors at a yearly salary of $1200.

Vancouver works under a system responsible to its Board of Education.

*Stamping Out the Drug Habit in Canada.*

The Federal Government is considering legislation looking to control and to forbid under severe penalties the importation, manufacture, sale, or use of opium, morphine, and cocaine for other than scientific medicinal purposes. Other habit-forming drugs will probably be included in the measure. 12 to 15 per cent. of all the young people in the penitentiaries of Canada attribute their downfall to drugs, and it is authoritatively stated by the Dominion parole officer that, if a complete census were made, fully 25 per cent. would be more correct. During the last six months the police of Montreal have made 125 arrests of persons selling or using cocaine. The measure is strongly supported by the Canadian Pharmaceutical Association. The Quebec Government is also moving along similar lines. The Dominion Parliament will also enact legislation looking to the prohibition of the use of white phosphorus in the manufacture of matchmaking.

*New Board of Health for Ontario.*

The Ontario Government has just appointed a new board of health for that province. Dr. Adam H. Wright, Toronto, has been appointed chairman, to succeed Dr. Charles Sheard, whose term of office expired Dec. 31st, 1910. The other members of the board will be Dr. D. B. Bentley, Sarnia; Dr. James Roberts, Hamilton; Dr. George Clinton, Belleville; Dr. W. H. Howey, Sudbury; and Dr. J. W. S. McCullough, Toronto, the only member of the old board to be appointed. Dr. McCullough, who succeeded Dr. Charles A. Hodgetts a few months ago, will be chief health officer for the Province and secretary of the board.

*Toronto University and Medical Licences in Ontario.*

Dean C. K. Clarke, M.D., of the medical department of the University of Toronto, has thrown a bombshell into the camp of the Ontario Medical Council. In the report of the Board of Governors of the University to the Ontario Government there are set out the reasons, according to Dr. Clarke, why the Ontario Government should take away from the Ontario Medical Council the right to fix standards of medical matriculation, curricula, and to conduct examinations. He calls for a revision of the Ontario Medical Act whereby a student in medicine upon graduation would receive at the same time he receives his degree his licence to practise in the Province of Ontario without further examination by the Ontario Medical Council. Dr. Clarke claims that the Council hampers the University in promoting better educational facilities and setting higher standards for matriculation and examinations. He considers that it is not the function of the Council to set standards, conduct examinations, but to protect the general public from quacks and dishonourable and criminal practitioners.

*Reorganising Toronto's Health Department.*

Dr. Charles J. C. Hastings, recently appointed medical health officer of Toronto, has a comprehensive scheme of reorganisation of the health department of Toronto. Dr. Hastings estimates the expenditure for his department for 1911 at $159,000, which is $67,000 more than was spent in 1910. Mr. George Nasmith has been placed at the head of the laboratory and Dr. F. J. Hazlewood is to superintend the isolation hospital.

*Manitoba Medical College.*

The Faculty of the Medical College of Manitoba have decided to withdraw their offer of turning the college over to the University of Manitoba as a medical department. It is stated that this could not be carried out until the College first got the consent of the general profession in Manitoba, as the college only holds the property in trust.

Toronto, Feb. 16th.

UNITED SERVICES MEDICAL SOCIETY.—The next meeting of the above-named society will be held at the Royal Army Medical College, Grosvenor-road, S.W., on Wednesday, March 8th, at 5 P.M., when papers will be read by Lieutenant-Colonel P. J. Freyer, I.M.S. (retired), on "The Symptoms and Modern Methods of Diagnosis of Stone in the Kidney, Ureter and Bladder," and by Colonel H. Hathaway, A.M.S., on "Ambulance Transport."

# MEDICAL INSPECTION AND TREATMENT OF LONDON SCHOOL CHILDREN.

*Proposals for Reorganisation.*

THE report to the Education Committee of the County Council on the re-organisation of medical inspection and treatment in London, referred to in a leading article in THE LANCET last week (p. 514) was duly presented by the Children's Care Subcommittee at the meeting on Feb. 22nd. Owing, however, to pressure of business the consideration of the matter was adjourned until March 1st. As our article indicated, the report of the subcommittee took the form of an elaborate argument in favour of placing the work at present under the direction of the medical officer for education, Dr. J. Kerr, definitely under the supervision of the education officer, Mr. R. Blair.

The subcommittee, first defining the present position, pointed out that the Acts under which medical inspection and treatment were carried out were administered by the Board of Education and the duties the Acts enforced or legalised were imposed on the Council as local education authority. The Council's medical work was carried out by officers whose entire duties were concerned with the administration of education. As regards medical inspection, the whole of the work—administrative as well as professional—was carried out by Dr. Kerr. He was technically an officer in the public health department of which the chief officer was Sir Shirley Murphy, but Dr. Kerr had enjoyed a large measure of independence and had had delegated to him expressly by the Council the exercise of the duties of school medical officer under the regulations of the Board of Education. The arrangements for medical treatment were carried out by the education officer, Mr. Blair, as part of the general machinery of educational administration. As soon as a school medical officer, after inspection of a school, had reported that certain children required treatment the necessary action for securing it was taken (1) by the children's care committees of the different schools, and (2) by the central office staff of the education officer's department, who made appointments for the children at the hospitals and medical treatment centres and saw to it that the arrangements were carried out in accordance with the conditions laid down in the agreements.

*Need for Unification.*

This division of the work between two different departments of the education service had had an injurious effect, in the opinion of the subcommittee, upon the working of the Council's scheme. It was of the greatest importance that the arrangements for medical treatment should be closely associated with those for medical inspection, and from the experience gained during the past year the subcommittee had come to the conclusion that the whole of the administration should be entrusted to one department. This unification might be effected in one of two ways—

(1) The whole of the work might be entrusted to Sir Shirley Murphy, Dr. Kerr being definitely placed under his control and made responsible to him both on the professional and the administrative side.

(2) The whole of the work might be placed under the control of Mr. Blair, the education officer, Dr. Kerr being placed in his department and made responsible to him on the administrative side, while retaining an independent position so far as expert medical advice was concerned.

In support of the view that the work should be placed under the Council's medical officer of health, the memorandum of the Board of Education, dated Nov. 22nd, 1907, might be quoted. It stated that the medical inspection and treatment of school children should be carried out in intimate conjunction with the public health authorities under the direct supervision of the medical officer of health of the authority which appointed the education committee. The policy suggested by the Board could be carried out readily in county boroughs where the medical officer of health was under the jurisdiction of the same authority as that which was responsible for education, but there would be great difficulty in applying the policy to London, where there were 29 officers of health responsible to 29 different authorities, while education was under the control of one central authority. True, the County Council had been entrusted by Parliament with powers of supervision and control over certain general matters of public health which did not fall within the scope of the borough

in many ways was very great. Formerly, at home, he had practically eaten nothing and cared only to stay in bed. He now ate and drank all that was given him, and was always ready to rise from bed in the afternoon. After six days his blood count was as follows: Red corpuscles, 5,100,000 per c.mm., or 102 per cent.; white corpuscles, 3000 per c.mm. The general improvement was, however, not maintained. He had to return home, and gradually the disease obtained the upper hand.

Pernicious anæmia, of course, shows remarkable remissions, but the rapid improvement in the blood count after the hypodermic treatment seems to hold out some hope for the cases of younger and more vigorous patients, especially if it were begun soon enough. I did not see my patient until the case was at least four months advanced according to history, and quite possibly more.—I am, Sir, yours faithfully,

East Meon, Hants, February, 1911. EDWARD T. JONES.

# EXPERIMENTS IN SEWER VENTILATION AT LEICESTER.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Leicester, February, 1911.

MORE than eight years have elapsed since a detailed description was given of an ideal method of ventilating sewers.[1] At that time the system had not gone beyond the theoretical and laboratory stage. The chief fault then found was that it all seemed too good to be true. Now it is possible to speak differently, for the method has been applied during a sufficient number of years and to a large enough district to be judged from the practical results obtained. The object of the system is to prevent the ventilation of sewers in the streets or by soil-pipes on the tops of the houses. Further, greater care is displayed to prevent the intercepting traps placed between houses and sewers becoming small cesspools and to ensure more efficient ventilation of the small branch drains. A vigorous current of air may pass along the straight sewer in the street and yet have but little or no effect on the small tributary drains that come from behind the houses and down passages. The only way to ensure ventilation throughout is to place the inlets or outlets at the extreme ends of the piping. Thus there is the school of sanitary engineering that would have no intercepting trap between the house and the sewer, and by carrying every soil-pipe to the roof of the houses convert them all into sewer ventilators. The air would then have to travel the whole length of the domestic drains to get out, and there would be no neglected corners or branch drains. The ventilation of private drains and public sewers on the roofs of dwelling houses and within a few feet of bedroom windows is not, however, a very satisfactory expedient. To say that the sewer air will be blown away is not a sufficient assurance. When a neighbouring chimney catches fire the odour, and even the smoke, is blown down to the street level. Sometimes the smoke from one chimney is blown down the chimney of another house, invading, much to the surprise of the inhabitants, a room which has no fire; and where the smoke goes the air from the soil-pipes will follow.

### *Air Needed Per Head in Sewers.*

To meet these and many other objections it has been proposed to reverse the process and not allow any air to escape from the soil-pipes; but, on the contrary, to draw air down these pipes to the domestic drains and into the sewers. Here the air would be conveyed to a spot where it could be treated or safely discharged. For this artificial power is necessary, and that constitutes the first and probably the chief objection to the whole system. There is an instinctive dislike to the employment of machinery, based probably on the too frequent experience that machinery is apt to get out of order. It is therefore a good point in favour of a mechanical system if it can be shown that, in the event of a breakdown in the machinery, no very injurious consequences would ensue. Of greater importance than arguments for or against machinery is the dominating fact that in ventilating it is absolutely impossible to ensure a stable result except by the use of machinery. Just as the weather varies, so does natural ventilation vary, and this precisely in the opposite direction to our requirements, giving violent draughts in cold weather and hardly any movement of the air when it is hot and sultry. In dealing with this problem Mr. I. Shone had the advantage of experience as a mining engineer, where the entire ventilation must be artificial, though the breakdown of machinery might involve a serious loss of life. There was no hesitation, therefore, in proposing to base the ventilation of sewers on the revolutions of a fan so as to provide in all weathers exactly the volume of air required to keep the atmosphere within the sewers and drains so fresh as to be uninjurious. What this amount would be has been explained by others writing on this subject. Dr. Letheby had made experiments on the gases engendered by putrid sewage, and the results were that one cubic foot of fresh air every two minutes would suffice to dilute the air escaping from the 30 gallons, or normal daily flow of sewage per inhabitant. In other words, for every inhabitant 30 cubic feet of fresh air must be drawn every hour into the soil-pipe of the house inhabited. Obviously this cannot be done with any degree of certainty except by mechanical appliances. Having obtained this figure it was further possible to calculate that at 3*d.* per Board of Trade electric unit a "Sirocco" fan could be worked so as to provide the requisite amount of air for 1·41*d.* per annum per head of the population.

### *The Need of Cubic Measurements.*

The next point was to devise means to insure that the regulation amount of air should penetrate every soil-pipe, whether near or far from the fan. This seemed more easy to do in theory than in practice, and experience has proved the accuracy of this criticism. Originally a very elaborate inlet was provided, regulated by a vulcanite screw plug which had a small hole pierced in the centre. The size of the hole, in some places barely big enough to let a lead pencil through, varied according to the suction within the pipe, being smaller the nearer the house stood to the extraction fan. These and many other details were given by me in the first description of the system which appeared in these columns, and it is not necessary to go over the same ground again. But we have to see how far the original plan has been modified in actual application. That such experience has now been acquired is due to the enterprising spirit of the highway and sewerage committee of the Leicester Corporation. They determined to apply the system to an area of two and a half acres consisting of streets 40 feet wide with 80 six-roomed houses of the artisan class, and a population of 356 persons, or an average of 4·45 persons per house. The foul water sewers it was proposed to ventilate were 297 yards long. There is a totally separate system for storm and rain water from the surface of the streets and the roof of the houses. To convey the sewage proper there is a 12 inch pipe sewer 202 yards long and two short branches at right angles. The sewers to which the new system is applied discharge into a brick main of 3 by 2 feet, from which they are disconnected. At the junction the pipe sewer is carefully separated from the main sewer by a deep dip trap. The drains that connect the dwellings with the 297 yards of pipe sewers measure in all about 583 yards and are mostly 6 inches in diameter, while the branches to the closets and sink wastes are 4 inches. The smaller half of these have clay puddle joints instead of Portland cement for the joints. A 4 inch diameter cast iron pipe is added to the soil pipe and carried to the roof. It becomes a ventilator, but there are only 27 such ventilators to the 80 houses, in some cases six houses being connected with the one upright pipe ventilator. The cubic capacity of all these house pipes and drains is 304 cubic feet, that of the public sewer 661 cubic feet, so we have to deal with a total of 965 cubic feet, and it would take 6021 gallons to fill this with water. Now when a part of these drains and sewers were submitted to a water test it became apparent that there was a considerable leakage, amounting to seven gallons per minute. Here, then, was the first obstacle, the first great difference between the theory as demonstrated by laboratory experiments and actual application.

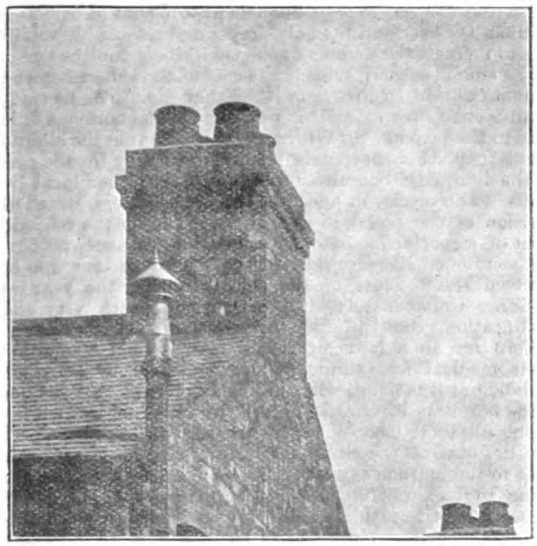
### *Leakage Upsets all the Calculations.*

At the highest point in the district a chamber was constructed under the causeway and here a "Sirocco" fan, 15 inches in diameter, driven by an electric motor capable of producing 700 revolutions per minute, was introduced. On one

[1] See THE LANCET, August 9th, 1902, p. 405.

side the chamber is connected with a flushing manhole and the air is drawn out of the sewer by the fan. On the other side the air thus extracted is forced into a ventilating shaft 40 feet high. When all was completed a five days' test was made. The velocity of the air entering the 27 soil-pipe inlets was measured by anemometers and the result showed that more air was pumped out through the extract ventilating shaft than had entered the sewers by the proper inlets. Therefore the leakage which had enabled some of the water to escape when the water test was applied now allowed some air to penetrate the sewers and drains. Thus the ideal calculations which, as said before, were all too good to be true are now upset. Given absolutely air-tight sewers and drains, with inlets all accurately measured and a fan revolving with mathematical precision, every soil-pipe would have received exactly the number of cubic feet of fresh air needed. But here was an unknown volume of air penetrating from unknown places and upsetting all these precise calculations. The mechanical part alone worked satisfactorily. The fan pumped out of the sewer exactly the right amount of air, only it did not appear that this air came from the farthest as well as the nearest inlets. At these inlets—that is to say, at the top of the 27 soil-pipes which are prolonged to the roofs of the houses—it was found, in some instances, that there was no perceptible current of air. It is true that air must travel at the rate of 30 feet per minute before it has sufficient force to move the anemometer, but the amount entering at a slower rate than this is hardly worth including in any calculation.

FIG. 1.



A cowl, constituting an air-inlet, placed on the top of the soil-pipes. The door-like opening can be seen which is used for introducing the anemometer.

Under the existing circumstances, short of re-laying all the house drains and the sewers in such a manner as to make them absolutely air-tight and keeping them in that condition for ever, a totally new set of calculations had to be made. Nor could any theoretical basis for such a reckoning be found, for no one could tell the extent of the leakages with which it was necessary to deal. Therefore, experiments had to be made with all the air inlets. Obviously much more air must be extracted so as to maintain a current through all the soil-pipes and also carry away what the leakages supplied. The minute and elaborated air inlet was too delicate an instrument for this rougher procedure. After trying many models the present system was adopted. It consists of a cylinder fitting over another cylinder. Both these have vertical apertures or slits, and the outer cylinder can be twisted round. If the apertures are made to fit over each other we have the maximum opening, but by slightly moving the outer cylinder the openings are rendered smaller and smaller till they are closed altogether. This is covered over by an ornamental hood or cowl to keep the rain off (Fig. 1). Underneath there is a commencement of piping which fits on the top of the soil-pipe, and here is the space for a small door large enough to admit a hand holding an anemometer. Thus it is necessary to place a ladder against the wall, to climb up and introduce an anemometer into this aperture. If the record shows that the amount of air descending the soil-pipe is insufficient, then the cylinder above must be turned round so as to enlarge the inlets. This descent of the air will vary from soil-pipe to soil-pipe according to its position and proximity to the extraction fan. Thus there is no rule, but a separate experiment must be made in each instance. This may seem complicated, but the needful procedure shows that the system deals with realities. According to the experiments made and the report of the borough engineer, Mr. E. George Mawbey, M.Inst.C.E., the 27 inlets measured at first only 10,278 square inches, and this might have sufficed had the sewers been absolutely air-tight. The inlets had to be increased to 75,258 square inches, and the six-inch diameter extraction shaft was replaced by a nine-inch pipe. Thus the inlet space was equal to 89 per cent. of the outlet space given by the nine-inch extraction shaft. The working showed that 752 cubic feet of air were discharged per minute by the fan into the extraction shaft; but of this only 325·53 cubic feet, or a little less than half the total volume extracted from the sewers, entered the sewers through the 27 soil-pipe inlets. In these ventilating soil-pipes of four-inch diameter the average velocity of the air was 226·2 feet per minute, representing an admission of 12·02 cubic feet per minute, or 5·23 cubic feet per house per minute, which is more than necessary. Therefore, the fan was utilised to ventilate a neighbouring sewer outside of the area devoted to the experiment. This reduced the volume of air extracted from the sewers and drains of the area to 142 cubic feet per minute, and of these 106·08 cubic feet were admitted through the 27 soil-pipe inlets, giving an average per house of 1·73 cubic feet per minute. This is a magnificent result, for in 24 hours the air within the house soil-pipes and drains is changed 502 times and replaced by air drawn from the outside atmosphere once in three minutes. Within the street sewers the air is changed about 309 times in the 24 hours, or once in four and a half minutes.

*The Chemical Test.*

The result thus achieved, it must be borne in mind, is absolutely independent of all climatic conditions. The wind may blow or not blow from any point of the compass, the temperature may fluctuate from the extremes of heat or cold, but still pure outer air penetrates the highest point of the soil-pipe, travels down to the lowest, then on to the sewers, bearing away all noxious effluvia and preventing any accumulation or stagnation. The sewage, if foul, is constantly swept over with fresh air; there is not time for mischief to accrue. This is confirmed by chemical analyses. Outside, but close to the area, analyses were first made of the air in the street, and it contained 3·55 parts of carbonic acid gas per 10,000 parts. In the sewer the air contained in the best samples 15·95 and in the worst 24·98 parts of carbonic acid gas per 10,000 parts of air. When, however, the nine-inch extraction shaft was applied and the system in the selected area was in working order the air in the principal street of this area was found to contain 3·18 parts of $CO_2$ per 10,000, and within the sewers the average throughout the system was 9·59 parts of $CO_2$ per 10,000 parts. On another occasion the average was only 8·08, and after that it fell to 7·04 parts of $CO_2$ per 10,000 parts. Thus there can be no doubt but that the sewer atmosphere is purified by this system of ventilation. Finally, if the air from the sewer is discharged in the street, though, of course, at as high a level as possible, it will not prove as injurious as the ordinary sewer airs, which, it has been seen, contain a much larger proportion of carbonic acid gas and whatever other impurities the excessive quantity of this gas may indicate or favour.

*The Advantages Secured.*

To fully appreciate these advantages it is necessary to bear in mind that at present in most cases the sewer airs travel up from the sewers to the houses, escape by numerous leakages, and are discharged either through grids into the streets or through various ventilating shafts, many placed against houses and near windows. Thus the current is always from the sewer to the street or the dwelling. But with mechanical power to produce a vacuum in the sewers the current is

councils, but so far as matters of public health were concerned which were most closely related to medical inspection and treatment of school children, it was the medical officers of health of the metropolitan boroughs whose coöperation was most required. No doubt it was mainly for this reason that the circulars of the Board of Education dealing with this matter made no specific reference to the problem of London, while in the Board's letter of Jan. 14th, 1911 (not yet published by the Council) special attention was drawn to the desirability of bringing the Council's school medical service into closer relation with general educational administration. A second reason put forward for placing the whole of the arrangements for medical inspection and treatment under the control of the Council's medical officer of health was that hitherto it had been the practice of the Council to provide that all work, whether administrative or professional, which was involved in the exercise of a particular profession should be placed under the direction of the professional officer concerned.

*School Medical Work closely Associated with Education.*

The subcommittee pointed out, however, that from the beginning school medical work had been closely associated with the general work of education, and proceeded to amplify this aspect of the case. The Acts under which the work was performed by the Council, as stated above, were education Acts, their objects being to secure that the children should be in a fit condition of health to profit by the education given, and also that the conditions of school environment, including such matters as sites, buildings, desks, and curriculum, should be arranged with due regard to the physical development of the children. The central administration had been entrusted, not to the department which dealt with general questions of public health (the Local Government Board), but to the department which dealt with educational administration (the Board of Education). In order to give effect to the Act of 1907 an expert medical staff had been appointed by the Board of Education to exercise general supervision over the school medical work of local authorities, and this medical staff formed part of the administrative machinery of the Board. School medical work in London had grown to its present stage in close association with the general activities of the schools and the general machinery of educational administration. The teachers played an important part in making preliminary observations on the children to be submitted to medical inspection, in giving information to school doctors and nurses, and in influencing parents to pay proper attention to the children's needs. The school medical work was also bound up very closely with the work of the local care committees which worked in conjunction with the school attendance officers, the organisers of the school meals, and others. The central care subcommittee was just as much identified with the arrangements for medical treatment as with other aspects of the physical welfare of children. From the moment when Parliament decided that inspection and treatment were to be regarded as part of the work of education, the administration of school medical work became closely linked with the general administration of education. The prominence at the moment of relief functions (provision of meals and medical treatment) tended to obscure the real nature of the organisation, but the work in all its phases was educational. School medical work was a part of this whole, and in the opinion of the subcommittee could not be removed without serious injury to the remainder.

*The Subcommittee's Conclusions.*

The subcommittee had arrived at the conclusion that the only satisfactory solution was to place the whole of the school medical work in close organic connexion with the general administration of education. The efficient carrying out of medical inspection and the arrangements for medical treatment involved a large amount of detailed work which was administrative rather than professional, such as making appointments for doctors, nurses, and children at school and at hospitals, the general organisation, the collection of charges to parents, and the filing of records. Such duties did not require expert medical knowledge, and it would be a wasteful policy to allow the time of medical men, appointed for their expert qualifications, to be occupied in superintending all the many administrative details necessary to the successful organisation of school medical work in an area as large as London. Moreover, if it were decided to detach the school medical work from the ordinary educational administration it would probably be found necessary to appoint additional organisers and assistants to carry out the medical work under the medical officer of health, leaving the present staff to carry out such duties as related to the welfare of children—the provision of meals, play centres, and after-care. Such division of work would be both unsatisfactory and uneconomical. The subcommittee therefore recommended:—

That the organisation and administration of medical inspection and treatment, including the work hitherto performed under the direction of the medical officer (education), be definitely incorporated in the Council's educational system, and placed in future under the control of the education officer, who shall be responsible to the Council, provided that the medical officer (education) shall retain his existing titles, shall have the right of access to the subcommittees of the Education Committee, and preserve his freedom and initiative as to expert advice, opinion, and investigation, and be entitled to submit reports over his own signature.

An amendment to substitute the name of the medical officer of the Council for that of the education officer led to an interesting debate, and was lost. A second amendment aimed at making the medical officer for education purposes a chief officer responsible direct to the Council. This was proposed by Mr. E. Gray, the chairman of the General Purposes Committee of the Council, "to test the feeling of the committee," and resulted in equality of voting, the chairman of the Education Committee, Mr. E. A. H. Jay, not exercising his casting vote. In the event the recommendation of the subcommittee was carried, and now awaits the confirmation of the Council.

*Progress made with Medical Inspection.*

A return presented to the committee with regard to medical inspection showed that during the week ended Feb. 4th 99 medical men had visited 145 schools and examined 11,400 children, of whom 3657 were found to require treatment for various ailments. No account was taken of defective dentition. Of the 3657 children 2293 could be provided with treatment under the Council's scheme. The work of medical inspection was shown to be somewhat in advance, as regards completeness, of the requirements of the Board of Education. To comply with those requirements 74,800 should have been examined on Feb. 4th; 78,998 had actually been examined.

*A Further Dental Treatment Experiment.*

As another step in the direction of providing dental treatment the Education Committee on Feb. 22nd decided to assist the authorities of the St. George's Dispensary, Surrey-row, Blackfriars, to resume the dental treatment service discontinued recently owing to lack of funds. Quoting the statement of the medical officer to the Board of Education that the critical time of attack on the teeth is the six-year molar period, from 6 to 8 years of age, the subcommittee which brought forward the recommendation advised that experience should be obtained at the dispensary of dealing with children of these ages as well as of other ages. In the experiments at Poplar and Deptford the age-group (8–9) was selected because children of that age were examined in the course of ordinary medical inspection. The selection of another age-period would necessitate the employment of an inspecting dentist on one half-day a week. The committee decided to set aside £400 in respect of the treatment of 1300 cases between May 1st and Dec. 31st next.

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EDINBURGH UNIVERSITY CLUB.—The annual banquet of the Edinburgh University Club in London was held on Thursday, Feb. 23rd, at the Criterion Restaurant, Sir David Ferrier being in the chair. There were only two speeches, "The Prosperity of the Club" being proposed by the chairman, and "The Chairman" being proposed by Sir Lauder Brunton. Sir Lauder Brunton's dissertation on Sir David Ferrier's distinguished career was listened to with close attention by a numerous assemblage of guests and members of the club, for the value of his pioneer work in neurology was very clearly brought out. Sir David Ferrier, in his reply, claimed the widest recognition for the labours of Dr. Hughlings Jackson, a view which the assembled company endorsed heartily.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

*Surgery.*—W. J. Gibson (Sections I. and II.), London Hospital.
*Medicine.*—M. J. A. des Ligneris (Sections I. and II.), Berne; C. B Hawthorne (Sections I. and II.), Cambridge and Birmingham; J. B. Holmes (Section I.), Manchester; J. C. Johnson (Sections I. and II.), Middlesex Hospital; and H. T. Roberts (Section II.), St. Mary's Hospital.
*Forensic Medicine.*—M. J. A. des Ligneris, Berne; D. M. Hunt, London Hospital; and H. Rowntree, Middlesex.
*Midwifery.*—H. H. Budd, St. Mary's Hospital; C. de C. W. Langdon, Manchester; J. G. Lewis, Durham; and T. T. O'Callaghan, Guy's Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—W. J. Gibson, J. C. Johnson, and M. J. A. des Ligneris.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Ludwig Jacobsohn has been granted the title of Professor. — *Budapest:* Dr. K. Pellyesniczky has been appointed to the chair of Anatomy.—*Göttingen:* Dr. Ricke has been appointed Temporary Instructor in Odontology, a private dental surgery being utilised as before.—*Greifswald:* Dr. Willy Vorkastner has been recognised as *privat-docent* of Psychiatry.—*Kiel:* Dr. A. Bauereisen has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Marburg:* Dr. M. B. Schmidt of Zürich has been appointed to the chair of Pathology, and Dr. Fischer of Greifswald to the Lectureship in Dentistry.—*Naples:* Dr. Carlo Laccetti has been recognised as *privat-docent* of Surgical Diagnosis.—*Parma:* Dr. Ernesto Bertarelli has been appointed Extraordinary Professor of Hygiene.—*Sassari:* Dr. Mario Vincenzo Dettori has been recognised as *privat-docent* of Operative Medicine.—*Siena:* Dr. Arturo Guzzoni of Messina has been appointed to the chair of Clinical Midwifery.

METROPOLITAN POLICE SURGEONS' ASSOCIATION.—The annual meeting of this association, which has now reached its twenty-third year, was held at Frascati's Restaurant on Feb. 23rd. Dr. A. Dumville Roe, who has been a vice-president, was elected president for the coming year and Mr. Meredith Townsend and Dr. R. Esler vice-presidents. Dr. C. Owen Fowler and Dr. G. Nicol Henry were re-elected honorary secretaries and Dr. C. Pinel Gallie honorary treasurer, and an unanimous vote of thanks was passed thanking these gentlemen for the way in which they had fulfilled their respective arduous duties. The six vacancies on the council were filled by the election of Dr. G. A. Hamerton, Mr. P. J. Clark, Dr. G. B. Scott, Dr. Frank Shersby Smith, Mr. W. Evans, and Dr. T. Marshall. In moving the adoption of the report of the council for the past year reference was made to the loss the council had sustained owing to the retirement of Mr. W. A. Grogono, a vice-president, and Dr. J. L. Jaquet, a member of council, both having resigned through ill-health. Among other subjects which had been considered was the advisability of subsidising beds at suitable sanatoriums for the prompt treatment of early cases of tuberculous disease occurring in the police, and a deputation had represented this to the chief surgeon and the authorities at Scotland Yard. The meeting was followed by the annual dinner, which was under the chairmanship of the retiring president, Mr. Henry Bott, who was supported by Mr. C. K. Francis, one of the metropolitan police magistrates, Mr. J. Troutbeck and Mr. W. Schröder, the coroners, Major Wodehouse, C.B., of Scotland Yard, and Mr. Clinton T. Dent, the chief surgeon. After the usual loyal toasts had been honoured Mr. Francis proposed "The Metropolitan Police Surgeons' Association," and included with it that of all the members, many of whom had rendered him in his official capacity as magistrate great aid. He commented on the extraordinarily inadequate remuneration they received for their court work, which they were all so well qualified to carry out. The President-elect, Dr. Dumville Roe, in replying, laid special stress on the prosperity of the association, and paid a tribute to the great help and kind consideration that were always accorded the members by the authorities at Scotland Yard. Dr. Martindale Ward gave the toast of "The Commissioners, the Receiver, and the Chief Constables," which was replied to by Major Wodehouse and Mr. G. H. Tripp, the latter facetiously remarking that though as Receiver for the metropolitan police he was officially the enemy of divisional surgeons and might be looked upon as the skeleton of the feast, still he was at heart their friend, and he remarked how energetically the chief surgeon looked after the interests of the divisional surgeons, especially in that to them important matter, special fees. Dr. Henry proposed "The Chief Surgeon," and mentioned what a quiet revolution he had achieved, the abolition of the old station sponge which is now represented by sterilised wool, the fitting of aseptic dressing and instrument cabinets, the reduction of the number of statistical returns that were once needed and the simplification of the ones now used, all improvements effected at the expense of the last speaker, the Receiver for the metropolitan police district. Mr. Dent made a most interesting reply. Dr. Fowler expressed the satisfaction all felt at the presence of the guests, which was responded to by Mr. Troutbeck. The dinner concluded with the health of the President and Officers of the Association, to which the chairman suitably responded. Between the toasts an enjoyable concert programme was provided under the direction of Miss Edith Kirkwood, assisted by Miss Marian Jay and Mr. Stewart Gardner.

THE NEW KING'S COLLEGE HOSPITAL.—An appeal is being made by the removal committee of King's College Hospital for a further sum of £150,000 to carry on to the opening stage the work of construction of the new hospital and medical school at Denmark-hill. Sums amounting to £190,000 have been raised (exclusive of the value of the site of ten acres, amounting to £66,000, generously contributed by the Hon. W. F. D. Smith, chairman of the hospital and of the removal committee), and since the laying of the foundation-stone by King Edward building has rapidly proceeded, so that at the present time the central administration block, together with the out-patient and casualty department, bathing establishment, and the X ray and massage department above them, have been roofed in and nearly completed. It is hoped to complete wards enough to open the institution next year with 320 beds, a little more than half of the full complement of 600, and 120 more than the accommodation of the present hospital. The wards will be nine in number, on the pavilion plan, extending on rising ground to the south from the out-patient departments, administration building, and departmental buildings, which together form the frontage looking northward on Bessemer-road. The grounds extend right up to the railway cutting which divides the hospital from the beautifully wooded Ruskin Park, giving the patients all the advantages of a veritable country site in the midst of a rapidly encroaching forest of brick and mortar. The eastern block is approached from Bessemer-road by a court-yard, having on the left the casualty department with eight single-bedded, glass-walled, cross-ventilated observation wards above for the temporary isolation of suspicious out-patient cases. The entrance for in-patients is at the end of the court, and on the right is the entrance to the out-patient department, leading into a large hall capable of accommodating 500 people. This is separated by a corridor from the various consulting-rooms, so that on leaving the latter no patient will have to return to the waiting hall. In this block also is a very complete bathing establishment, with massage, X ray, and electrical departments above. The centre block is formed by the administration department, while the western wing will consist of the medical school and other departmental buildings. The ventilation and warming systems are especially worthy of notice. Apertures in the ceilings of all the rooms connect with a series of pipes on the roofs that converge to a number of large exhaust fans. Ventilators in the walls, a foot or two above the floor, are screened by the moveable radiators turning like a door on its hinges for cleansing purposes. By this means the incoming cold air will be heated by passing through the apertures in the radiators on its way. The heating will be by low-pressure steam, and the magnitude of the plant will be suggested by noting that it involves 18 miles of steam piping and seven miles of hot-water piping, while over 1000 radiators are used. There will be an ice-plant manufacturing ten tons daily. A glance at the situation of Bessemer-road, Denmark Hill, on the map of London, will indicate the large area to the poor of which this hospital will be within easy reach—Wandsworth, Balham, Brixton, Stockwell, Camberwell, Peckham, New Cross, and Deptford,

and the hope is widely felt that its out-patient department will be as far as possible consultative. A special fund is also being raised for the erection and endowment of the medical school.

THE staff of the Post-Graduate College, West London Hospital, have issued invitations for a conversazione to be held at the hospital on Wednesday, March 15th, at 8.30 P.M.

UNIVERSITY OF SHEFFIELD.—The Council at its last meeting made the following appointments:—Mr. Sinclair White, M.D., M.Ch. R.U.I., F.R.C.S. Eng., to the Professorship of Surgery in the University, in succession to Mr. R. J. Pye-Smith, resigned; Mr. George Stanfield, B.Eng. Sheffield, to the post of Demonstrator in Engineering; and Mr. Ll. Lloyd, B.Sc. Lond., to the post of Assistant Curator of the Zoological Museum.

THE EDWARD MEDAL.—At an investiture which was held by the King at St. James's Palace on Feb. 23rd His Majesty presented to Mr. E. A. Dando, M.R.C.S. Eng., L.R.C.P. Lond., the Edward Medal of the Second Class for "conspicuous gallantry on the occasion of an underground fire at the Russell Colliery, Staffs. Mr. Dando, who was summoned to the mine when the fire broke out, went down the pit and bravely assisted in the rescue work for several hours. He was at last overcome by the poisonous gases, and was brought to the surface unconscious, and did not recover from the effects of his courageous action for some time."

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Feb. 23rd, Sir Francis H. Champneys being in the chair. The following letter from the Clerk of the Privy Council was received:—"26th January, 1911. To the Secretary, Central Midwives Board. Sir,—Referring to your letter of the 23rd instant, embodying certain resolutions passed at a meeting of the Central Midwives Board on the 19th instant, in regard to Clause 7 of the Midwives (No. 2) Bill, 1910, I am directed by the Lord President of the Council to state, for the information of the Board, that the proposals contained in the clause in question will not reappear in any future Bill which may be introduced on the subject, and that no deputation is therefore necessary.—I am, Sir, your obedient servant, (signed) ALMERIC FITZROY." The clause in question provides that every certified midwife shall in each year notify the Board of her address and pay a fee of 1*s.*, failing which her name shall be removed from the roll and her certificate cancelled. Mr. E. Parker Young again drew attention to Clause 11, showing that it was objectionable because it meant interference with the practice of medical men. A letter was received from the Clerk of the Council in reply to the suggestion of the Board that Section 1 (2) of the Midwives Act, 1902, should be amended by the deletion of the words "habitually and for gain," pointing out that the proposed amendment might give rise to more laxity of administration than it would prevent, as "emergency" would conceivably be more difficult to disprove than it would be to establish a practice which is habitual and for gain. A letter was received from the medical officer of health of Manchester inquiring as to the truth of a statement appearing in a report in *Nursing Notes* for January, 1911, of the Board's decision to take no action in the cases of two certified midwives against whom the local supervising authority had found *primâ facie* cases of negligence or misconduct. The Board decided to reply to both questions in the affirmative, adding that the Board acted on the finding by the local supervising authority of a *primâ facie* case which it assumes would be adequately supported by evidence capable of proof at the hearing of the case. Letters were received from the medical officer of health of Ipswich as to the Board's decision to take no further action in the case of a certified midwife against whom the local supervising authority had found a *primâ facie* case of negligence. The Board decided that the medical officer of health of Ipswich be informed that, while the Board is entirely in sympathy with any endeavour to censure or to remove from the Roll the name of a midwife who has been proved to be guilty of serious breaches of the rules, and would regret as much as the local supervising authority the failure of any such case for want of complete legal proof, the responsibility for the decision in any particular case must remain with the Board alone. The Board decided that the opinion of the Privy Council should be sought as to whether a midwife guilty of a breach of the rules when acting as a maternity nurse is amenable to the jurisdiction of the Board.

ROYAL DENTAL HOSPITAL, LEICESTER-SQUARE, LONDON, W.—The annual general meeting of the governors of this hospital will be held on March 9th, at 5.30 P.M., when Mr. E. Lloyd-Williams, vice-president, will preside.

ROYAL SOCIETY OF ARTS.—A lecture on "Plague and its Dissemination" will be given at 8 P.M. on March 8th by Mr. James Cantlie. Sir Shirley Murphy will preside.

LITERARY INTELLIGENCE.—A fifth edition of Mr. Bland-Sutton's "Tumours: Innocent and Malignant," incorporating much new matter, is announced by Messrs. Cassell and Co. for publication on March 4th.—Messrs. J. and A. Churchill have ready for publication a work entitled "The Principles of Aeroplane Construction," with calculations, formulæ, and 51 diagrams, by Rankin Kennedy, C.E., author of numerous works on engineering.

BRITISH MEDICAL BENEVOLENT FUND.—The annual general meeting of this Fund will be held on Monday, March 6th, at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., at 5 o'clock in the afternoon. Sir John Tweedy, president, will preside, and the annual report will be presented by the treasurer, Dr. Samuel West. The meeting will be later addressed by Sir Thomas Barlow, Mr. Butlin, and Professor Howard Marsh. All those interested in the Fund and Guild, ladies and gentlemen, are invited to be present. Tea will be provided before the meeting.

THE MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN.—On Thursday, March 16th, at 8 P.M., in Clifford's Inn Hall, Fleet-street, a conference on these subjects has been arranged by the Fabian Education Group. Sir Victor Horsley will take the chair, and Mr. Reginald Bray, L.C.C. ("What has been done by the County Council"), Miss Margaret McMillan ("What might be done"), and Miss Marion Phillips, D.Sc., are announced to speak. Questions and debate will follow. The conference is open to all interested, who should communicate with Miss Agnes A. Crosthwaite, The Retreat, Westerham, Kent.

THE LOCAL GOVERNMENT BOARD AND THE MEDICAL TREATMENT OF OLD AGE PENSIONERS.—At a recent meeting of the Clutton (Somerset) board of guardians it was reported that the guardians had inquired of the Local Government Board whether it was the duty of the district medical officer to attend old age pensioners, and whether the guardians could legally grant medical relief for a period of three or six months to old age pensioners not otherwise paupers. The Local Government Board, in reply, stated it was the duty of the medical officer to attend old age pensioners, and that the guardians could make orders for periods of time, but it was necessary for them periodically to revise such orders.

THE ROYAL SANITARY INSTITUTE.—A meeting of this institute will be held at 90, Buckingham Palace-road, London, S.W., on March 14th, when Dr. Leonard Hill, F.R.S., will open a discussion on "Rescue Work in Mines," with a demonstration of apparatus in use. The chair will be taken at 8 P.M. by Mr. R. A. S. Redmayne, M.Sc., Chief Inspector Coal and Metalliferous Mines, Home Office.—A provincial sessional meeting will be held on March 17th in the Civil Court, Guildhall, Bristol, when a discussion will take place on Modern Methods of Purification of Public Water-supplies, to be opened by Mr. J. A. Macpherson, B.Sc., M.I.C.E. Among others the following gentlemen will take part in the discussion: Dr. D. S. Davies, medical officer of health, Bristol; Mr. Herbert Jones, medical officer of health, Herefordshire combined districts; Dr. J. M. Martin, county medical officer of health, Gloucestershire county council; Dr. W. G. Savage, county medical officer of health, Somerset county council; and Mr. J. Tubb-Thomas, county medical officer of health, Wilts county council. The chair will be taken at 10.45 A.M. by Dr. Louis C. Parkes, chairman of the council of the institute. Tickets for admission of visitors may be had on application to Mr. T. J. Moss-Flower, Carlton Chambers, Baldwin-street, Bristol, who is kindly acting as

the local honorary secretary of the meeting, and of Mr. E. White Wallis, secretary, 90, Buckingham Palace-road, London, S.W.

THE DEVON COUNTY MEMORIAL TO THE LATE KING.—The Lord Lieutenant of Devon recently appealed for the sum of £5000 to be subscribed as a county memorial to the late King. Up to the present £4595 have been received, and the remainder will doubtless shortly be raised. The money will be devoted to the provision of trained nursing for the sick poor of Devon.

DONATIONS AND BEQUESTS.—The late Mr. Joseph Shorrock, of Harewood, Disley, Cheshire, bequeathed £1000 to the National Society for the Prevention of Cruelty to Children.—The late Mr. George Newton, M.R.C.S. Eng., of Tower House, Shipley, and formerly of Dukinfield Lodge, Cheshire, has by will left among other bequests more than £36,000 to be divided between the Medical Missions Auxiliary of the Church Missionary Society and Dr. Barnardo's Homes.—The Dreadnought Seamen's Hospital has received £1000 for the endowment of a bed in memory of the late Mr. George Busk, F.R.S., past president of the Royal College of Surgeons of England, from his daughters, Miss E. Busk and Miss F. Busk.—Under the will of the late Mr. Jonathan Knowles, of Underwood Rawdon, Leeds, the Bradford Children's Hospital will receive £600 to be applied towards the permanent endowment of the "Mary Knowles" Ward.—The King of the Belgians has sent to the Liverpool School of Tropical Medicine a cheque for £500, in token of His Majesty's appreciation of the valuable work that the school is carrying on for the benefit of tropical countries.

CARNEGIE ENTOMOLOGICAL RESEARCH SCHOLARS.—With a view to furthering the work of the African Entomological Research Committee of the Colonial Office, Mr. Andrew Carnegie has placed at its disposal a sum of £1000 a year for three years to defray the cost of sending a few suitably qualified young men to the United States to study the practical applications of entomology which have received so much attention in that country. Three of these Carnegie scholars, as they are to be called, have been selected, and two of them are already at work in the United States. The fact that Dr. L. O. Howard, chief of the Bureau of Entomology at Washington, is personally interesting himself in the matter is a sufficient guarantee that all possible facilities will be given to the scholars, and it may be confidently expected that the scheme will be of great value to British administration in Africa and elsewhere by providing a body of well-trained entomologists available for employment in the services of the different colonial governments. Further particulars may be obtained from the secretary of the committee—Mr. Guy Marshall, British Museum (Natural History), South Kensington, London.

WEST SUSSEX SANITARY AUTHORITIES.—The appointment of Dr. A. G. R. Cameron, medical officer of health for the combined sanitary districts of West Sussex, as medical officer of health under the county council being considered a fitting opportunity to bring about a change in the combined districts, an important meeting of the representatives from the districts was held at Horsham on Feb. 23rd. Dr. R. D. Sweeting, an inspector of the Local Government Board, attended and gave expression to the official view on the subject. The existing combination, he said, was too unwieldy to be workable, and the Local Government Board suggested the division of the county into two parts according to its geographical suitability—the northern and southern districts with the Southdowns as the dividing line—a medical officer to be appointed to each to work in conjunction with the education authorities for school inspection, each officer to receive a minimum salary of £500 per annum. This arrangement, it was explained, could be effected with a reduction on the present expenditure. The meeting unanimously decided to adopt the suggestions of the Local Government Board as voiced by Dr. Sweeting, and the authorities concerned are to be asked to give the necessary sanction. In the course of the proceedings regret was expressed by the representatives of the combined sanitary districts upon the loss they were sustaining by the transference of Dr. Cameron to the county council; while, on the other hand, Dr. Cameron was heartily congratulated upon his success in securing the new appointment.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*Army Hospitals.*

Mr. HALDANE, the Secretary of State for War, in his Memorandum relating to the Army Estimates for 1911-12, makes a passing reference to army hospitals. He states that the work now being done in relation to hospitals is based on a comprehensive scheme for providing large hospitals on modern lines at certain central stations, the smaller stations being provided with reception stations, and motor ambulances being used as occasion requires for the transfer of patients to the central hospitals. Under this scheme the hospitals at Arbour Hill (Dublin), Chatham, York, and Tidworth are in course of transformation into central hospitals, the expenditure at the last-named station falling on the Military Works Loan. An important new service to be commenced next year is the provision of a new central hospital for Malta, where the existing hospitals are ill-placed and out of date.

*Illegitimacy and Maternity Bill.*

A Bill has been introduced in the House of Commons by Mr. KING "to consolidate and amend the Bastardy Laws; to enable maternity orders to be made with regard to certain women and girls; to make further provision with respect to certain maternity cases dealt with under the Acts relating to the relief of the poor, and otherwise to amend the law relating to illegitimacy and for other purposes connected therewith." The Bill, which has been read a first time, is supported by Sir ROBERT PRICE, Mr. ALDEN, Mr. HENRY MCLAREN, Mr. SNOWDEN, Mr. FLETCHER, Mr. GEORGE ROBERTS, and Mr. HERBERT CRAIG.

*Nurses' Registration Bill.*

Mr. MUNRO-FERGUSON has introduced the Nurses' Registration Bill in the House of Commons. It is described as "a Bill to regulate the qualifications of trained nurses and to provide for their registration." In again bringing forward this measure the right honourable gentleman has received representative support in all quarters of the House. The Bill is "backed" by Sir JAMES GIBSON, Sir LUKE WHITE, Dr. RAINY, Dr. ADDISON, Mr. J. A. BRYCE, Viscount MORPETH, Mr. SCOTT DICKSON, Mr. REMNANT, Mr. G. YOUNGER, Mr. RAMSAY MACDONALD, and Mr. FIELD.

*Medical Graduates of the University of Wales.*

A Bill is being brought forward by Sir D. BRYNMOR JONES "to define and enlarge the rights of graduates in medicine in the University Wales."

*Rescue and Aid in Mines.*

The Departmental Committee on the organisation of rescue and aid in connexion with accidents in mines has completed a report. It will probably be published at an early date.

## HOUSE OF COMMONS.

WEDNESDAY, FEB. 22ND.

*Dresden Hygiene Exhibition.*

Mr. BYLES asked the President of the Board of Trade to state upon what grounds the promoters of the British exhibit at the forthcoming International Exhibition of Hygiene at Dresden were refused by his Department the grant which they asked for, although similar assistance had been given to the exhibition in Turin.—Mr. BUXTON replied: At the time when this country was invited to take part in the Dresden Hygiene Exhibition, the Board of Trade had already entered into engagements to organise official British sections at international exhibitions at Brussels, Buenos Aires, and Vienna in 1910, and at Rome and Turin in 1911. In these circumstances, and in view of the exacting demands made upon British manufacturers by too frequent participation in international exhibitions, the Board of Trade felt unable to undertake, or give official support to, the organisation of an exhibit of commercial products at the Dresden Exhibition of Hygiene. I have, however, expressed to the organisers of the exhibition in London the cordial interest which His Majesty's Government takes in the scientific side of this undertaking.

THURSDAY, FEB. 23RD.

*The Nutritive Value of Bread.*

Mr. GOLDMAN asked the President of the Local Government Board whether the inquiries now being made by the officers of the Board in connexion with bread included the question of the relative nutritive values of bread containing different proportions of the germ and the inner cuticle of the wheat berry, which were eliminated in the ordinary process of roller milling, and of ordinary bread containing none of these constituents.—Mr. BURNS answered: The subject referred to in the question is being considered in connexion with the inquiry into matters relating to flour and bread which is now proceeding. A preliminary report on the subject will, I hope, shortly be issued.

Mr. GOLDMAN asked the First Lord of the Admiralty whether, in view of the higher nutritive value of bread containing the germ and inner cuticle of the wheat berry over ordinary white bread, he would consider the desirability of providing that, in Admiralty contracts, no bread and flour should be supplied in which these things had been eliminated.—Mr. MCKENNA said in reply: It was the practice until recent years to supply the navy with "stone-ground" flour produced in Government mills at the victualling yards, but there was considerable prejudice amongst the men against the dark-coloured bread and puddings which this flour produced, and very little was consumed. It was consequently decided to dismantle the Government mills and to

purchase from millers the "roller-ground" flour which is used in the private trade. The bread, &c., made from this flour is very popular in the navy. Before eliciting the present opinion of the fleet on the subject it is proposed to wait until the Local Government Board experts, who are at present investigating the comparative nutritive qualities of the various descriptions of flour, have made their report.

Mr. KELLAWAY: Is the right honourable gentleman aware that, in the opinion of some of the leading millers in the country, the so-called standard bread consists of ordinary bread made with ordinary flour to which a little pig meal has been added?

Mr. MCKENNA: I was not aware of that. I can only repeat that the bluejackets who had this bread do not seem to like it.

Mr. C. DUNCAN: Before any change is made will the opinion of the men be obtained?

Mr. MCKENNA: Yes, sir. The sailors have strong opinions of their own as to whether they like food or they do not.

*Borax in the Preservation of Meat.*

Mr. HUNT asked the President of the Local Government Board whether, in view of the fact that the use of borax in the preservation of meat was a criminal offence in America and that borax was allowed to be used in specially marked boxes for exportation to this country from America, he had taken any steps to preserve the health of our people from the bad effects of American meat preserved by borax.—Mr. BURNS replied: I am advised that as far as the public health is concerned these matters are sufficiently dealt with by the regulations which have been made under the Public Health (Regulations as to Food) Act, 1907. I do not consider that further steps are at present called for.

*American Imported Meat.*

Mr. HUNT asked the President of the Local Government Board whether, in view of the fact that the American Government marked as fit and wholesome for human food the remainder of the carcasses of animals from which parts affected by tuberculosis, malignant tumours, and other diseases had been cut out, he had taken any steps to prevent such meat, either tinned, chilled, or frozen, from being sold for food in this country without due notice to purchasers as to the origin of this meat.—Mr. BURNS answered: Under the Public Health (Unsound Food) Regulations, 1908, the medical officer of health is empowered to seize any article of food landed within the district which is unsound, unwholesome, or unfit for human consumption. I do not at present think it necessary to make further provisions on the subject. I may observe that the rules laid down by the United States authorities governing the inspection of carcasses of cattle intended for export, either inter-state or foreign, are not less stringent than those observed in this country. In the case of the pig the United States standard is less stringent than that obtaining in this country, and in accordance with the provisions of the Foreign Meat Regulations, American pork, fresh chilled or frozen, is only admissible if it comes in the form of a whole carcass so as to permit of examination for disease.

Mr. HUNT: Is the right honourable gentleman aware that in this country carcasses of any animals suspected of tuberculosis or other malignant disease are altogether destroyed and under the American regulations it is not so? Is he aware that according to the American regulations the diseased parts only have to be cut off and the rest of the carcass is stamped by the American Government as sound and fit for human food?—Mr. BURNS: I have nothing to do with the American regulations, but this I do know, that there is no country in the world where the regulations as to importation of unsound, unfit, and unwholesome food are as stringently administered as in this country.

*Medical Report on Employment in Telephone Exchanges.*

Mr. WILLIAM THORNE asked the Postmaster-General whether he had now considered the report of the medical officers upon the conditions of employment in telephone exchanges, and when it was proposed to publish the same.—Mr. H. SAMUEL replied: The report has been under close consideration, and the details of its various proposals have been or are being worked out by the department. The question of publication is not yet decided.

*The Public Health Department of Egypt.*

Mr. RAMSAY MACDONALD asked the Secretary of State for Foreign Affairs whether, with reference to the resignation of Dr. E. H. Ross and Dr. H. C. Ross from the Public Health Department of Egypt, Sir Horace Pinching, the late Director-General, was consulted upon the question of what offers he made to the Drs. Ross which induced them to surrender positions in the navy in order to join the Egyptian service; whether Sir Horace Pinching had, or had not, admitted that he offered them permanent appointments in the Egyptian service; and whether the Government proposed to accept responsibility for the actions of its responsible officers and accredited agents in Egypt.—Sir EDWARD GREY replied: Dr. E. H. Ross held an appointment on the permanent staff of the Egyptian Public Health Department until his resignation, which, it is understood, took effect from the beginning of this month. From a letter addressed by Sir Horace Pinching to Dr. H. C. Ross (dated May 25th, 1906), a copy of which has been communicated to me, it is evident that this gentleman's appointment was temporary. I would refer the honourable Member to the reply I returned to his question of May 25th, 1909. The reply to the last part of this question is in the affirmative, but I must point out that officials of the Egyptian Health Department are in the service of the Egyptian and not of His Majesty's Government.

*The Water-supply of Cairo.*

Mr. RAMSAY MACDONALD asked the Secretary of State for Foreign Affairs whether his attention had been drawn to the proposal of Dr. Graham, the Director-General of the Public Health Department, Cairo, to take the water-supply for the town from a point in the Nile below the town; whether the Foreign Office had any power to prevent the carrying out of this scheme; and whether it was possible for the Foreign Office to consult the previous directors of the Public Health Department, like Sir Horace Pinching, on Dr. Graham's proposal.—Sir EDWARD GREY answered: I would refer the honourable Member to pages 34 and 35 of the report from His Majesty's Agent and Consul-General at Cairo for the year 1909, where the subject is fully dealt with. His Majesty's Government do not propose to address the Egyptian Government with regard to this question, which, as the honourable Member will see, has been so thoroughly investigated by the most competent experts in Egypt.

MONDAY, FEB. 27TH.

*Vaccination of Children.*

Mr. CRAWSHAY-WILLIAMS asked the President of the Local Government Board whether any cases of small-pox had occurred in England amongst children since the passing of the Vaccination Act, 1907, and, if so, whether any of those patients had been exempted from vaccination under the conscience clause of that Act.—Mr. BURNS replied: Cases of small-pox have occurred amongst children since the passing of the Vaccination Act. Their number cannot be given, but in the two years 1908 and 1909 the number of deaths from small-pox of children under 15 recorded by the Registrar-General was six. Four of these cases are stated to have been unvaccinated; in the other two cases it is doubtful whether they had been vaccinated or not. I have no information as regards these six deaths whether certificates of exemption from vaccination had been obtained.

*Arm-to-Arm Vaccination in Scotland.*

Mr. WEIR asked the Lord Advocate whether, in view of the fact that arm-to-arm vaccination had long since been abolished in England with satisfactory results, the Secretary for Scotland would take such steps as might be necessary to secure its abolition in Scotland.—Mr. URE replied: The practice of arm-to-arm vaccination is almost, if not quite, obsolete in Scotland, but it could not be directly abolished without further legislation. The Local Government Board invariably recommends the use of glycerinated calf lymph and supplies it free of charge to parish vaccinators. I may add that during the last two years no applications for humanised lymph were received by the department.

*The Anti-Malaria Campaign at Cairo.*

Mr. RAMSAY MACDONALD asked the Under-Secretary of State for Foreign Affairs whether an anti-malaria campaign, carried on in Cairo in 1907, had been interrupted by a disagreement between the medical and administrative authorities, with the result that mosquito destruction had been stopped and that malaria had reappeared in districts where the 1907 campaign had almost stamped it out; whether he had any knowledge that recently repeated requests had been made by the inhabitants of Cairo to the sanitary department to re-initiate the mosquito campaign; and whether the Foreign Office proposes to bring more pressure to bear upon those responsible for the public health of Cairo, so that obvious precautions might be taken against malaria.—Mr. MCKINNON WOOD answered: I have no more recent information on this subject than that given in the 1909 report from H.M.'s Agent and Consul-General at Cairo, but I will ask for a report on the points raised in this question.

*The Weir Hospital Charity.*

Mr. PIKE PEASE (on behalf of Sir HENRY KIMBER) asked the honourable Member for the Stroud Division, as representing the Charity Commissioners, whether, in view of the fact that the order of the Charity Commissioners establishing a scheme for the administration of the Weir Hospital Charity was discharged by the order of the Court of Appeal so long ago as June 7th, 1910, and the matter was remitted to the Commissioners to administer the charity in accordance with the directions of the testator, there was any reason why a scheme for the proper administration of the charity had not yet been published; and what steps had been, or were likely in the near future to be, taken by the Commissioners to give the parish of Streatham the benefits of the charity bequeathed to them.—Mr. C. P. ALLEN replied: The Charity Commissioners have been, and are still, in communication with the trustees of Mr. Weir's will as to the provisions of a new scheme. The honourable Member may be assured that the new scheme will be framed in accordance with the views expressed by the Court of Appeal for the establishment and maintenance at the testator's residence of a cottage hospital which will be, as directed by him, for the benefit of the inhabitants of Streatham and the neighbourhood.

TUESDAY, FEB. 28TH.

*Small-pox in London.*

Mr. COOPER asked the President of the Local Government Board how many cases of small-pox had been reported in the County of London since Jan. 1st, 1911, and how many of these cases had been vaccinated.—Mr. BURNS replied: From Jan. 1st to the evening of yesterday 41 cases were notified and removed to the Metropolitan Asylums Board's Hospitals. Of the 36 cases in the hospitals of the Asylums Board on Sunday evening last 29 were vaccinated and 7 were unvaccinated. In 24 of the cases vaccination was performed more than 15 years ago and in two others at least 10 years ago. The three other vaccinated cases were those of children, and the attack is said to be mild.

Mr. HARRY LAWSON asked whether the attention of the right honourable gentleman had been called to the outbreak of small-pox in the East-End of London; and whether he was satisfied that all proper steps were being taken to deal with it by the Metropolitan Asylums Board and the other local authorities.—Mr. BURNS answered: My attention has, of course, been drawn to this outbreak, and my officers have been inquiring into it. The reports I have received show that all the authorities concerned are, through their officers, taking active measures to deal with the outbreak. Should the disease assume wider dimensions, no doubt these measures may require to be supplemented.

*Small-pox Hospitals in Scotland.*

Mr. MUNRO-FERGUSON asked the Lord Advocate whether it was the view of his Department that vaccination no longer deserved encouragement and that the best precaution against small-pox was an ample provision by local authorities of small-pox hospitals; and whether the Government intended to make any contribution towards the cost of providing small-pox hospitals.—Mr. URE answered: The view suggested by my right honourable friend is not that of the Government, nor is there, so far as I am aware, any fund out of which the suggested contribution could be made.

*Precautions against Plague.*

Earl WINTERTON asked the President of the Local Government Board what steps had been taken at the Channel ports medically to examine persons arriving from districts in Eastern Europe where plague existed.—Mr. BURNS wrote in reply: The Local Government Board's Order of 1909 requires the Customs' officer on the arrival of a ship from a foreign port to ascertain whether the ship is an infected ship or has come from an infected port and to question the captain. At the present time the only district in Eastern Europe known to be affected with plague is in the government of Astrakhan on the Asiatic borders,

an area inhabited by nomadic tribes who are unlikely to travel to these islands by train and the Channel passage.

*Public Slaughter-houses in Scotland.*

Mr. WATT asked the Lord Advocate to state the number of burghal local authorities in Scotland who have public slaughter-houses, and the number of such local authorities who had appointed or employed veterinary surgeons under the Public Health (Scotland) Act, 1897, and the Dairies, Cowsheds, and Milkshops Orders; and would he say how many burghal local authorities had not adopted any of these courses.—Mr. URE said in reply: The most recent returns for the year 1909 show that in that year there were 123 burghs in Scotland which had public slaughter-houses and 82 which had not. Every burghal local authority in Scotland has approved one or more veterinary surgeons for the purposes of the Public Health (Scotland) Act, 1897, and of the Order referred to by my honourable friend.

*Bakehouses and Public Health.*

In reply to Mr. WILKIE, Mr. CHURCHILL said: The whole question of conditions of work in bakehouses, in regard to the effect both on the health of the workers and on the public health, is being made the subject of investigation by my department in conjunction with the Board of Trade and the Local Government Board, and until the inquiries are completed I am afraid I can make no statement on the question of legislation.

*Hospital Accommodation at Rosyth.*

Major ANSTRUTHER GRAY asked the First Lord of the Admiralty whether, in view of the number of men employed at Rosyth, he would use his influence and secure them improved hospital accommodation which was reported to be inadequate.—Mr. MCKENNA replied: The care of the men employed on the dockyard works at Rosyth is entirely in the hands of the contractors, and I am not aware that the contractors' arrangements are inadequate.

## BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND SONS, 44 and 45, Rathbone-place, London, W.

Œdipus, King of Thebes. By Sophocles. Translated into English Rhyming Verse with Explanatory Notes by Gilbert Murray, LL.D., D.Litt., F.B.A., Regius Professor of Greek in the University of Oxford. Price, cloth, 2*s.* net; paper, 1*s.* net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

The Bradshaw Lecture on Cancer. Delivered at the Royal College of Surgeons of England on Wednesday, Dec. 7th, 1910. By Sir Alfred Pearce Gould, K.C.V.O., M.S. Lond., F.R.C.S. Eng. Price 3*s.* 6*d.* net.

CONSTABLE AND COMPANY, LIMITED, London.

The Surgery of the Diseases of the Appendix Vermiformis and their Complications. By William Henry Battle, F.R.C.S., and Edred M. Corner, M.A., M.B., M.C., F.R.C.S. Second and enlarged edition. Price 10*s.* 6*d.* net.

GLAISHER, HENRY J., London.

Reminiscences and Letters of Joseph and Arnold Toynbee. Edited by Gertrude Toynbee. Price 2*s.* 6*d.* net.

GRIFFIN, CHARLES, AND COMPANY, LIMITED, London.

The Child: A Medical Guide to its Care and Management. By Albert Westland, M.A., M.D., C.M. Price not stated.

HODDER AND STOUGHTON, London. WHEELER, ARTHUR H., AND CO., London.

The Niger and the West Sudan, or The West African's Note Book. A Vade Mecum containing Hints and Suggestions as to what is required by Britons in West Africa, together with Historical and Anthropological Notes and Easy Hausa Phrases used in Everyday Conversation. By Captain A. J. N. Tremearne (Commonwealth Forces of Australia), D.Anth. Cantab., F.R.G.S., F.R.A.I., Lecturer and late Hausa Scholar, Cambridge. Price 6*s.* net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

The Essentials of Materia Medica and Therapeutics for Nurses. By John Foote, M.D., Assistant Professor of Therapeutics and Materia Medica, Georgetown University School of Medicine. Price 4*s.* 6*d.* net.

Practical Lessons in Nursing. Fever-Nursing: Designed for the Use of Professional and Other Nurses, and Especially as a Text-book for Nurses in Training. By J. C. Wilson, A.M., M.D., Visiting Physician to the Hospital of the Jefferson Medical College and to the Pennsylvania Hospital. Sixth edition, revised and enlarged. Price 5*s.*

MCGRAW-HILL BOOK COMPANY, 239, West 39th Street, New York, and 6, Bouverie-street, London, E.C.

Municipal Chemistry. A Series of Thirty Lectures by Experts on the Application of the Principles of Chemistry to the City, delivered at the College of the City of New York, 1910. Edited by Charles Baskerville, Ph.D., F.C.S., Professor of Chemistry and Director of the Laboratory, College of the City of New York. Price, $5.00, or 21*s.* net, post paid.

MACMILLAN AND CO., LIMITED, London.

The Feeble-minded. A Guide to Study and Practice. By E. B. Sherlock, M.D., B.Sc. Lond., D.P.H., Barrister-at-Law. With an Introductory Note by Sir H. B. Donkin, M.D. Oxon., F.R.C.P. Lond. Price 8*s.* 6*d.* net.

MURRAY, JOHN, London.

Convergence in Evolution. By Arthur Willey, D.Sc. Lond., Hon. M.A. Cantab., F.R.S. Price 7*s.* 6*d.* net.

REBMAN, LIMITED, London. REBMAN COMPANY, New York.

Expansion of Races. By Charles Edward Woodruff, A.M., M.D., Member of the American Association for the Advancement of Science. Price 17*s.* net.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by Leighton F. Appleman, M.D. Volume IV. December, 1910. Annual subscription, £2 net. Single volumes, 12*s.* net each.

Conferences on the Moral Philosophy of Medicine, prepared by J. W. S. Gouley, M.D. Price 6*s.* net.

Cesare Lombroso, a Modern Man of Science. By Hans Kurella, M.D. Translated from the German by M. Eden Paul, M.D. Price 4*s.* 6*d.* net.

Surgery of Genito-Urinary Organs. By J. W. S. Gouley, M.D. Price 8*s.* net.

Essentials of Modern Electro-Therapeutics. An Elementary Text-book on the Scientific Therapeutic Use of Electricity and Radiant Energy. By Frederick Finch Strong, M.D., Instructor in Electro-Therapeutics at Tufts College Medical School, Boston. Price 4*s.* net.

The Climatic Treatment of Children. By Frederick L. Wachenheim, M.D., Chief of Clinic, Children's Department, Mount Sinai Hospital Dispensary, New York. Price 6*s.* 6*d.* net.

Principles and Application of Local Treatment in Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital. Price 4*s.* 6*d.* net.

Handbook of Treatment for Diseases of the Eye (Ophthalmic Therapeutics). By Dr. Curt Adam, Assistant Surgeon in the I. University Clinic for Diseases of the Eye, Berlin. With a Preface by Prof. von Michel, Berlin. Translated from the Second German Edition (1910) by William George Sym, M.D., F.R.C.S. Ed., and E. M. Lithgow, M.B., F.R.C.S. Ed. Price 10*s.* net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Personal Hygiene and Physical Training for Women. By Anna M. Galbraith, M.D. Price 10*s.* net.

Vaginal Cellotomy. By S. Wyllis Bandler, M.D., Adjunct Professor of Diseases of Women, New York Post-graduate Medical School and Hospital. Price 21*s.* net.

The Anatomic Histological Processes of Bright's Disease and their Relation to the Functional Changes. Lectures delivered in the Russell Sage Institute of Pathology, City Hospital, New York, during the Winter of 1909. By Horst Oertel, Director of the Russell Sage Institute of Pathology, New York. Price, cloth, 21*s.* net.

Principles and Practice of Modern Otology. By John F. Barnhill, M.D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine, and Ernest de Wolfe Wales, B.S., M.D., Clinical Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine Second edition, thoroughly revised. Price, cloth, 24*s.* net.

A Text-book of Surgical Anatomy. By William Francis Campbell, M.D., Brooklyn, New York, Professor of Anatomy, Long Island College Hospital. Second edition, revised. Price 21*s.* net.

THACKER, SPINK, AND CO., Calcutta.

Hints to Dressers. By Samuel Anderson, B.Sc., M.B., C.M. Glas., D.T.M. & H. Camb., Major, Indian Medical Service. Price Re.1.

TIP. DE LA VDA. DE F. DIAZ DE LEON, SUCS., Avenida del Cinco de Mayo y Motolinia, Mexico.

Howard Taylor Ricketts y sus Trabajos sobre el Tabardillo (Tifo de México). Publicado por la Secretaria de Instrucción Pública y Bellas Artes en cumplimiento del acuerdo relativo del Presidente de la República. Price not stated.

"TRUTH" PUBLISHING COMPANY, LIMITED, 10, Bolt-court, Fleet-street, London, E.C.

"Truth" Cautionary List for 1911. Price 1*s.*; by post, 1*s.* 2*d.*

UNIVERSITY PRESS, Manchester.

Feeblemindedness in Children of School-Age. By C. Paget Lapage, M.D., M.R.C.P. With an Appendix on Treatment and Training by Mary Dendy, M.A. Price 5*s.* net.

UNWIN, T. FISHER, London and Leipsic.

The Conquest of Consumption. An Economic Study. By Arthur Latham, M.D., and Charles H. Garland. New and revised edition. Price 1*s.* net.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Aerztliche Fortbildungskurse der freien Organisation für die medizinischen Kurse an der k.k. Universität Wien. (Postgraduate Medical Work in the University of Vienna. Information in German, English, and French.) Gratis on application.

Die Erweiterte Abdominale Operation bei Carcinoma Colli Uteri. (Auf Grund von 500 Fällen.) Von Prof. Dr. E. Wertheim in Wien. Price, paper, M.12; bound, M.14.50.

Medizinische Terminologie. Ableitung und Erklärung der Gebräuchlichsten Fachausdrücke aller Zweige der Medizin und ihrer Hilfswissenschaften. Von Stabsarzt Dr. Walter Guttmann, in Mühlheim a.d.Ruhr. Vierte umgearbeitete und erweiterte Auflage. Price M.19.

WIGAND, OTTO, Rossplatz, 3, Leipzig.

Über abnorme Lage der männlichen Keimdrüsen mit besonderer Berücksichtigung des Kryptorchismus. Von Dr. med. H. von Foth. Price M.2.40.

WILSON, EFFINGHAM, London. (HOLMES, W. AND R., Glasgow.)

Key to Elementary Book-keeping. For Day and Evening School and Commercial Classes. By Andrew Munro, F.C.I.S. Price not stated.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALDRIDGE, NORMAN E., M.B. Edin., D.P.H., has been appointed Medical Officer in Charge of the X Ray Department at the Royal Hampshire County Hospital, Winchester.

BARRINGTON-WARD, L. E., M.B., F.R.C.S. Edin., has been appointed Resident Medical Superintendent at the Hospital for Sick Children, Great Ormond-street.

BURD, GEORGE VANHOUSE, L.R.C.P., L.M. Edin., M.R.C.S., has been appointed District Medical Officer of Health by the Okehampton (Devon) Board of Guardians.

FAIRCLOUGH, W., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hexham District of the county of Northumberland.

HARMAN, A. B., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Southampton District of the county of Hants.

HILLYAR, GEORGE HEWLETT STANHOPE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Honorary Medical Officer to the Tavistock (Devon) Cottage Hospital and Dispensary.

KEANE, F., M.D. R.U.I., has been appointed Assistant House Surgeon to the West Bromwich District Hospital.

LEVIS, GEORGE S., L.R.C.P. & S. Irel., L.M., has been appointed Assistant County Medical Officer and School Medical Inspector for the County of Lindsey, Lincolnshire.

LUCY, REGINALD HORACE, M.B., C.M. Edin., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Tavistock (Devon) Cottage Hospital and Dispensary.

MITCHELL, JAMES, M.B., Ch.B. Aberd., D.P.H. Camb., has been appointed Medical Officer of Health for the Rural District of Glanford Brigg and the Urban Districts of Broughton and Brigg, Lincolnshire.

MURPHY, J. J., M.D., M.R.C.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

PATRICK, N. C., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Glenavy District of the county of Antrim.

REES, REES WILLIAM, M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Medical Officer of Health to the Cardiganshire County Council.

RIGBY, HUGH M., F.R.C.S. Eng., Surgeon to H.M. the King's Household, has been appointed Consulting Surgeon to the City of London Lying-in Hospital.

SMITH, C. W., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Sheffield (Hillsborough) District of the county of Yorks, West Riding.

TASKER, L. S. B., M.B., B.S. Lond., has been appointed House Surgeon at the Evelina Hospital for Sick Children.

TURNER, G. J. K., M.B., M.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Broughton Astley District of the county of Leicester.

WHITE, SINCLAIR, M.D. R.U.I., F.R.C.S. Eng., D.P.H. Cantab., has been appointed Professor of Surgery in the Sheffield University.

WOOLLCOMBE, WALTER LEY, F.R.C.S. Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Consulting Surgeon to the Tavistock (Devon) Cottage Hospital and Dispensary.

WORTHINGTON, ROBERT ALFRED, M.B., B.C. Cantab., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgical Registrar and Assistant Pathologist to the Royal Devon and Exeter Hospital.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ABERDEEN ROYAL INFIRMARY.—Assistant Medical Electrician.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BIRMINGHAM, PARISH OF, INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, attendance, &c.

BRADFORD, ROYAL EYE AND EAR HOSPITAL.—Female Resident. Salary £80 per annum, with board and laundry.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

CAMBRIDGE, COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and attendance.

CANCER HOSPITAL, Fulham-road, London, S.W.—House Surgeon for six months. Salary £70 per annum.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer, as House Physician for first six months and House Surgeon for ensuing six months. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Pathologist. Salary at rate of 100 guineas per annum.

DERBY, COUNTY BOROUGH OF.—School Medical Officer. Salary £250 per annum.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

EAST HAM EDUCATION COMMITTEE.—Assistant School Medical Officer, also as Deputy Medical Officer of Health. Salary £250 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, and laundry. Also Officer for the Electrical Department.

EDINBURGH ROYAL INFIRMARY.—Superintendent. Salary £600 per annum, with house, coal, and light.

FIFE, COUNTY OF.—Assistant School Medical Officer. Salary at rate of £250 per annum.

GLAMORGAN COUNTY COUNCIL.—County Medical Officer and School Medical Officer. Salary £800 per annum.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board and residence.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary £100 per annum, with board and lodging. Also Casualty House Surgeon for six months. Salary at rate of £60 per annum, with board and lodging.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, and attendance.

KING EDWARD VII. MEMORIAL SANATORIUM FOR SHROPSHIRE.—Resident Medical Officer, unmarried. Salary £200 per annum, with board and residence.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Three House Surgeons and Two House Physicians for six months. Salary at rate of £60 per annum, with board and residence.

LONDON FEVER HOSPITAL, Liverpool-road, Islington, N.—Physician and Assistant Physician.

MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, &c. Also Anæsthetist. Salary £40 per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician and Two House Surgeons. Salaries at rate of £60 per annum. Also Assistant House Physician and Two Assistant House Surgeons. Salaries at rate of £40 per annum. Board and washing in each case. All for six months.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, residence, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, &c.

ROYAL EAR HOSPITAL, Soho.—Honorary Assistant Anæsthetist.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Anæsthetist (female). Salary £50 per annum. Also Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

ST. THOMAS'S HOSPITAL.—Obstetric Physician.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board and residence.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Honorary Assistant Medical Officer.

SHEFFIELD UNIVERSITY.—Demonstrator in Anatomy. Salary £150 per annum.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

STREET TUBERCULIN DISPENSARY, Street, Somerset.—Second Assistant (female) for three months. Board and lodging offered.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £75 per annum, with board, washing, and attendance.

TOWER HAMLETS DISPENSARY, Whitehorse-street, Stepney, E.—Resident Medical Officer. Salary £100 per annum, with apartments, washing, light, and attendance.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board, residence, and laundry.

WEST BERKS UNITED DISTRICTS.—Medical Officer of Health. Salary £800 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing. Also Honorary Surgeon.

WORCESTER COUNTY AND CITY ASYLUM, Powick, Worcester.—Third Assistant Medical Officer. Salary £140 and all found.

WREXHAM, BOROUGH OF.—Medical Officer of Health and School Medical Officer. Salaries £80 and £50 per annum respectively.

WREXHAM, RURAL DISTRICT COUNCIL OF.—Medical Officer of Health. Salary £300 per annum. Also to act as Medical Superintendent of the Joint Fever Hospital. Salary £70 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Northallerton, in the county of Yorks, North Riding; at Inverkeithing, in the county of Fife; at Kingscliffe, in the county of Northampton; at Windsor, in the county of Berks; and at Atherstone, in the county of Warwick.

# Births, Marriages, and Deaths.

## BIRTHS.

FAIRLIE CLARKE.—On Feb. 24th, at Horsham, Surrey, the wife of A. J. Fairlie Clarke, M.C., F.R.C.S., prematurely, of twin sons (one stillborn).

HENDERSON.—On Feb. 24th, at Rodney-street, Liverpool, the wife of Dr. W. Savile Henderson, of a son.

HOLLAND.—On Feb. 23rd, in Edinburgh, the wife of H. Tristram Holland, F.R.C.S.E., C.M.S. Hospital, Quetta, of a son.

STREET.—On Feb. 21st, at Cranfield, Woburn Sands, the wife of Albert Ernest Street, M.R.C.S., L.R.C.P., of a daughter.

## DEATHS.

MACPHERSON.—On Feb. 22nd, at Whitehall Park, Highgate, N., Peter Macpherson, M.D., in his 75th year.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE VARYING CAPACITY OF TEASPOONS.

ATTENTION has again been called to the possible variations in the capacity of teaspoons by a pharmacist who took the trouble to collect a number of teaspoons from different customers. He found them to vary in capacity from 90 to 120 minims. The attention of the pharmacist was drawn to the matter by the complaint of a customer for whom he had dispensed a mixture containing 2 grains of morphine sulphate in an ounce mixture the dose of which was 1 drachm every hour until relieved. After the third dose had been taken the customer complained of distressing effects, and upon investigation it was found that he was using a teaspoon which held 110 minims, and was therefore taking much more than the dose prescribed. In the days of the old-fashioned silver teaspoons the variation in capacity was almost negligible, but since the introduction of electroplate makers seem to vie with each other in increasing the size of spoons. Dessertspoons and tablespoons also vary considerably in measurement, and prescribers would be well advised to insist upon their patients using graduated measures. In these days of standardised galenical preparations and scientific prescribing the teaspoon a a measure is obviously out of place.

## ENCEINTE.

*To the Editor of* THE LANCET.

SIR,—I should also like to call attention to the Second Book of Kings, chapter iv., verses 16 and 17, where Elisha addresses the Shunammite. They are as follows: "And he said, About this season, according to the time of life, thou shalt embrace a son. And she said, Nay, my lord, thou man of God, do not lie unto thine handmaid. And the woman conceived, and bare a son at that season that Elisha had said unto her, according to the time of life." The word "embrace" is the word to which I wish to draw attention. The French Bible says "tu embrasseras un fils" and the Spanish Bible reads "Abrazarás un hijo." It seems to me that in this expression the word "embrace" means to "embrace in the womb," and if it does mean so it would show that the idea of encompassing by the womb is very old, and that therefore "enceindre" may well mean encompass in like manner.

For those who prefer to accept the etymology *incincta* in the sense of *non cincta*, it must not be forgotten that even Landais himself, who made a special feature of etymology in his dictionary, admits "that the Spanairds, by a kind of antiphrasis, say of a femme grosse, that she is *en cinta*, in girdle." Even old Spanish dictionaries state that "estar la muger en cinta" means to be with child. The haughty Spaniards seem to have defied the etymology of their learned Bishop, Isidore of Seville, but the French treat him with more respect.

I am, Sir, yours faithfully,

Feb. 25th, 1911. BLANCUS.

## AN INCOMPATIBLE MIXTURE, CHLORAL AND MAGNESIA.

AT a recent meeting of the Pharmaceutical Society in Edinburgh Mr. Donald McEwan called attention to an incompatible mixture of a somewhat unusual character. A prescription, of which the ingredients were syrup of chloral, heavy magnesia, ipecacuanha wine, tincture of belladonna, and water, was duly dispensed, and on the following day the prescriber brought the bottle to the pharmacist, saying that he meant to give his patient syrup of chloral, but was afraid the dispenser must have dispensed spirit of chloroform instead. Notwithstanding that the prescription had been accurately dispensed it was evident from the smell that chloroform was present. Subsequent experiments demonstrated that the chloroform resulted from reaction between the chloral hydrate and the magnesia. In this mixture the sedative action of the chloral, which was the aim of the prescriber, is lost, and instead each dose contains about 3 minims of chloroform and 2½ grains of magnesium formate. Another important point is that the alkaloids of the belladonna and ipecacuanha are liberated by the magnesia, and completely separated and carried down by the globules of chloroform. The prescriber solved the difficulty by omitting the magnesia.

## HEALTH MATTERS IN BRITISH GUIANA.

A REPORT on the Blue-Book of British Guiana for 1909–10, prepared by Mr. J. Hampden King, Assistant Government Secretary, has been received at the Colonial Office and presented to both Houses of Parliament. The section devoted to vital statistics and public health gives the present estimated population of the Colony as 305,097—158,435 males and 146,662 females. The birth-rate for 1909 was 29·3 per 1000 of the population, the mean rate for the previous five years having been 30·4. Of the births registered 3577, or 40 per cent., were legitimate, and 5370, or 60 per cent., were illegitimate. The birth-rate per 1000 of the estimated population of each of the different races represented in the community was as follows:—Europeans (other than Portuguese), 11·1; Portuguese, 23·8; East Indians, 27·6; Chinese, 32·2; Aborigines, 61·3; blacks, 30·9; and mixed races, 27·5. The death-rate was 30·0 per 1000, as compared with a mean rate for the previous five years of 30·5. The mortality amongst children under one year continues to be high, and the mean rate for the past five years has been 210 per 1000. The health of the colony showed no marked improvement over the previous year. There was no epidemic of any dangerous, infectious, or contagious disease, though the existence of yellow fever and plague in neighbouring places gave rise to considerable anxiety. Malarial fever continues to claim a large number of victims, and efforts are being made by legislative and other action to control the mosquito pest. Quinine is now sold at the district post-offices all over the colony at cost price, and its use is steadily increasing. In 1909–10 some 2076 ounces were thus sold. Steps were taken to procure this drug put up in chocolate with a view of increasing its consumption among the children, but this method has proved too expensive. The Medical Department continues to give attention to the question of ankylostomiasis, and the interest that has been aroused in this connexion among the employers of labour on the sugar estates and among the labourers themselves is bearing fruit.

There were a few sporadic cases of enteric and blackwater fevers, but, as usual, the principal causes of death were malarial fevers, diarrhœal diseases, and phthisis and other forms of tuberculosis. Professor Deycke's system of treatment of leprosy by "nastin" is being steadily followed at the leper asylums on the lines laid down by him. Several cases have so much improved that it is hoped they may shortly be discharged. There are five public hospitals in the principal centres of population, and the outlying districts are served by dispensary hospitals and dispensaries. The immigration law also requires the maintenance of hospitals on every plantation on which there are indentured East Indian labourers, and these institutions are available for the treatment of emergency and pauper cases from the general community. The daily average number of in-patients was 705. There were 18·90 deaths. Outdoor treatment was given to 74,646 persons.

An Ordinance has been passed which gives power to take special measures of precaution in case the colony is threatened with an invasion of a dangerous epidemic disease which the ordinary law is inadequate to deal with. The idea is to have the means of at once dealing with any dangerous disease which makes its appearance, instead of having to wait till the legislature can give the necessary special powers, and to avoid a delay during which the disease might make serious headway. It may be of interest to mention that an Ordinance has also been passed withdrawing all protection from carrion crows and permitting them to be killed like vermin in any part of the colony. Until lately they were thought to be useful as scavengers and were protected from destruction, it being an offence to kill them; but it is now agreed that they are dangerous as disseminators of disease by fouling water, and that any usefulness they possess is more than counterbalanced by the risk of spreading infection.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, and April, 1911:—

March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
,, 23rd (Paris).—First Congress of French Medical Journalists.
,, 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
,, 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
,, 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
,, 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

FRIDAY.

GENERAL MEETING OF FELLOWS at 4.45 P.M.
Election of Candidates for Fellowship.

CLINICAL SECTION (Hon. Secretaries: A. Carless, J. Galloway): at 8 P.M.
Dr. Lediard (Carlisle); Benign (Bone) Cyst of Tibia.
Dr. James Collier and Mr. P. Lockhart Mummery: Tabes Dorsalis, with Very Early Rectal Crises.
Mr. R. J. Godlee: Two Unusual Cases of Disease of the Thyroid Gland.
Mr. Arthur Evans and Dr. C. H. Pring: Partial Removal of the Thyroid Gland in Graves's Disease.
Dr. Leonard Guthrie: Congenital, Hereditary, Familial Pes Cavus. And other Cases.
Mr. Arthur Evans: Report on the Subsequent History and Present Condition of a Case of Excision of the Larynx (shown Nov. 12th, 1909).

**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—9 P.M., Lettsomian Lecture:—Mr. W. F. Haslam: A Review of the Operations for Stone in the Male Bladder. (Lecture III.)

**HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.**

WEDNESDAY.—8.30 P.M., Mr. J. Sherren: The Diagnosis of Gall Stones.—Dr. H. L. Tidy: Arsenic Poisoning.

**OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.**

THURSDAY.—8 P.M., Card Specimens by Mr. Grimsdale, Mr. W. H. Brailey, and Mr. F. A. Juler. 8.30 P.M., Papers:—Dr. H. Griffith: Three Cases of Optic Nerve Tumour.—Mr. J. Taylor: A Morgagnian Cataract Operation; Remarks.—Mr. F. Thomas and Mr. G. Coats: A Peculiar Granuloma of the Retina.

**CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.**

THURSDAY.—7.30 P.M., Mr. S. Macpherson: Appreciative Music Study, its Application in the Training of the Child.

**HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.**

THURSDAY.—8.30 P.M., Discussion on Colitis (opened by Dr. S. Phillips and Mr. D'Arcy Power).

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.**

MONDAY.—5 P.M., Prof. K. W. Goadby: The Association of Diseases of the Mouth with Rheumatoid Arthritis, and Certain Other Forms of Rheumatism.

**ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.**

TUESDAY AND THURSDAY.—5 P.M., Dr. A. E. Boycott: Ankylostoma Infection (Milroy Lecture).

**ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, 9, Queen-street, Edinburgh.**

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Dr. G. M. Robertson: Melancholia, the Depressive Phase of Manic-Depressive Insanity.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M., Lecture:—Dr. G. Pernet: Pruritus.
TUESDAY.—4 P.M., Dr. G. A. Sutherland: Clinique (Medical). 5.15 P.M., Lecture:—Dr. A. Lieven (Aix-la-Chapelle): Treatment of Syphilis bearing on the Results obtained by Ehrlich's "606."
WEDNESDAY.—4 P.M., Mr. L. Cheatle: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. E. Wynter: Heart Disease in Middle Age.
THURSDAY.—4 P.M., Dr. A. Morison: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. S. French: The Vasomotor Factor in the Causation and Treatment of High Blood Pressure.
FRIDAY.—4 P.M., Dr. StClair Thomson: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Dunn: Some Common Forms of Eye Disease and their Treatment.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. Jones: Heredity and its Physical Bases.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture VI.)
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. D. Robinson: Gynæcological or Obstetrical Section.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: The Treatment of Acute and Chronic Urethritis.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Mr. A. J. Walton: Intussusception.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: Operative Treatment of Fractures (Balopticon Demonstration).
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. H. Evans: Hæmorrhoids and their Treatment.
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie). 4.30 P.M., Lecture:—Mr. R. P. Brooks: The Bacteriology of the Conjunctiva.

**CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.**

TUESDAY.—3.45 P.M., Lecture:—Mr. J. G. French: Pharynx and Naso-pharynx.
FRIDAY.—3.45 P.M., Dr. Abercrombie: Pharynx and Naso-pharynx.

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Stewart: Disseminated Sclerosis.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Tooth: Progressive Muscular Atrophy.

**HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—General Considerations of Joint Diseases, Injuries, Inflammation and its Varied Etiology, Hæmophilia, Scurvy. (Special Post-Graduate Course.)
THURSDAY.—4 P.M., Mr. Coats: Conjunctivitis in Children.
FRIDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Relationship of Diseases of Epiphyses, Bursæ, Tendon Sheaths to Joint Disease. (Special Post-Graduate Course.)

**HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.**

WEDNESDAY.—4 P.M., Lecture:—Dr. D. Grant.

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.**

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Limitation of the "606" Treatment.

**ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.**

MONDAY.—5 P.M., General Meeting.
TUESDAY.—3 P.M., Mr. A. E. H. Tutton: Crystalline Structure—Mineral, Chemical, and Liquid. (Lecture II.)
FRIDAY.—9 P.M., Hon. C. A. Parsons: Recent Advances in Turbines.
SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Radiant Energy and Matter.

BRITISH MEDICAL BENEVOLENT FUND, Rooms of the Medical Society of London, 11, Chandos-street, Cavendish square, W.

MONDAY.—5 P.M., Annual General Meeting.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. E. S. Bishop: Prolapsus Uteri (Post-Graduate Clinic).

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (8th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (9th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY** (11th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

**At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.**

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

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THE LANCET Office, March 1st, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Feb. 23 | 29·62 | S.W. | ... | 56 | 52 | 45 | 45 | 47 | Cloudy |
| ,, 24 | 29·64 | W. | 0·07 | 85 | 52 | 43 | 41 | 45 | Cloudy |
| ,, 25 | 29·62 | S.W. | 0·14 | 71 | 56 | 43 | 49 | 50 | Cloudy |
| ,, 26 | 29·84 | W. | 0·04 | 90 | 48 | 41 | 43 | 45 | Cloudy |
| ,, 27 | 30·05 | S.W. | ... | 58 | 50 | 40 | 40 | 42 | Raining |
| ,, 28 | 29·66 | S.W. | 0·37 | 57 | 53 | 42 | 49 | 50 | Overcast |
| Mar. 1 | 30·05 | W. | 0·16 | 87 | 52 | 39 | 39 | 40 | Fine |

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# The Hunterian Lecture

ON

# THE ASSOCIATION OF DISEASE OF THE MOUTH WITH RHEUMATOID ARTHRITIS AND CERTAIN OTHER FORMS OF RHEUMATISM.

*Delivered at the Royal College of Surgeons of England on March 6th, 1911.*

BY KENNETH W. GOADBY, D.P.H. CAMB., M.R.C.S.ENG., L.R.C.P.LOND., L.D.S. R.C.S.ENG.,

HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND; LECTURER ON BACTERIOLOGY AT THE NATIONAL DENTAL HOSPITAL, GREAT PORTLAND STREET, LONDON, W.

MR. PRESIDENT, VICE-PRESIDENT, AND FELLOWS,—I wish to express my deep sensibility of the honour you have conferred upon me in electing me as one of your Hunterian professors this year. The subject which I have with your consent chosen for this lecture is one which I feel sure would have appealed to that indefatigable worker in whose memory these lectures are established, and my aim will be, as a humble follower of John Hunter, to endeavour to correlate certain pathological facts in a new light.

When investigating any of the diseases affecting the joints of the human body the investigator is at the very outset hampered by the nomenclature of his subject: rheumatoid arthritis, osteo-arthritis, rheumatic gout, arthritism, polyarthritis, to cite a few of the hundred names applied to disease of the joints. In the earliest writings upon medicine, gout and rheumatism were confused and regarded as manifestations of one disease; in fact, Sydenham[1] was of the opinion that rheumatism was a modern disease and unknown to the ancients.

It is not necessary for the present purpose to critically survey the various divisions and subdivisions of diseases of the joints. A summary of the terminology and an epitome of the history will be found in Llewellyn Jones's[2] book on arthritis deformans.

## REMARKS ON ETIOLOGY.

Recently the leaning of most writers has been to regard swellings affecting the joints as divisible into (*a*) those affections which have their primary lesions in the capsule and peri-articular tissues; and (*b*) those in which the seat of the lesion is in the cartilages and bony portions of individual joints. Broadly speaking, the first group, comprising affections of the peri-articular tissues, are generally regarded as of infective origin due to bacteria, either within the joint itself or to a toxin produced by organisms in some other part of the body; as Llewellyn Jones points out, many cases of arthritis in which a bacteriological examination is negative closely resemble the cases of ascertained microbic origin, not only as regards the character of the local arthritic change, but also the general aspect of the patient, the mode of onset of the disease, and its clinical course and behaviour under treatment. The second group, in which the disease apparently commences in the bony and cartilaginous structures of the joints, is not usually considered of direct infective origin.

Goldthwait[3] attaches great value to X ray photographs in differentiating infectious arthritis from that of his two other varieties, atrophic and hypertrophic arthritis, but Kienboch,[4] and more recently Lindsay,[5] have shown that in gonorrhœal arthritis the bones may not preserve their normal density. It is not only in gonorrhœal arthritis, however, but even in ordinary septic processes without any definite arthritic affection, that thinning and alteration in the density of the bone take place. Moreover, a septic process of low virulence, but of long-continued action, in the mouths of human beings invariably produces alteration in the density of the bone in the neighbourhood of the infecting process, as the accompanying radiograph shows (Fig. 1) The infection is not by any means always associated with a copious discharge of pus, but, as I pointed out in my Erasmus Wilson lecture in 1907,[6] loss of density (rarefaction) takes place without the discharge of pus into the mouth, and such rarefaction may be accompanied by sclerosis.

For some years the belief in the infective origin of arthritis deformans has been gaining ground, more especially with that group of cases usually described as rheumatoid arthritis. The initial joint disturbances in acute polyarthritis caused by the gonococcus, the acute onset of rheumatoid arthritis in which no organisms have been found, and the onset of acute articular rheumatism, exhibit similarity; and further, the changes in the joints found in acute polyarthritis of demonstrable infective origin are closely related to the joint changes in which after careful bacteriological search no infecting agent was found.

It is fully admitted that clinically an unbroken progressive series may be established from osteo-arthritis of unknown origin through rheumatoid arthritis, infective polyarthritis, to acute rheumatism, although individually each may be differentiated by certain typical symptoms. But it seems also an equally logical supposition to assume that such a series of cases, although perhaps not owing their cause to a common specific infective agent, may yet be due to infective agents possessing differing degrees of infectivity or virulence.

To sum up this preliminary survey of the subject, a large number of cases of arthritis deformans, using the term in its inclusive sense, are now recognised to be of infective origin, others are of definite neural origin, but between the two are a considerable number which, according to some observers, may be infective, according to others atrophic, neural, or even idiopathic.

## CLINICAL EVIDENCE.

For some time my attention has been drawn to the presence of various so-called rheumatic symptoms in persons subject to disease of the jaws, particularly the type of disease known as pyorrhœa alveolaris, and associated with a discharge of pus from the gum margins and rarefaction of the alveolar process, and frequently the body of the bone. Lindsay in 1908 gives a report of 172 cases of rheumatoid arthritis in which particular inquiry was made for infective foci. In 88 of these cases an infective focus was found, 15 being men and 73 women, and 19 of the 73 women had definite pyorrhœa alveolaris. Lindsay further states that in the majority of the 172 cases some inflammation of the mouth existed, but only those cases where definite pus was to be found were included as pyorrhœa alveolaris. Lambert[7] in the same year says that of 190 cases 141 (76 per cent.) had badly decayed teeth or the teeth had dropped out and 49 (23·8 per cent.) showed teeth in fairly good condition; these latter were the younger patients. For many years pyorrhœa alveolaris was classed by the majority of surgeons as "gout in the mouth," and even amongst dental surgeons a special anatomical form of tooth is often referred to as a "gouty" tooth, and it is worthy of note that the particular gouty or rheumatic tooth so-called is invariably one in which the antero-posterior diameter of the crown is greater than the antero-posterior diameter measured at the gum margin; such teeth are liable to permit the accumulation of food in the interstitial spaces, to injuries of the gum and periosteum, and therefore to local infection. Strange as it may sound, I have often heard the pus oozing from the gum margins ascribed to the patient's rheumatic diathesis.

Two main types of disease of the alveolar processes of the jaws may be distinguished in relation to rheumatic affections:—(*a*) Easily bleeding hypertrophied gums, wasting of alveolus, discharge of pus from the alveolar margins. Loosening of all or individual teeth. (*b*) Thickening of the alveolar process (sclerosis) with area of rarefaction between individual teeth; alteration in position of individual teeth without loosening; showing atrophic gums, little or no discharge of pus. Microscopically pus may be found. In the more common types of mouth infection, where copious discharge of pus is found, where

[1] Opera, Sec. VI., c. 5.
[2] Arthritis Deformans, 1909.
[3] Infectious Arthritis, Boston Medical and Surgical Journal, 1904.
[4] Volkmann's Sammlung Klinischer Vorträge, N.F., No. 315.
[5] Bulletin of the Committee for the Study of Special Diseases, October, 1908, vol. ii., p. 106
[6] Erasmus Wilson Lecture on Pyorrhœa Alveolaris, THE LANCET, March 9th, 1907, p. 633.
[7] Bulletin of the Committee for the Study of Special Diseases, vol. ii., pp. 11–95.

the teeth themselves become altered in position and length, and which become entirely loosened owing to the destruction of their sockets, the appearance of the bone in the neighbourhood of the tooth sockets is one of a general rarefying osteitis. This is perhaps the more common type. The accompanying skiagraphs show the extent to which rarefaction and perosis of the bone may occur, extending in some cases into the body of the bone itself. [A series of X ray photographs were shown illustrating this point.] As this rarefaction commonly gives no pain, the patient's attention is usually not called to the distressing condition until the teeth themselves are loose. Occasionally evidence of reparative sclerosis is seen.

I have already drawn attention to the importance of this mouth disease as the origin of certain generalised infections, but the peculiar import of alveolar osteitis in arthritis deformans lies in the fact that the alveolus of the jaw is the position in the body where the bony tissues are exposed to septic infection, while owing to the absence of pain treatment is most often neglected, the insidiousness of the onset more often precludes its early diagnosis, and, perhaps more important still, the infecting organisms become adapted to bony tissues.

Lindsay states that in the Royal Mineral Water Hospital at Bath particular attention is paid to the presence of infective conditions of the mouth, and cites two cases where the removal of the septic teeth arrested but did not cure progressive disease of the joints. Llewellyn Jones discussing diagnosis says: "Strong presumptive evidence of infectious arthritis may be drawn from the presence of any local source of infection, such as pyorrhœa alveolaris, otorrhœa, and so forth," and MacNamara [8] states that he had traced many cases to the chronic poisoning of septic teeth. Luff,[9] Spender,[10] Fayerweather,[11] and many others consider the gastro-intestinal tract as the origin of infection, while Hunter,[12] myself, and others have demonstrated the relationship of oral sepsis to gastro-intestinal affections. It is truly said that septic diseases of the mouth are remarkably common and that relatively arthritis deformans is rare; but, on the other hand, I can confirm Grünbaum's [13] experience that few, if any, cases of arthritis deformans have sound mouths. Further, the bacteria I have isolated from the mouth do not, as a rule, possess a high degree of virulence even when injected in large doses into laboratory animals, and it is not illogical to suppose micro-organisms of a low type of virulence habituated to the environment of bony tissue and peri-articular structures would be more likely to act as infecting agents in chronic processes than organisms possessing a high degree of virulence. This supposition receives considerable support from my own investigation, before detailing which it is necessary briefly to consider the present bacteriological knowledge of rheumatoid arthritis.

## BACTERIOLOGY.

The earliest bacteriological work on Arthritis Deformans is that of Schüller,[14] who obtained fluid from the joints in a type of arthritis deformans clinically associated with early atrophy of the muscles, thickening of the synovial membranes of the joints and peri-articular structures, termed by him as *polyarthritis chronica villosa bacillaris*. Schüller described certain short bacillary forms which were easily decolourisable by the staining methods he used; in a later publication he says the organism stained by Gram's method. The organisms were found but rarely in the joint fluid, their seat of selection being the capsule and other structures outside the joint. Cultures were obtained by allowing fluid from the joint to drop through a cannula on to the culture media, or by triturating portions of the thickened synovial membrane or capsule and inoculating from the mass on to culture tubes. Schüller's bacillus produced greyish-white discrete colonies on agar in from two to six days, and grew readily on gelatin which was slowly liquefied. The organism remained alive on culture media for several months, retaining its virulence. Subcutaneous injections of 0·5 gramme to 1 gramme in rabbits were fatal in 24 hours; injection of a similar quantity into a joint produced swelling only, which became permanent in character, and resulted in a persistent limp. No pus was found in the joints, but the synovial membrane in places showed villous and brown fringes, sections of which were shown to contain the injected organisms. They were polar-staining bacilli which formed spores. Cocci were often found together with the bacilli, but were not regarded as playing an important part.

The next bacteriological work was that of Blaxall [15] in 1896, who examined fluid aspirated by Bannatyne from the joints in rheumatoid arthritis and found that by prolonged staining in concentrated solutions an organism could be demonstrated in the synovial fringes. This organism showed marked polar staining, the average length was 2$\mu$, and the average breadth 0·6$\mu$. Sometimes large numbers were found congregated round leucocytes. The organism almost completely decolourised by Gram's method, but not absolutely. Only two out of the 18 cases he examined showed organisms referable to skin contamination. He also examined a number of joint fluids in chronic synovitis, gonorrhœa, and other affections, without seeing this special form of organism. Attempts at cultivation were at first unsuccessful, but finally a growth was obtained on beef broth, in the form of a slightly flocculent deposit compared to gold dust. The bacilli were 3 to 4$\mu$ in length and showed the same polar staining as in the direct smears. No chains were seen. Upon agar the colonies developed very slowly, and were never larger than a pin's point. The bacilli grew on milk without producing acid or precipitating the casein. Intravenous inoculations into animals produced no definite reaction, and the animals recovered; slight swelling of the inoculated joints was observed in two instances which, however, cleared up. Both Bannatyne [16] and Schüller's cases were ones in which no bony or cartilaginous changes were present.

Kroh,[17] in his paper on Experimentelle Arthritis Deformans, gives an account of a number of cases of arthritis deformans which were produced experimentally in animals (rabbits). The method adopted was the resection of a portion of the joint, leaving the joint itself unaffected by septic processes, but partially out of action, due to the removal either of portions of the condyles or other anatomical parts of the knee-joints. No suppuration followed the small operation, but skiagrams taken at intervals after the operation showed a progressive change had taken place in the joints, causing hypertrophy of the remaining articular surfaces and the bony tissues supporting them, and producing a certain amount of swelling and deformity of the external portion of the joint.

Poynton and Paine,[18] Ainley Walker and Beaton,[19] and Beattie made cultures from cases of acute rheumatism. Poynton and Paine described a *streptococcus rheumaticus* found in the lesions of rheumatic fever, and which, when inoculated into animals, produced infective endocarditis, but they say they have never personally found the occurrence of this coccus in the joints of human beings. Beattie gives the result of cultures made from a case of acute rheumatic fever, which died six days after admission to the Royal

[8] Proceedings of the Royal Medical and Chirurgical Society, Third Series, vol. xi., p. 47.
[9] THE LANCET, March 12th, 1910, p. 712. [10] Osteo-arthritis, 1889.
[11] American Journal of the Medical Sciences, 1905, July–December, New Series, vol. cxxx.
[12] Severest Anæmias, &c.
[13] The Clinical Journal, vol. xxxvi., 1910, p. 289.
[14] Verhandlungen der Deutschen Gesellschaft für Chirurgie, 1892; Berliner Klinische Wochenschrift, Sept. 4th, 1893; American Journal of the Medical Sciences, December, 1906; Verhandlungen des Congresses für Innere Medicin, Berlin, 1897.
[15] THE LANCET, April 25th, 1896, p. 1120.
[16] Ibid.
[17] Deutsche Zeitschrift für Chirurgie, Leipzig, 1909, vol xcix., p. 425.
[18] THE LANCET, Sept. 22nd and 29th, 1900, pp. 861 and 932.
[19] Brit. Med. Jour., 1903, vol. i., p. 237.

## DESCRIPTION OF ILLUSTRATIONS.

FIG. 1.—X ray photograph showing loss of alveolus; the dotted line shows the normal alveolar line.

FIG. 2.—Forty-eight hours' egg agar culture streptobacillus malæ. × 1000. This photograph shows the involution forms; one is situated at the end of a chain, bacillary and coccal forms.

FIG. 3.—Streptobacillus malæ, 24 hours' agar culture, showing bacillary form.

FIG. 4.—Four days' agar culture of streptobacillus malæ, showing the degeneration into chains of bacilli and a large irregular involution form in the centre of the field.

FIG. 5.—Forty-eight hours' old colony of streptobacillus malæ on agar. × 3.

FIG. 6.—Right and left knee-joints of a rabbit inoculated in May, 1910, pure culture of streptobacillus. The photograph was taken from the back of the joint, the animal lying on its face. It will be seen that the right knee, the head of the tibia, shows alteration in the outline of the cartilage, some erosion of the lower end of the femur on the left-hand side, and the whole of the upper part of the head of the tibia shows signs of thickening. Comparing the outline of the cartilage of the sound limb on the opposite side the change can easily be seen.

FIG. 1.

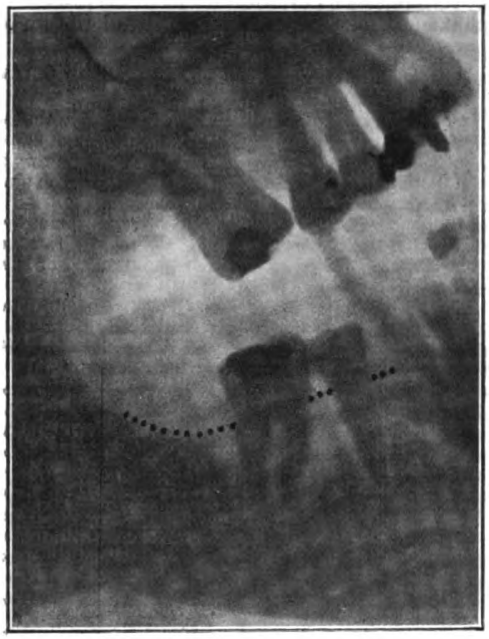
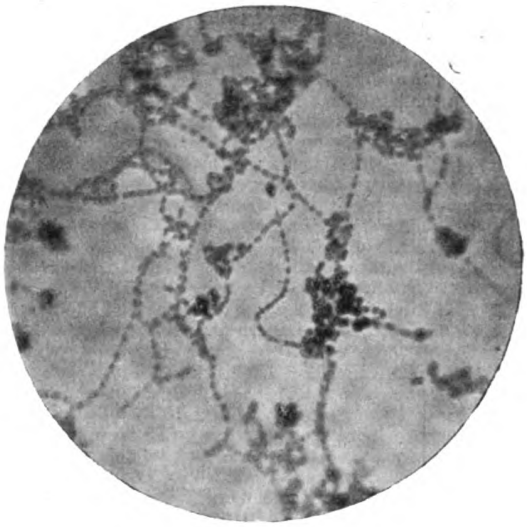


FIG. 2.



F.G. 4.

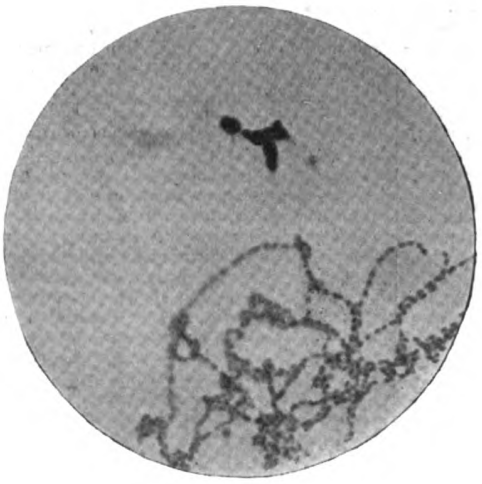


FIG. 3.

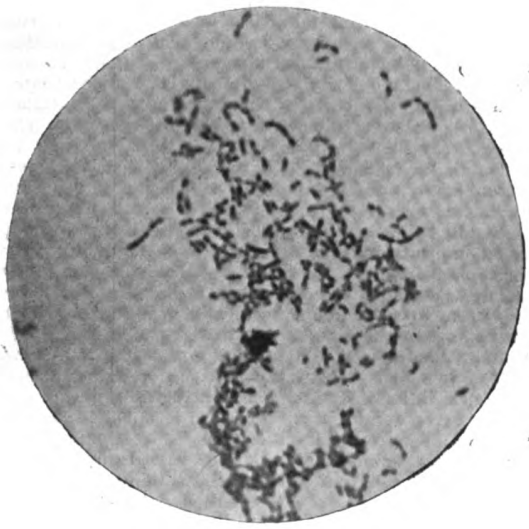
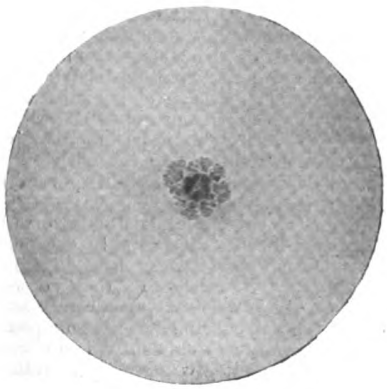


FIG. 6

FIG. 5.



Infirmary, Edinburgh. Subcultures of the organism obtained from the joints of the case were inoculated into animals intravenously, the amount used being two whole agar tubes. The organism was recovered in pure culture from the tissues of the animals afterwards, the injections having produced arthritic changes in four days. Two animals were inoculated in the knee-joints, producing definite arthritis of an acute type which gradually subsided but never disappeared, the animals ultimately regaining their normal health. No visceral lesions were found at the necropsy, but some thickening and infiltration remained round the joints. Cultivations from the fluid and from the cartilaginous surfaces were sterile. For the control, streptococci obtained from the vegetation in a case of malignant endocarditis were inoculated into the knee-joints of two rabbits. The rabbits died from streptococcal septicæmia with no trace of arthritic changes.

In 1903 Beaton and Ainley Walker described the cultural characters of an organism, a *streptococcus*, found in acute rheumatism. This was also found in cases of acute rheumatism, chorea, and endocarditis. They considered it similar to that found by Paine and Poynton, and Beattie. Large doses of the organism produced death within 40 hours in rabbits, six or more agar cultures being used. Moderate doses caused effusion of the joints and tendon sheaths, and death up to as late as three weeks, whilst small doses of the organism obtained from rabbits dead from infection with the streptococcus produced polyarthritis in animals (rabbits).

In 1907 Walker [20] again returns to the subject, and comes to the conclusion that the organism is a streptococcus differing in some respects from the ordinary streptococcus pyogenes.

It will be noted that the last three or four observers when dealing with acute infection of rheumatic fever type found that the organisms produced an acute polyarthritis which cleared up practically without a permanent lesion in the joints, similar in this respect to the lesions of rheumatic fever in the human subject.

Fayerweather worked at the bacteriology of arthritis deformans, his cases belonging to Schüller's type of polyarthritis. Fayerweather investigated four cases, in all of which were found *bacilli*, pleomorphic in type, alternating between long rods with slightly rounded ends, and diplococcal or lanceolate forms, which ultimately grew out into definite bacilli. Two of the organisms produced liquefaction of blood serum, but the other two did not. Of the two which did not produce liquefaction, one was non-motile and the other motile, and the non-motile one was not found to produce spores. The organisms differed slightly in their morphological and cultural characters. Ten rabbits were inoculated from the cultures, either intravenously, subcutaneously, or into the knee-joints. Subcutaneous and intraperitoneal inoculation produced no effect whatever. Three rabbits were inoculated with cultures of the first organism, a bacillus which produced some slight changes when inoculated into the knee-joints, whereas the third organism, a diplococcal form, produced a uniform thickening of the synovial capsule. No changes were seen in the bones, and no muscle wasting, and the animal was apparently quite normal.

A point of some importance in Fayerweather's work is that although the organisms produced no effect when inoculated subcutaneously or intravenously, in several instances change did occur in the joint, the synovial fringes being the chief structure affected.

The bacteriological findings in articular rheumatism may be divided into two series, the one *acute*—in which Poynton and Paine, Ainley Walker and Beaton, and Beattie all agree in finding *streptococci*; and *chronic* in which Schüller, Bannatyne, and Fayerweather found organisms of *bacillary types*, Schüller and Fayerweather both having produced lesions of the joints of rabbits by inoculation with cultures of the isolated bacilli.

One other observer remains to be cited—namely, Painter [21]—who treated nine cases of rheumatoid arthritis with vaccines prepared from the organism described by Fayerweather and claimed by Schüller to be identical with the one he first described. Unfortunately, no reference is made to which of Fayerweather's organisms was used. The opsonic index to the organism was low in every case tested, but a stock, and not an autogenous, vaccine was used. No improvement was observed in any of the cases treated, although a definite exacerbation of the local joint symptoms followed the injection of the vaccine in all the cases.

With the foregoing survey of the subject, I now turn to my own researches on the

### ESPECIAL RELATION OF RAREFYING ALVEOLAR OSTEITIS TO ARTHRITIS DEFORMANS.

The amount of destruction of the bony tissues in the jaw is often out of all proportion to the severity, or apparent severity, of the infection, and even when pus is found welling up from the gum sockets one cannot fail to be surprised at the amount of deep infection the bone has sustained.

The following X ray photographs taken for me by my friend Mr. Reid exhibit the loss of tissue and rarefaction particularly well. [A series of X ray photographs of the jaw were shown illustrating this point.]

Fig. 1 shows in the lower jaw the extreme destruction which may take place; not only the alveolus has been lost, but a distinct cavity has been formed in the body of the bone reaching downwards into the inferior dental canal. The bicuspid is also deeply infected. In the upper jaw some attempt has been made at repair. The photographs are merely examples of a large number which might be adduced to show the ravages that take place in the hard tissues of the jaw under the influence of chronic suppurative lesions. It must be noted also that in many cases there was little pus to be found. In Case 3 particularly it was only with the greatest difficulty and even on microscopical examination that definite pus was to be demonstrated. The teeth themselves were not loose, but of course gave definite evidence on physical examination of loss of bony attachment.

The peculiar interest of these photographs is the presence of rarefaction, together with sclerosis. Such a condition in many ways is comparable to arthritis deformans, and was the starting-point of my inquiry as to the possibility of the production of experimental arthritis deformans in animals by the use of the organisms, which evidently possessed a peculiar predilection for destruction of bony tissues.

In the first stage of my experiments I attempted to reproduce disease of the joints by the intravenous inoculation of organisms isolated from such cases as the ones shown in the X ray photographs. To begin with, the pus itself was used for inoculation into rabbits intraperitoneally, subcutaneously, and intravenously. Only a few of these experiments are given in the table of animal experiments, as in all instances in which such inoculation was performed no inflammatory reaction was produced in the joints. Localised suppuration indeed was formed in many instances, and in not a few cases the animals died sometimes from toxæmia, sometimes from generalised infection. Attempts were therefore made to determine which of the horde of bacteria in the pus were the infecting agents. Resource was had to agglutination, the opsonic and phagocyte index, estimations both before and after massage of the affected parts, and to direct animal experiments. A number of organisms were isolated, certain of which undoubtedly produced local suppuration when inoculated subcutaneously, and it was thought that perhaps these were the most likely to give positive results. The method described by Beattie was made use of, animals were inoculated intravenously with cultures of the organisms, and the animals afterwards exposed to cold. Beattie, who made use of this method, found that certain animals which he had injected with streptococci obtained from rheumatic cases exhibited signs of arthritis when the temperature of the laboratory in which they were housed went down to freezing-point during temporary damage to the heating apparatus. None of my animals exposed to cold after inoculation showed signs of arthritis.

Most of the organisms obtained from the alveolar processes are non-motile, and therefore the method of agglutination did not give particularly satisfactory results, and was abandoned.

The estimation of the opsonic index gave rather better results, but it was found that not only one organism, but often four or five different species isolated from the gum margins underwent variations in their opsonic index, particularly when the blood was taken before and after the operation of scaling and cleaning out the gum pockets.

Amongst the organisms isolated from the gum margin one in particular seemed to give more variation in its opsonic index than any of the others. This organism was at first

[20] Brit. Med. Jour., May 25th, 1907, p. 1233.
[21] Boston Surgical and Medical Journal, Nov. 7th, 1907.

regarded as a Gram-negative streptococcus, but as Gram-negative streptococci are exceedingly rare a good deal of attention was given to its morphology. It was found on careful examination that the organism in question differed very much in its general morphology, and in a certain number of other particulars, from the ordinary streptococcus of the mouth.

It is true that streptococcal forms exist in many instances and, as will be seen in Fig. 2, a fairly well-marked streptococcal form is seen, but with a tendency to elongation of the individual elements. Not only this, but there is definite irregular staining, giving the suggestion of polar-staining bacilli. This polar staining is much better demonstrated with Löffler's blue. It is, of course, known that streptococci when grown for any length of time in the laboratory have a tendency to form bacillary types; and it is also well known, as pointed out by von Lingelsheim in Kolle and Wassermann's "Handbuch der Pathogenen Microorganismen," that alternations of bacillary and coccal forms are not uncommon in streptococcal chains giving the well-known appearance of a Morse alphabet. Further, when growing badly or on unsuitable media, and particularly on potato, the streptococcus rapidly involutes and produces a variety of irregular involution forms, so that the difficulty of distinguishing the streptobacillus from the streptococcus is very great. Nevertheless, after a considerable amount of investigation and the staining of a large number of films in various ways I have finally come to the conclusion that the organism which I am describing is a streptobacillus. Its closest morphological relation, as far as I can discover, is the streptobacillus of ulcus molle described by Ducrey, and the drawings given in Kolle and Wassermann's "Handbuch," p. 434, and particularly p. 429, in which the involution forms are given, are in almost every particular identical with the morphology of this organism.

### MORPHOLOGY.

When growing freely the organism is like Ducrey's bacillus, a definite streptobacillus, but in colonies taken direct from the plates on first plating a diplobacillary form is common. (Fig. 3[22]). At first sight these diplobacilli closely resemble diplococci, but if care is exercised, particularly in staining by Löffler's methylene blue, it will be seen that the organisms are in reality small diplobacilli with well-marked polar staining. Young cultures (12 hours) stain by Gram's method, but the organism very rapidly loses the power of Gram-staining and except for the larger involution forms and for here and there scattered granules in individual organisms, decolourisation takes place; in fact, this peculiarity first led me to regard the organism as Gram-negative, but the question of Gram-staining is entirely one of the age of the culture. In the older cultures, and even in some of the younger cultures where the organism is not growing freely, there are certain curious forms which may or may not be regarded as involution forms, and they may be divided into three types: 1. Large, oval, swollen forms, 2 to 3$\mu$ in width, and showing a marked transverse striation when stained with Löffler's blue, the ends frequently pointed, but may be rounded. 2. Large coccal forms, 2 and even 3$\mu$ in diameter, irregular in shape and associated in clusters. (Fig. 4.) 3. Oval, elongated, and shuttle-shaped forms occurring frequently in the length of the chain, taking the stain for the most part deeply. At times these pointed swollen forms are seen at the termination of a thread, and they may exhibit transverse striation. (See Fig. 2.)

The various photographs show the pleomorphism that may be met with. Fig. 3 gives very frankly a diplobacillary form which is common in freshly isolated cultivations. Fig. 4 gives the streptobacillary form, showing, amongst other characters, the tendency to swollen elements in the thread, large swollen and irregular involution forms. In Fig. 4 particularly one large involution form is seen in the centre of the field. In the centre of the field of Fig. 2 a large irregularly stained form is seen at the end of one of the threads. Figs. 3, 4, 5, and 6 are from the same cultivations taken at different days. The organism may, I think, with propriety be termed pleomorphic, but there are other characters than the pleomorphism which tend to divide it from the streptococci.

[22] This name suggested for the organism as identifying it with the jaw lesions, from Lat. mala—the jaw bone.

### CULTURAL CHARACTERS.

Fig. 5 is a 48-hours old colony of the organism on agar, and gives the typical form of this organism. It will be seen at once that it differs from the ordinary streptococcal colonies, which are regular, hyaline, and faintly granular. It may, perhaps, bear some sort of resemblance to the colonies of the pneumococcus, but the organism itself in no way resembles Fraenkel's organism. The organism is a facultative anaerobe, and grows best of all in deep stab cultures on agar. Seemingly it requires a small percentage of oxygen present as it grows much better in the depths of a glucose formate stab than it does on a glucose formate streak in an atmosphere of hydrogen. The reaction of the medium is another important factor. No growth takes place at all on media + 10 or neutral. + 3 is the optimum reaction. Nutrose and ascetic agars both give fair development, but by no means as good a growth as agar made with egg albumin. On broth little or no growth is seen; generally a small quantity of precipitate collects at the bottom of the tube, but no flakes are seen down the sides of the tube, and general turbidity of the medium rarely takes place, neither is any pellicle formed.

I find that notwithstanding considerable care the organism dies out with provoking rapidity, and that unless constant subcultures are made on alkaline agar the cultures die out in about a week's time. They die out more rapidly at the temperature of the room than they do at blood heat; in fact, I find from experience that a week's residence at 15° C. almost invariably results in the death of the organism. The thermal death-point is 52° C. for half an hour. The organism in many respects resembles the streptococci in its fermentation of carbohydrates, as will be seen on reference to Tables I. and II. of the cultural characteristics of a number of organisms isolated. There appears to be no definite regularity in the carbohydrate fermentation, with the exception of the inability to ferment caffeine and manitol. Of the carbohydrates tested, salicin and inulin are less frequently fermented than sucrose; the organism always ferments glucose, only a few races do not ferment lactose. Litmus milk is rendered acid, and in the majority of cases coagulated. No visible growth occurs on potato at 20° C., but at blood heat a development may occur on potato producing a slight shiny, whitish appearance. No indol is produced, no sulphuretted hydrogen, and no reduction of nitrates to nitrites, there is no chromogenesis, and the organism grows on blood serum poorly and does not produce any liquefaction of the medium. There is no alteration in neutral red broth, aerobically or anaerobically, in four days. The growth on gelatin is feeble and fails generally. In agar cultivations the growth rarely takes the form of a definite streak, but almost invariably discrete colonies appear over the surface of the medium, and on egg albumin agar may develop to two or even three millimetres in diameter. This medium I find the most suitable for the isolation of the organism. The colonies have a curious pearly lustre when viewed with transmitted light both on agar and egg agar. The growth on agar is generally well marked in the condensation water, where a thickish nummular precipitate makes its appearance. On the surface of the medium, however, considerable variations exist in the cultural appearances, some of the cultures closely resembling streptococci. When the culture is removed for examination with the spatula the mass is frequently found to be of a dry, flaky consistency, and in making vaccines much difficulty is experienced owing to the tenacious way in which the colonies cling together; prolonged shaking in an electric shaker is necessary to produce an efficient emulsion.

Two other bacillary types were selected for examination; these showed a good deal of opsonic index variation. The cultural characters of one group appear in Table I. of cultures inoculated, as these three organisms were used for inoculation, and produced slight, but definite, joint swellings when inoculated into rabbits. Two other types of organisms were also tested by animal inoculation—namely, the Gram-negative cocci of the mouth, belonging to the group *Micrococcus catarrhalis*, and the *Micrococcus citreus granulatus* of Freund, but with negative results.

### INOCULATION EXPERIMENTS.

The intravenous, subcutaneous, and peritoneal inoculations into rabbits of the streptobacilli or other organisms

produced no effect or symptoms of arthritis in rabbits (see Table III.). At the suggestion of Mr. Clement Lucas I proceeded to the direct joint inoculation, with the result that symptoms indistinguishable from arthritis deformans have been established in 18 rabbits. The organisms which have produced this joint change have in 15 instances been the streptobacillus of the type the cultural characters of which are given in Table I., but differing from one another in certain particulars with regard to their carbohydrate fermentation and their growth on litmus milk (see Table I.); but both these media are ones in which organisms exhibit peculiarities not sufficient to differentiate them into definite species. In three rabbits a slight amount of joint change has resulted from the inoculation of the organisms given first in the table of cultural characteristics (Table I.), but in no case has the swelling or effect upon a joint been so marked in degree nor so definite as with the streptobacilli.

as the inoculation. Distinct wasting of the extensor muscles was also seen, and the joint became slightly flexed when the animal was at rest. In a number of other instances animals inoculated later than this one, particularly in three animals which were inoculated in January of this year, semi-flexion of the inoculated joint has already occurred.

Mr. Reid kindly obtained X ray photographs of a number of these animals for me, and I wish to tender him my sincere thanks for the trouble which amongst other things entailed transporting much apparatus to the laboratory for the purpose of taking the photographs of these experimental animals.

Fig. 6 shows the antero-posterior view of the right and left knees of the arthritic rabbit. The head of the tibia and the lower end of the femur on the outer side both show alterations in the cartilage and commencing destruction of the articular surfaces of the joint, but the photographs, of

TABLE I.—*Cultural Characters of Organisms Inoculated.*

| — | No. | Staining. | | Glucose. | Lactose. | Sucrose. | Inulin. | Salicin. | Caffeine. | Manitol | Indol. | Nitrite. | Neutral red. | Litmus milk. | | Broth. | | | Gelatin stab. | Potato. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Gram. | C. M. B. | | | | | | | | | | | Acid. | Clot. | Precipitate. | Pellicle. | Turbidity. | | |
| 1 | 562B | — | Red dots. | — | — | — | — | — | — | — | — | — | — | — | — | + | + | + | Surface lobulate, umbonate, no liq. | Raised yellow. |
| 2 | 581B | — | ,, | — | — | — | — | — | — | — | — | — | — | — | — | + | — | + | ,, | ,, |
| 3 | 682A | — | ,, | — | — | — | — | — | — | — | — | — | — | — | — | + | — | + | ,, | ,, |
| 4 | 729B | + | Irregular. | A | A | A | — | — | — | — | — | — | — | + | + | — | — | — | Filiform, no liq. | No growth. |
| 5 | 745A | + | ,, | A | A | A | — | — | — | — | — | — | — | — | — | ± | — | — | ,, | ,, |
| 6 | 734C | + | ,, | A | A | A | — | — | — | — | — | — | — | + | + | ± | — | — | ,, | ,, |
| 7 | 787A | + | ,, | A | A | A | A | — | — | — | — | — | — | + | + | ± | — | — | ,, | ,, |
| 8 | 656C | + | ,, | A | A | A | A | A | — | — | — | — | — | + | + | — | + | + | ,, | ,, |
| 9 | 615A | + | ,, | A | — | A | — | A | — | — | — | — | — | + | — | ± | — | — | ,, | ,, |
| 10 | 432C | + | ,, | A | A | — | — | — | — | — | — | — | — | — | — | ± | — | — | ,, | ,, |
| 11 | 692B | + | ,, | A | A | — | A | A | — | — | — | — | — | + | + | ± | — | — | ,, | ,, |
| 12 | 669C | + | ,, | A | A | A | — | A | — | — | — | — | — | + | + | — | — | + | ,, | ,, |
| 13 | 739A | + | ,, | A | A | A | | | | — | — | — | — | + | + | + | — | | ,, | ,, |
| 14 | 792A | + | ,, | A | A | — | A | | | — | — | — | — | + | — | + | — | — | ,, | ,, |
| 15 | 793B | + | ,, | A | A | — | — | — | — | — | — | — | — | + | — | + | — | — | No growth. | ,, |
| 16 | 437B | + | ,, | A | A | — | A | · | · | — | — | — | — | — | — | ± | — | — | ,, | ,, |
| 17 | 614C | + | ,, | A | A | A | — | — | — | -- | — | — | — | + | — | + | — | — | ,, | ,, |
| 18 | 794D | + | ,, | A | A | — | — | — | — | — | — | — | — | + | + | — | — | — | ,, | ,, |
| 19 | 775C | + | ,, | A | A | A | — | A | — | — | — | — | — | + | + | + | — | — | ,, | ,, |
| 20 | 679B | + | ,, | A | A | A | — | A | — | — | — | — | — | + | — | + | — | — | ,, | ,, |
| 21 | 670D | + | ,, | A | A | — | — | — | — | — | — | — | — | + | + | + | — | — | ,, | ,, |
| 22 | 635B | + | ,, | A | A | — | — | — | — | — | — | — | — | + | + | — | — | + | Filiform. | ,, |
| 23 | 637B | — | Red dots. | A | — | A | — | — | — | — | + | + | + | —Alk. | + | + | + | + | Nail growth. | White, moist. |
| 24 | 636B | + | Irregular. | A | A | A | — | — | — | — | — | — | — | + | + | — | + | — | Filiform. | No growth. |

MORPHOLOGY
- A—Nos. 1–3 & 23. Bacilli irregular and diplo-, faintly staining with ordinary stains; red granules in three-day cultures with methylene blue.
- B—Nos. 4–22 & 24. Bacilli, oval-pointed and spindle-shaped, coccal forms common, diplo- or strepto-bacilli, large, irregular, and swollen involution forms, these taking Gram's stain darkly, other forms often decolourised.

COLONIES
- A
  - Microscopically: Undulate or entire, marmorate, coarsely granular.
  - Macroscopically: Round medium, opalescent, opaque, raised, moist.
- B
  - Microscopically: Lacerate or lobate, sometimes lobulate, hyaline with grumous centre, or with irregular central darker area.
  - Macroscopically: Transparent and translucent, with opalescent sheen, slightly irregular or undulate, occasionally with central point.

C. M. B. = Carbolic methylene blue. A = Acid reaction. + = Complete reaction. ± = Slow and feeble reaction. — = No reaction.

In Table III. I have summarised as far as possible the inoculation experiments of 33 animals, which have been injected with cultures of the organisms I have been discussing. Case 34, Rabbit 10, was inoculated in May, 1910, with an emulsion of 0·5 c.c. of a 24 hours' culture of a streptobacillus (432 C). This organism was a typical variety of the streptobacillus, showing the curious shuttle-shaped involution forms and the long streptobacillary forms. On May 26th there was well-marked thickening of the capsule with some creaking in the joint, which was swollen, but not tender nor greatly thickened. The knee-joint progressively increased in size, and on Jan. 13th, 1911, there appeared to be some slight thickening of the knee-joint on the opposite side, and at the same time there was also to be felt a slight thickening of the ankle-joint on the same side

course, do not show the alterations in the synovial structures. The joint itself is typically that of arthritis deformans, the photograph being taken nine months after inoculation, only one injection having been made. The alteration in the head of the tibia and the thinning of the tuberosity are definitely shown. There appears also from the photograph to be some sclerosis in the head of the tibia and the lower end of the femur, recalling to some extent the rarefaction associated with sclerosis shown in the earlier photographs of the local disease of the jaw. A small foreign body is to be seen on the outer side of the joint and to-day there appears to be the commencement of osteophytic nodules around the margin of the head of the tibia.

Another rabbit was inoculated on the same day of May, 1910, but with a culture of a streptobacillus obtained from

another case. Well-marked swelling occurred on the outer side of the joint at the end of a month, and in four months' time the right knee was still slightly swollen. On Dec. 5th the animal was inoculated again, this time with a whole agar culture from another case exhibiting rheumatoid symptoms, but in this instance in the ear vein and not locally. No increase of swelling took place in the knee-joint; in fact, some improvement occurred for a short time. On Jan. 25th the animal was reinoculated on the outer side of the same joint with 1 c.c. of an agar emulsion in 1 c.c. sterile saline, care being taken that no fluid went direct into the cavity of the joint. The inoculation was followed by considerably increased swelling of the joint, which by Feb. 20th was much thickened, so much so that the animal was unable to extend the leg at the knee, and the knee-joint was held flexed. On Feb. 13th a skiagraph was taken by Mr. Reid, and very little change is to be seen in the skiagram notwithstanding the fact that well-marked thickening of the synovial membrane and the capsule were to be felt. The dissection of this joint and the uninoculated joint on the other side of the body are on the table, and show the thickened capsule and swollen synovial fringes as well as commencing destruction of the joint with bony and cartilaginous changes. The appearance of the skiagraph suggests some alteration in the right knee-joint, but very much less than in the other rabbit. These animals were inoculated from cases in which arthritis deformans was a definite symptom, but I have found that the streptobacillus is by no means confined to such mouths as have rheumatoid arthritis.

Rabbits Nos. 15 and 30 are two instances of knee-joint inoculations, Rabbit No. 45 of intracapsular inoculations, Rabbit Nos. 47 and 49 of extracapsular inoculation with 0·5 c.c. of saline emulsion of the streptobacillus obtained from persons who were apparently in normal health, but who had rarefying osteitis of the jaw.[23] It will be seen that these animals exhibit well-marked swelling and deformity of the right knee-joints. These animals have received only one inoculation, and Rabbit No. 47 was inoculated with a culture, photographs of which I have shown on the screen.

## CASES.

In going over my records of cases of diseases of the mouth I find that in the last 263 uncomplicated cases of varying degrees of infective processes of the alveolus, excluding all cases of growth and such cases as had complications, i.e., as antral disease and all other similar infections, 49 gave a definite history of rheumatic symptoms. These cases were divisible into three main groups, but of course shaded imperceptibly one into the other.

TABLE II.—*Cultural Characters of Streptobacillus from Various Sources.*

| No. | Morphology. | Source. | Stain: Gram. | Spores. | Involution forms. | Fermentation tests. | | | | | | | | | | | | Litmus milk. | | Broth. | | | Potato. | Gelatin stab. | Agar streak. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Glucose. | Lactose. | Sucrose. | Inulin. | Salicin. | Caffeine. | Mannitol. | Neutral red. | Indol. | Nitrite. | $SH_2$. | Acid. | Clot. | Precipitate. | Pellicle. | Turbidity. | | | |
| 302C | Streptobacilli. | Mouth inflammation. | + | — | Present 48 hours. | A | A | A | A | A | — | — | | — | — | — | — | — | — | — | — | No growth. | Filiform, no liq. | Bluish iridescent colonies. |
| 307A | ,, | Pus, mouth. | + | — | ,, | A | A | A | — | A | — | — | | — | — | — | — | — | + | — | — | ,, | ,, | Lobulate; large (2 mm.). bluish colonies. |
| 654B | Oval bacilli, short. | ,, | + | — | ,, | A | A | A | — | A | — | — | — | — | — | — | — | — | + | — | — | ,, | ,, | Flat, lobulate colonies. |
| 125B | Streptobacilli. | Alveolar osteitis. | + | — | ,, | A | A | A | | | | — | | — | — | — | + | + | + | — | ± | ,, | Filiform band. | Flat, bluish, lobulate. |
| 167D | ,, | Alveolar osteitis, pus. | + | — | ,, | A | A | A | | | | — | | — | — | — | + | — | + | — | — | ,, | No growth. | Flat, dry (crumbly), lobulate. |
| 237B | ,, | Pus, mouth. | + | — | ,, | A | A | A | A | | — | — | | — | — | — | + | + | + | — | — | ,, | ,, | Flat colonies. |
| 273C | ,, | ,, | + | — | ,, | A | — | — | A | A | — | — | | — | — | — | + | + | + | — | — | ,, | ,, | — |
| 469D | ,, | ,, | + | — | ,, | A | A | A | A | | | — | | — | — | — | + | — | + | — | — | ,, | Filiform. | Grey, lobulate; centre grumose. |
| 454A | ,, | ,, | + | — | ,, | A | A | — | — | | | — | | — | — | — | + | — | — | — | — | ,, | Flocculent. | Grey lobulate; flat; dry. |
| 498A | ,, | Pus, gums. | + | — | ,, | A | A | A | — | | | A | | — | — | — | + | + | + | — | — | ,, | Filiform. | Marmorate gyrose; large. |
| 506A | ,, | Pus, alveolus. | + | — | ,, | A | A | A | — | | | — | | — | — | — | + | + | — | — | — | ,, | ,, | Lobulate, medium. |
| 519B | ,, | Pus, jaw abscess. | + | — | ,, | A | A | A | — | | | — | | — | — | — | + | + | + | — | ± | ,, | ,, | ,, |
| 581C | ,, | ,, | + | — | ,, | A | A | A | — | | | — | | — | — | — | + | + | + | — | — | ,, | Discrete colonies. | ,, |
| 89A | Streptobacilli, oval, chains. | Pus, gums. | + | — | ,, | A | A | — | — | | | — | | — | — | — | + | + | + | — | + | ,, | Filiform. | ,, |
| 103C | Streptobacilli. | P , antrum. | + | — | ,, | A | A | — | — | | | — | | — | — | — | + | + | + | — | — | ,, | No growth. | ,, |
| 373C | Oval bacilli, chains. | Gum margin. | + | — | ,, | A | A | — | — | — | — | — | | — | — | — | — | — | + | — | — | ,, | ,, | ,, |
| 408C | ,, | Throat. | + | — | Coccal. | A | A | — | — | — | — | — | | — | — | — | + | — | — | — | — | ,, | ,, | Lobulate, dry. |
| 413 | ,, | Gums. | + | — | Coccal and large. | A | A | — | — | — | | — | | — | — | — | + | — | — | — | — | ,, | ,, | Grey, flocculent, small. |
| 418 | Streptobacilli. | Root extracted tooth. | + | — | ,, | A | A | — | — | — | | — | | — | — | — | + | — | + | — | — | ,, | Filiform. | Transparent, medium. |
| 444C | ,, | Rhinitis. | + | — | ,, | A | A | A | — | A | — | — | | — | — | — | + | — | + | — | — | ,, | Discrete colonies. | Lobulate, bluish grey. |
| 450A | ,, | Jaw abscess. | + | — | ,, | A | A | — | — | | | — | | — | — | — | + | — | — | — | — | ,, | No growth. | Lobulate, medium. |
| 428C | ,, | Gums, pus. | + | — | ,, | A | A | — | — | — | — | — | | — | — | — | + | + | + | — | — | ,, | ,, | Undulate to gyrose, bluish. |
| 588C | Diplobacilli. | Gums, no pus. | + | — | Coccal. | A | A | — | — | — | — | — | — | — | — | — | + | + | + | — | — | ,, | Filiform. | Flat, undulate. |
| 618B | Streptobacilli. | Throat abscess. | + | — | ,, | A | A | — | — | — | — | — | — | — | — | — | + | — | + | — | + | ,, | No growth. | Grey, flat, moist. |
| 635D | Diplobacilli. | Jaw abscess. | + | — | ,, | A | A | — | — | — | — | — | — | — | — | — | + | + | — | — | + | ,, | ,, | Grey, minute, lobulate. |
| 680B | Short bacilli. | Gums, no pus. | + | — | ,, | A | A | — | — | — | — | — | — | — | — | — | + | + | — | — | + | ,, | ,, | Grey, minute, discrete. |

A = Acid reaction. + = Complete reaction. ± = Slow and feeble reaction. — = No reaction.

[23] These animals were exhibited at the lecture.

### TYPES OF CASES.

*Group A.*—Definite arthritis of one or more joints, with pain, swelling, limitation of movement, and with or without wasting of one or other muscles in the neighbourhood of the joint. Swelling of tendons or tendon sheaths in the neighbourhood of joint or elsewhere. Muscular pains, diffuse and irregular in distribution and origin. Neuralgia of trigeminal type. Anæmia.

*Group B.*—No definite arthritis; inflammation, or swelling of tendon sheath or tendon. Diffuse muscular pains, irregular in distribution and origin. Occasional swelling of joints or tendons, clearing up and leaving no objective symptoms. Palpitation, with irregularity of heart action. Tachycardia. Neuralgia, trigeminal type. Sciatic pain not definitely referred to the sciatic nerve, but diffuse and referred. Gastric and intestinal symptoms.

*Group C.*—Occasional swelling and tenderness in joints or tendons, rapidly clearing up and leaving no objective symptoms. Irregular muscular pains, occasionally associated with stiffness. Tingling, or "pins-and-needles" sensation in extremities. Local asphyxias or other vasomotor phenomena. Intermittent lumbago. Occasional trigeminal neuralgia.

These three types gave respectively 25, 16, and 8 cases. Of the total number of cases with a history of rheumatic symptoms, 15 were males and 34 females. A brief synopsis of the 49 cases is appended.

TABLE III.—*Inoculation Experiments.*

| | No. of case. | Organism. | Animal. | Dose. | Site of inoculation. | Result and notes. |
|---|---|---|---|---|---|---|
| Mouth suppuration, with symptoms of rheumatism. | 2 | Diplobacillus (2). | Rabbit. | 1·0 c.c. | Right knee-joint. | No suppuration; 20 days, globular swelling of joint; 2 months almost disappeared. |
| | 4 | Streptobacillus (4). | Mouse. | 0·3 c.c. | Subcutaneously. | No suppuration; recovered. |
| | 14 | ,, (4). | Rabbit. | 0·5 c.c. | Right knee-joint. | No suppuration; 2 months, no change in joint. |
| | 16 | Streptobacillus. | Mouse. | 0·5 c.c. | Subcutaneously. | No suppuration; recovered. |
| | 16A | ,, | ,, | 0·5 c.c. | ,, | ,, ,, |
| | 17 | ,, (8). | Rabbit. | 0·5 c.c. | Right knee-joint and intravenously. | No suppuration; swelling of knee-joint for 48 hours; recovered. |
| | 21 | ,, (5). | ,, | 1·0 c.c. | Right knee-joint. | No suppuration; 2 months later, joint much swollen, tender, crepitus, synovial membrane thickened. |
| | 24 | Diplobacillus (3). | ,, | 1·0 c.c. | ,, | 7 days, fluid in joint, capsule swollen; 40 days, still some swelling outer side of joint. |
| | 31 | Streptobacillus (6). | ,, | 0·5 c.c. | Right knee-joint and intravenously. | Small external abscess; no fluid in joint in 10 days; recovered. |
| | 32 | Streptobacillus (urine) (9). | ,, | 0·5 c.c. | ,, | 7 days, much thickening upper end tibia; 6 weeks, general globular thickening of joint. |
| | 34 | Streptobacillus (10). | ,, | 0·5 c.c. | Right knee-joint. | No suppuration; progressive enlargement of joint, much thickened; muscular wasting; bone affected 10 months later (see X ray photo). |
| | 35 | ,, (11). | ,, | 1·0 c.c. | Subcutaneously. | Local tissue necrosis; recovered; organism obtained in pure culture, reinoculated; abscess formation; recovered. |
| | 36 | ,, (13). | ,, | 2·0 c.c. | ,, | Local suppuration, with thick caseous pus; organism recovered 7 days later, pure culture; recovered. |
| | 38 | ,, (12). | ,, | 1·0 c.c. | Right knee-joint and intravenously. | 3 days, joint swelling; 2 months, persistence of joint swelling and thickening (?); symptoms slight. |
| | 40 | ,, (1). | ,, | 1·0 c.c. | ,, | 3 days, joint swelling; 20 days, globular; 40 days, swelling almost disappeared. |
| | 40A | ,, (1). | ,, | 1·0 c.c. | Intravenously only. | No change; animal recovered. |
| | 44 | ,, (14). | ,, | 1·5 c.c. | Right knee-joint and intravenously. | 7 days, thickening of joint; 10 weeks, definite thickening of bones, but capsule of joint not affected. |
| | 44A | ,, (15). | ,, | 0·5 c.c. | Right knee-joint, external to joint. | 7 days, general swelling of joint with some capsular thickening; 2 months, swelling less but present. |
| | 49 | ,, (7). | ,, | 0·75 c.c. | ,, | One month, general swelling, no pus formation; joint flexed; synovial membrane and capsule thickened. |
| Mouth suppuration, with no symptoms of rheumatism. | 50 | M. citreus granulatus. | ,, | 0·3 c.c. | Right knee-joint. | No suppuration, no swelling of joint; recovered. |
| | 51 | Streptobacillus (16). | ,, | 0·5 c.c. | Right knee-joint and intravenously. | No suppuration, swelling of joint, and capsular thickening; 10 months later no swelling. |
| | 52 | ,, (17). | ,, | 2·0 c.c. | Right knee-joint and intraperitoneally. | No suppuration, swelling of joint and capsular thickening 5 months later. |
| | 53 | ,, (18). | ,, | 1·0 c.c. | Right knee-joint external to joint. | 20 days, swelling of joint and abscess in calf muscles, pus aspirated, culture sterile. |
| | 54 | ,, (19). | ,, | 1·0 c.c. | Right knee-joint. | 14 days, swelling and partial fixation of joint. |
| | 55 | ,, | ,, | 0·5 c.c. | Intravenously. | No signs of infection; recovered. |
| | 56 | ,, (20). | ,, | 1·0 c.c. | ,, | ,, ,, ,, |
| | 57 | ,, (21). | ,, | 1·0 c.c. | ,, | ,, ,, ,, |
| | 58 | ,, (22). | ,, | 1·5 c.c. | Intravenously and subcutaneously. | Local abscess, thick pus; animal recovered; organism obtained from pus. |
| | 59 | Pus from mouth. | ,, | 1·0 c.c. | Subcutaneously. | Two abscesses at site of inoculation, streptobacillus recovered in pure culture; recovered. |
| | 60 | Pus from rabbit (59). | ,, | 1·0 c.c. | ,, | No local suppuration, no general infection; recovered. |
| | 61 | Bacillus (23). | ,, | 1·0 c.c. | ,, | Acute local necrosis of skin, which sloughed; no swelling or alteration of joints; recovered. |
| | 62 | Streptobacillus (24). | ,, | 0·5 c.c. | Intravenously. | No symptoms produced; animal well 4 months later. |
| | 63 | ,, | ,, | 1·0 c.c. | Right knee-joint and intravenously. | 1 month, slight capsular thickening, no pus. |
| Control | | Sterile water. | ,, | 2·0 c.c. | Right knee-joint. | 10 weeks, no signs of inflammation or thickening of joint or capsule. |

The numbers in parenthesis under the heading "Organism" refer to the numbers of the organism in Table I.

### NOTES OF CASES.

*Group A.*

CASE 1.—Aged 60. Failing health for several years, with recurrent attacks of swelling in mouth. An acute attack diagnosed as food poisoning two years previously. Has had fleeting swellings in various situations, mostly extensor surfaces of hands, and stiffness in shoulders.

Ulnar deflection both hands. Right index, metacarpo-phalangeal joint swollen. Mouth: condition very bad, much loss of tissue, alveolus absorbed and rarefied. Vaccine therapy. Cured.

CASE 2.—Aged 42. Five and a half years previously had a little rheumatism which became subacute; treated at Buxton three months, much better. Following winter more rheumatism, with swelling in joints, knees, arms, and hands, especially the left, very tender at night, cramps, tingling in calf mostly preceding cramps. Treated again at Buxton and Aixe. Confinement next year in Malta; sore tongue during the time at Malta; child also had sore mouth. Teeth extracted before leaving Malta; acute infection following; was stiff, could not move. Acute attack subsided, joints became less stiff. Present condition: right internal head of tibia thickened, knee full of fluid, much creaking, limitation of movement. Left knee freer movement, but creaking in joint. Thickening along patellar tendon, ulnar displacement of both hands. Mouth: thickening of alveolar margins. Pus present in small quantity; interdental rarefaction of bone. Vaccine therapy. Relieved.

CASE 3.—Aged 30. In September, 1909, was going home from business and got wet through. An acute attack of pain and swelling in most of her joints. Was sent to bed ten weeks, and then to Bath, where she was able to walk with two sticks. Was at Bath until Dec. 24th; not progressed at all. On May 11th, 1910, right knee and ankle swollen; knee, thickening of upper and outer margin of head of tibia, painful on pressure; œdema over shin; pain and swelling of right hip; lordosis, unable to walk upstairs without assistance; can just manage to walk on the flat with a stick, which always brings on pain. Mouth: teeth and gums appear normal; slight ulceration at back of upper central incisors. History of occasional sore mouth, loss of bone between premolars in upper jaw. Pus microscopically only. Vaccine therapy. Cured.

CASE 4.—Pain in back and outer side of left thigh for six years. Three years after commencement thickened synovial fringe diagnosed. Well-marked swelling of left knee, pain in certain positions, tender spot outer and lower side of patella. Mouth: desquamative gingivitis, sclerosing osteitis upper jaw, mild in type; much thickening of alveolus. Pus from three teeth. Vaccine therapy. No improvement.

CASE 5.—Six years ago pain and diffuse swelling right knee and right hand and wrist; pain disappeared, leaving stiffness; joints creaked. Present time unable to use right wrist; thickening of tendon sheath of extensor of hand; slight ulnar displacement. Mouth: teeth have been projecting more and more for some three years. Little suppuration, but thickening of alveolus, slight thickening of alveolar margin. Vaccine therapy. No improvement.

CASE 6.—March, 1906. Right knee large swelling. Droitwich in August. By October nearly well. At the end of October swelling recommenced, and in March, 1907, left knee and left shoulder were also considerably swollen with much pain. Both hands became swollen on dorsal surfaces. In June he went to Aix-les-Bains, did not improve, and was worse afterwards. Was treated at home till beginning of 1908, when he was sent to Teneriffe. During the whole of the time he had been taking iodides. At Teneriffe another acute attack, in which all the joints that had been previously affected became very much worse; had constant smell in nose and mouth, and taste of "burning hair." Unable to walk without the assistance of two people, one on either side. In February, 1909, swelling right and left knees, impossible to feel outline of joint; well-marked creaking in both; ulnar deflection both hands, right hand fingers flexed, cannot straighten without acute pain. All tendon sheaths thickened; both shoulder-joints thickened, creaking, very painful on passive movement. Has lost 2 stone in weight since March, 1906, and a stone during the last year. Mouth: full of gold crowns and bridge work, with discharge of pus from almost every socket. Vaccine therapy. Cured.

CASE 7.—Progressive polyarthritis, remissions and exacerbations, the latter with fever. Pain, wasting of muscles. Mouth: all teeth lost, except two, through pyorrhœa. Not treated.

CASE 8.—Age 45. Three years ago acute pain in left shoulder; swollen; three days in bed; recurrence a year later, associated with cardiac attack; treated at Llandudno; in bed for three weeks. Pain recurred at intervals for three years, occasionally appearing in other joints. Latterly associated with pain, hyperæsthesia and occipital neuralgia. Fusiform swelling of middle and ring fingers of both hands. Swelling external malleolus. Mouth: little or no suppuration, thickened alveoli; teeth recently shifting in position without obvious cause. Vaccine therapy. Cured.

CASE 9.—Local asphyxia with coldness, tingling in both feet at night, right foot "goes to sleep." Tingling in fingers; occasionally left hand becomes quite cold for a short time. Pain in both knees intermittent; swelling synovial membrane right knee; tender round internal tuberosity of left tibia. Mouth: some pus, only found microscopically, but composed of fresh polymorphonuclear cells. Has lost most of teeth owing to progressive loosening. Last few years constant recurrence of water blisters on lips. Vaccine therapy. Relieved.

CASE 10.—Aged 54. Six years' history of neuritis in arms and legs, associated with swelling of tendons in hands, stiffness and creaking in left shoulder. Constant lumbago, occipital neuralgia. Fusiform swelling ring finger of left hand. Mouth: has had receding gums for 20 years. Little pus, alveolus thickened, some loss of alveolus in interdental spaces. Vaccine therapy. Cured.

CASE 11.—Swelling of both knees, thickening of synovial membrane, no apparent alteration in joint surfaces, ulnar deflection of one hand. First noticed rheumatic symptoms five years ago; from that date to the present time has been progressively stiff in all the joints, and with muscular pains, generally worse at night. Quite unable to walk now more than a few hundred yards, even then only with excessive fatigue and pain in joints. Appetite bad, has lost weight; considerable depression. Mouth: considerable pus discharge from gums. X ray photograph shows rarefaction and sclerosis. Vaccine therapy. Cured.

CASE 12.—Rheumatoid arthritis diagnosed in both great toes eight years previous to examination. Acute neuritis, swelling, pain, and loss of movement in left shoulder, made worse by electrical treatment. Recurrent trigeminal neuralgia, vasomotor disturbances in fingers. Mouth: bad taste in mouth, gastric fermentation. Pus from the upper jaw, mainly incisor region, four years. Thinning and porosis of alveolus, no thickening. Vaccine therapy. Still under treatment.

CASE 13.—Attacks of acute rheumatism affecting all the joints, necessitating confinement to bed for six weeks. Treated at Woodhall Spa. All joints still creaking three years after attack. Right knee much swollen and thickened synovial membrane, patches of fibrositis in the angle of the scapula, and persistent lumbago, and pain over both sacro-iliac joints, worse at night; hands swollen and a little œdematous, swelling not confined to extensor tendons, but diffuse. Œdema of shins. Mouth: gums œdematous, spongy, bleeding. Right upper central incisor quite loose. Pus. Alveolus upper and lower jaw thickened, sclerosed. Vaccine therapy. Cured.

CASE 14.—Twenty-nine years previously puerperal septicæmia. Nineteen years later gradual development of thickening, pain, swelling, loss of movement in right knee which persisted, becoming progressively worse for the last ten years; one knee 18 inches in circumference, the other 19 inches; crepitations in both. Left wrist-joint swollen, dorsal surfaces, extensor tendons also. Mouth: no pus. Few teeth loose. Osteoporosis. Vaccine therapy. Improved.

CASE 15.—Vaso-motor disturbances with hands becoming white and cold. Rheumatic pain both shoulders. Acute attack affecting both knees, right more than left. Swelling of peri-articular tissue, crepitations in right knee, not in left; right knee remaining slightly swollen, but with little pain. Intestinal intoxication, mucous colitis. Mouth: localised area of purple and œdematous gums, principally upper jaw on left side. Four teeth discharging pus. "Gouty" teeth. Two gold crowns, which were removed, badly fitting; roots found thin and transparent. Vaccine therapy. Relieved.

CASE 16.—On March 7th, 1908, started with pain behind left ear, without obvious cause. Progressive rheumatism affecting the right shoulder and left thigh; several chills and shivering fits, followed by pain in joints, temperature in the evening going up to 100° F. Attack subsided, but the following spring another acute attack, with fever, pains in the head and neck which came on every afternoon and with any change of temperature; unable to move head. Pain in several joints, shoulder stiffness and creaking. Had a specific history, but had been treated for four years. After an X ray examination of the chest it was decided that it was possibly a case of early tubercular disease, and the patient was sent to a sanatorium, where, however, he derived no benefit. He had lost much weight, and was entirely unable to follow his profession. Subsequent history: on examination considerable amount of thickening in left shoulder-joint and in right knee, with recurring pain described as "toothache" in the neck. Hyperæsthesia over all cranial superficial nerves. Mouth: small degree of rarefying osteitis in lower jaw, rather more in upper jaw; a good deal of alveolar thickening. Vaccine therapy. Cured.

CASE 17.—First noticed stiffness in 1908, became gradually worse. No pain except in right arm. In June, 1910, unable to walk. General wasting of muscles, right knee-joint particularly fixed. Hands and feet shrunken, with acute pain in affected muscles subsequently. Worse at night. Mouth: 15 septic roots, swollen and hypertrophied gum around them, no macroscopic pus, small quantity of pus found microscopically. Considerable hypertrophy, thickening of alveolar process in upper jaw. Vaccine therapy. No improvement.

CASE 18.—Pain in both knee-joints, occurring irregularly, and worse at night. Commenced after bad attack of fever, followed by blackwater, in Nigeria. From this time gums bled; constant bad taste in mouth. Latterly pain in left tendo Achillis. Slight œdema of knees, wrists, and shins. Mouth: gums swollen, partially detached from teeth, alveolus bare in places, considerable amount of pus. Vaccine therapy. Cured.

CASE 19.—Has had rheumatic gout for the last six years; has been treated at Bath regularly twice a year. First noticed loosened teeth a year previous to the rheumatoid symptoms. A good deal of swelling and thickening in both knees, crepitations left shoulder, slight ulnar deviation in left hand. Mouth: gums purple, nodular; has acute exacerbations of pain with swelling of alveolus. No pus formation. Considerable rarefaction of alveolus in upper jaw; in lower jaw some thickening. Roots of molar teeth almost denuded of attachment. Vaccine therapy. Relieved.

CASE 20.—Recurrent shivering fits, associated with acute aching in arms and legs; both knees swollen; left hip very painful; considerable limitation of movement. Latterly attacks have been more frequent; has been treated at Bath, Marienbad, Aix, and many other watering-places. Mouth: no suppuration; strongly marked alveolar thickening in upper and lower jaws; gums pale; wasting of os marginum. Vaccine therapy. Not improved.

CASE 21.—Hyperæsthesia and recurrent pain right arm and shoulder; ulnar displacement left hand; thickening of second phalangeal joint, left ring finger. Mouth: much pain in gums; two crowned teeth, both tender. No obvious pus around gum margins. Both crowns removed. Right upper molar large cavity in bone at root; tooth much thinned and periosteum hyperæmic. Thickened and sclerosed alveolus. Vaccine therapy. Cured.

CASE 22.—Swelling and chronic pain sometimes in both knees; creaking on movement; tender on pressure. Crepitations both elbows and shoulder-joints. Frequent rashes on thighs and chest appear and disappear quickly. Tingling and loss of sensation in arms. Mouth: chronic pyorrhœa, many years' duration. Considerable alveolar thickening; much loss of bone in lower jaw.

CASE 23.—Left lower maxilla, thickening and pain following suppuration around lower molar; lower molar removed. Subsequent necrosis, followed by operation. Recurrent swelling and pain; no fluctuation; no pus. Chronic swelling temporo-maxillary joint on same side; thickening of capsule; alteration of movement. Pain worse at night. Six months after suppuration and necrosis of the jaw had acute attack of pain in right knee, which subsided, but left creaking in the joint. Vaccine therapy. Cured.

CASE 24.—Early chronic arthritis, both knees; irregular swellings affecting joints of both hands; fusiform swelling, two fingers of left hand; right index finger extensor tendons swollen, painful; unable to wear rings. Severe left-sided trigeminal neuralgia, with ptosis on same side. Mouth: considerable loosening of majority of teeth; upper centrals very loose. Much pus. Vaccine therapy. Relieved.

CASE 25.—History of gout and rheumatism for several years. Occasional attacks of pain with swelling in the knee-joints; left knee slightly enlarged. Recurrent lumbago and irregular muscular pains. Symptoms of gastro-intestinal infection; acute eczema recurrent. Mouth: gums swollen, turgid, hyperæmic. Mucous membrane covered with white flakes of desquamation. Enlargement of lymphatic glands over submaxilla. Frontal headache. Vaccine therapy. Cured.

*Group B.*

CASE 26.—Diffuse muscular pains in shoulders and arms, irregular in onset, but leaving stiffness sufficient to prevent playing tennis. Recurrent stiffness and pain in lumbar region. Pain in right gluteal region and referred down sciatic nerve. Sciatic nerve not tender at foramen. Stiffness of calf muscles. Worse at night. Mouth: one-third of teeth lost through caries. Discharge of pus lower incisor

region, and molar region upper and lower right. No hypertrophy of gum. Sclerosis of alveolus, well-marked denudation between several teeth. Vaccine therapy. Cured.

CASE 27.—Diffuse muscular pains in shoulders and back, swelling of extensor tendons of left hand. Stiffness over both knee joints. Complains of recurrent rheumatism. Trigeminal neuralgia. Mouth: all teeth removed two years previously for pyorrhœa. Thickening of lymphatic channels both sides of neck. Slight thickening of lymphatic glands of posterior cervical triangle left side. Vaccine therapy. Cured.

CASE 28.—Suffered from muscular rheumatism for six years. Recurrent neuralgias, mostly trigeminal. Stiffness and pain at back of head, recurrent but with long intervals. No focal spots of neuralgia. At Woodhall Spa six years ago, suffered from rheumatism ever since. Mouth been treated for last ten years for discharge of pus. Considerable bony deficiencies in tooth sockets with rarefaction as well as sclerosis. Vaccine therapy. No improvement.

CASE 29.—Aged 18. History of recurring attacks of fainting from no particular cause. Much acne. Irregular, diffuse, rheumatic pains, often at night, occasionally leaving stiffness of shoulders and unable to take violent exercise after. Last attack had swelling of left hand and radius. Crepitation in right knee. Mouth: discharge of pus from sockets for several years; this despite all attempts at treatment. Five tooth sockets still suppurating. Vaccine therapy. Relieved.

CASE 30.—Pain in right shoulder last three or four years; unable to put on coat comfortably; keeps him awake at night. Suffers from recurrent vaso-motor spasm of feet, with subnormal temperature. Mouth: little pus; thickened alveolus showing much loss, particularly upper jaw. Most teeth extracted, remainder one only loose. Some rarefaction; alveolus mostly thickened and sclerosed. Vaccine therapy. Cured.

CASE 31.—Pain in joints fleeting, not persistent or resulting in changes. Fermentative gastritis. Neurasthenia. Mouth: thickened and sclerosed alveolus, œdema of gums, slight pus formation. Osteoporosis in molar region of upper jaw. Vaccine therapy. Relieved.

CASE 32.—Rheumatic pains in various parts of the body with occasional swellings of joints associated with fever, disappearing after short time and not leaving any joint deformity. Swelling of hands, also disappearing and leaving no thickening. Neuritis. Acute neuralgia, trigeminal, mostly first and second divisions. Rarefying osteitis with sclerosis. Suppuration slight, but definite pus formation. Vaccine therapy. Relieved.

CASE 33.—History of occasional rheumatic pain, diffuse, not very definite. Diffuse, rarefying osteitis of alveolus, left upper jaw; central, lateral, and canine entirely denuded of bone. Much pus formation, several other teeth in upper jaw also loose. Lower gums œdematous; alveolus thickened. During course of treatment for alveolar disease sudden onset of an attack of arthritis in left knee, no fluid in joint, swelling of the internal synovial membrane and capsule, creaking on passive movement, gradually disappearing without leaving deformity of joint.

CASE 34.—Irregular rheumatism generally in shoulders, occasionally in knee-joints, no swelling, and so long as he takes plenty of exercise has no return. Constant fermentative indigestion. Mouth: for three years has had well-marked suppuration along the gum margins. Large quantity of pus now found, a good deal of alveolar infection. Vaccine therapy. Cured.

CASE 35.—Vaso-motor spasm of hands preventing writing, together with tingling and occasional burning sensation in upper arm. Recurrent stiff necks, some fibrositis in deltoids and left angle of scapula, no swelling, no definite articular lesions. Mouth: has lost all molar and bicuspid teeth from pyorrhœa. At the present time lower centrals and upper centrals standing, much coated with deposit. Discharge of pus from inflamed and hypertrophied gums. Vaccine therapy. Relieved.

CASE 36.—Bilateral enlargement of first metatarsals of both feet. Neuritis left arm; anæmic. Good deal of neurasthenia. Mouth: copious discharge of pus, much rarefaction, but with sclerosis in several situations. Vaccine therapy. Relieved.

CASE 37.—Neuritis right hand, preceded by attacks of coldness. Always suffers from rheumatism when exposed to wet. Swelling, pain, and some thickening of left temporo-maxillary articulation. Teeth nearly all loose, for eight years progressing. Pus welling from all sockets. Very great hypertrophy of gums, blue and turgid. Rarefaction of alveolus of lower teeth, so far advanced that hypodermic needle might be passed between roots of lower teeth entirely through the jaw. Vaccine therapy. Cured.

CASE 38.—Slight arthritis of shoulder on left side and left knee. Vaso-motor spasms, particularly affecting face. Acute attack of rheumatic type, followed by anginal attacks and myocarditis. Intestinal indigestion. Mouth: acute paroxysmal pain of individual teeth. Sclerosis. All extracted teeth roots transparent. No suppuration, but extracted teeth highly inflamed periosteum. Vaccine therapy. Cured.

CASE 39.—Patient aged 18 years. Acute pain, temperature 104° F. Pain in all joints, so tender could not be touched. Quite well in a fortnight. For two years had alternations of general rheumatic pains with attacks in feet, hands, shoulders, or knee. Frequently attack in big toe. Harrogate, Marienbad, Buxton. Mouth: much hyperæmia of gum margin, particularly anterior portion of mouth. No pus. Rarefaction of alveolus. Vaccine therapy. Relieved.

CASE 40. Occasional rheumatic pains, no definite joint lesions. Mouth: has lost nearly all teeth from loosening. Has had acute exacerbations with pus formation in mouth after last three confinements. Two children both suffered from rheumatic fever. Vaccine therapy. Relieved.

CASE 41.—Had acute endocarditis when two years and three months old. Five to six months after brother had had similar disease with high temperature and heart infection. First attack corresponded to time his mother was suffering from acute pyorrhœa. Recurrrent attacks, fleeting pain in joints, præcordial pain, breathless. Mouth: present condition gingivitis with marked suppuration around several temporary teeth, mucosa of mouth generally inflamed. Vaccine therapy. Cured.

*Group C.*

CASE 42.—Patient aged 18 years. Irregular trigeminal neuralgia. Stiffness and pain left temporo-maxillary joint. Muscular cramps, irregular, at night on three occasions. Mouth: diffuse gingivitis with hypertrophy of gum. All teeth much discharge of pus. Trouble commencing after acute attack of measles. Vaccine therapy. Cured.

CASE 43.—Subsequent to an attack of influenza suffered from palpitation and diffuse muscular pains, aching in joints which persisted for six months. Temperature of 101° F. at intervals at night, lasting three or four months. Occasionally swelling and stiffness in hands and feet; right hand goes to sleep at times. Heart ringing first sound, slight roughness. Hæmoglobin 75 per cent. Mouth: has had bad taste in mouth ever since influenza, and has noticed recession, bleeding, and discharge from the gums. Well-marked infection of the alveolus in many situations. Few teeth loose. Vaccine therapy. Relieved.

CASE 44.—Recurrent attacks of sacro-iliac neuralgia, followed by stiffness in lumbar region. No history of generalised rheumatism. Mouth: lower central incisors loose, discharge of pus from upper and lower gums. Rarefaction of bone. Vaccine therapy. Cured.

CASE 45.—Patient aged 50 years. Recurrent attacks of asthma since 35 years of age. Attacks of colitis. Various operations for nasal polypi suppuration. Last four years emphysema, with occasional attacks of bronchitis. Recurrent lumbago. Intestinal indigestion. Occasional swelling of tendons of back of hand. Recurrent stiff neck. Mouth: takes great care. Little or no pus found, but well-marked interstitial deficiencies, thinning of bone, sclerosis of alveolus. Vaccine therapy. Relieved.

CASE 46.—Attacks of unaccountable sleeplessness, with sudden loss of sensation and feeling in one arm. Rheumatism which interferes with his golf. Mouth: suppuration acute left upper canine, most teeth lost through pyorrhœa, much shrinkage of alveolus, except where teeth are standing, where, particularly in the upper jaw, considerable thickening has taken place. Vaccine therapy. Cured.

CASE 47.—Irregular attacks of stiffness and pain in knees and right hip. Dyspepsia, three years' history. Mouth: acute suppuration in mouth. All teeth affected, gums swollen, œdematous, much wasting of alveolus, little or no thickening. Vaccine therapy. Cured.

CASE 48.—History of mild polyarthritis, many years' standing. At times knee-joint becomes swollen and tender; slight thickening right knee, some loss of movement. Mouth: much alveolar thickening, left side of upper jaw being at least twice the normal size. Suppuration around roots of upper molar teeth, much elongated. Rarefaction of bone around teeth. Vaccine therapy. Cured.

CASE 49.—Last three or four years has had irregular attacks of lumbago, with rheumatic pain in shoulders and down right arm. Occasionally swelling of fingers of right hand; no permanent enlargement of joints, but sometimes definite swelling which makes it difficult to wear her rings. Mouth: mouth and gums normal, with exception of right upper bicuspid tooth, which is dead, and from which a chronic sinus has existed for the last six years. Alveolus around this bicuspid tooth is thinned and almost entirely removed. Some deeper infection into the body of the jaw. Antrum not affected.

For the sake of brevity the section dealing with the bacteriology of the mouth is confined to the consideration of those cases in which animal experiments have been made. Animal experiments were made in respect of 17 of the cases: 8 in Group A, Nos. 2, 4, 14, 16, 17, 21, 24, and 25; 7 in Group B, Nos. 31, 32, 34, 35, 36, 38, and 40; 2 in Group C, Nos. 44 and 49. In all the 49 cases a bacteriological investigation was made and organisms similar in general characters to those described in Table II. were isolated. In addition to these cases giving a definite history, 12 non-rheumatic cases of rarefying alveolar osteitis were submitted to bacteriological examination, the streptobacillus isolated from them and used for animal experiments. The organisms obtained resembled those from the rheumatoid cases. The two groups of cases are indicated in Table III., cases from 50 onwards being those in which no rheumatic symptoms were observable. The bacteria isolated from the cases which were not suffering from arthritis or other rheumatic symptoms in several instances caused swellings and progressive changes when inoculated into the knee-joints of rabbits. I have also isolated the streptobacillus from cases of posterior rhinitis, chronic pharyngitis, quinsy, and disease of the antrum of Highmore. I have also isolated the streptobacillus from the urine of four cases in which it was present in the mouth. In my last 100 cases of mouth diseases examined bacteriologically of all varieties excepting dental caries I have met with it 65 times.

It will be seen from the notes of many of my cases that a considerable amount of crown and bridge work had been inserted in the unfortunate persons' mouths, and I cannot express too great a horror of that potent predisposing cause of infection of the jaws—namely, the ill-fitting, ill-adjusted, ill-conceived, and pernicious cap crown. To the objector who demurs to this condemnation I would only retort that it is a device which separates the normal gum edge from its attachment to the tooth, that rarely, if ever, fits closely to the contour of its encircled victim, but invariably projects in such a manner that débris of food is trapped under its rim and inevitably promotes ulceration, periosteal infection, and, sooner or later, rarefying osteitis and suppuration.

## TREATMENT.

The first suggestion that treatment of the mouth infection might also influence the arthritis was given by a case whose mouth was resplendent with gold crowns, Case No. 6. A bacteriological examination was made, the infecting organisms isolated, and an autogenous vaccine prepared.

Preliminary inoculations were given and all the worst and badly infected teeth removed. The vaccine was then given regularly, first at periods of ten days, then at fortnightly intervals for six months, and after that at intervals of six weeks for a year. The first inoculations were associated with exacerbation of the joint symptoms. The patient made a slow but steady recovery. The left knee-joint, which had undergone some bony change, has remained permanently thickened, particularly the outer margin of the head of the tibia, but the thickening of the tendon sheaths of the hands has disappeared, together with the joint swelling; the patient is able to walk without pain, and has so far recovered the use of his limbs that he was able so long ago as last September to mow his own grass plot. He has gained about 2 stones in weight, and has been able to return to his occupation. Four fresh vaccines were made during the period of treatment; the dose to commence with was 10,000,000, but the later doses were 150,000,000 to 200,000,000, on each occasion being the streptobacillus described above, the organism in this case being Nos. 125B and 237B on the list in Table II. The line of treatment of this case is that adopted as general routine. In nearly all of my early cases distinct increase of the arthritic pain and swelling was caused by the first inoculation; latterly the preliminary dose has been reduced to avoid this exacerbation.

Case No. 16 was another of the earlier cases, but in this instance the organisms were tested on mice, mainly for virulence, no intravenous or other inoculation having been made into rabbits; in fact, it was not until May of last year that I commenced direct inoculation into the knee-joints of animals. It will be seen on reference to this case that the amount of inflammation in the mouth itself was practically *nil*. The patient had, however, lost a number of his teeth, and those which remained showed a small but definite amount of rarefying osteitis in the lower jaw. There was also a considerable amount of alveolar thickening. There were no other obvious sources of infection, although careful search was made of all the orifices, and the bacteria were isolated and tested against the patient's blood. Resource was therefore had to immunisation by means of a vaccine prepared from the patient's mouth. Almost from the first inoculation a diminution took place in the slight degree of fever from which the patient constantly suffered, the temperature generally being raised to 100° at night. The inoculations were carried out regularly and progressive improvement took place. The specific treatment was also continued, as at one time some parietal thickening occurred which was thought to be of specific origin. The patient made a gradual but complete recovery, having lost all stiffness, all neuralgia, and, having regained his normal weight, has been enabled to return to his business; more important still, he is now able to play golf again without difficulty. The two mice inoculated with the patient's organisms recovered without any ill effects.

Case No. 3 was another in which a very slight amount of mouth infection was to be found. She had a history of indigestion, her throat was hyperæmic, there was occasional pain in the mouth and palate, and the latter showed slight ulceration behind the central upper incisors. There was slight but definite infection of the alveolar process, but without very careful examination this could not be detected, as to all appearances the patient's teeth and gums were normal; on careful examination with a thin platinum probe it was found that here and there the gums were detached and distinct loss of alveolar process in the interdental position had occurred. The streptobacillus was isolated from this patient, who received injections at weekly intervals, and latterly at more extended periods. At the first three injections increase of pain and swelling of the affected parts occurred. She was under treatment from May, 1910, to December of the same year. By this time all the swelling in the knee had entirely disappeared, the joint was quite normal, the patient had discarded not only her crutches and her stick, but was able to dance.

Case No. 23 is of interest because it was the only one in the whole series of 49 cases in which there was any suggestion of infection either in or in the neighbourhood of the temporo-maxillary articulation, and in this case the organisms found differed from those obtained from the majority of the cases. The organism from this case belonged to the type given at the head of Table II. in that the organisms produced no fermentation of carbohydrate. The swelling entirely disappeared after eight inoculations and has not returned.

Forty-five out of the 49 cases were treated with autogenous vaccines of the streptobacillus malæ, 21 in Group A, 16 in Group B, and 8 in Group C. Of these cases 23 have been cured, inasmuch as their arthritic symptoms have resolved sufficiently for them to go about their normal avocations; of these, 11 belonged to Group A, 7 to Group B, and 14 to Group C. Four cases in Group A and 1 in Group C refused treatment, and of the remaining cases 8 in Group A are still under treatment, 4 have shown marked improvement, and in 4 so far no improvement appears to have taken place, whilst 2 cases ceased treatment after a couple of months, having been in no way benefited, but in no case was the condition in any way aggravated. In Group B 7 cases are still under treatment and 2 were in no way benefited. In Group C 4 cases have been cured and the remainder are still under treatment.

TABLE IV.

| Cases treated. | Results of treatment. | | | |
|---|---|---|---|---|
| | Cured. | Relieved. | Still under treatment. | Not improved. |
| 45 | 23 | 14 | 6 | 4 |
| Group A, 21. | 11 | 7 | 4 | 2 |
| Group B, 16. | 7 | 7 | 2 | 2 |
| Group C, 8. | 5 | 3 | — | — |

The routine method of treatment which I have adopted in all these cases has been inoculation with autogenous streptobacillary vaccines, followed by attention to the local mouth infection. Where extraction was deemed necessary, and the question of extraction has generally been decided with the assistance of X ray photographs, preliminary immunisation of two or three doses of vaccine has always been undertaken before the removal of the infected tooth. I am of opinion that harm may result from the free removal of even loose teeth in sufferers from arthritis deformans unless preliminary treatment is adopted, and I have found, as a matter of practice, that increased local swelling and pain does occur in many instances in arthritis deformans after the removal of teeth, and may even follow an ordinary process of scaling tartar-coated teeth.

In conclusion, it must be understood that my contribution to the study of arthritis deformans coincident with alveolar osteitis does not seek to establish a specific organism as the etiological factor in *all* cases of rheumatoid arthritis, infective fibrositis, muscular rheumatism, &c., but that in diseases of the jaws, especially rarefying alveolar osteitis, a streptobacillus is present, pure cultivations of which inoculated into or around the knee-joints of rabbits have produced symptoms similar to and indistinguishable from arthritis deformans; that in such disease of the mouth and jaws the treatment of the disease locally and by means of autogenous vaccine prepared from the streptobacillus has been associated with amelioration and disappearance of the arthritic symptoms in a greater number of instances than can be ascribed to fortuitous coincidence.

A BRIGHTON WORKHOUSE SCHEME. — The Brighton board of guardians at its last meeting agreed in principle to the complete separation of the infirmary inmates from the workhouse inmates, a separation to be effected by the elimination of all the children from the workhouse and accommodating them at Warren Farm School, which is also under the jurisdiction of the guardians. This removal would provide the accommodation needed at that institution for the classification of the sick. The daily average number of inmates of the workhouse is 1350, of which number about 500 are maintained in the infirmary. The nursing staff numbers 40, comprising a superintendent-nurse, a night sister, 10 charge nurses, 11 staff nurses, 15 probationers, and 2 male nurses. The guardians were almost unanimous on the matter, 23 voting for the scheme and only 1 against. The vote was an endorsement of the view taken by the committee which considered the question that "in all probability the time is not far distant when Poor-law infirmaries of the size of that of Brighton will be under separate administration from the workhouse."

ABSTRACT OF

# The Lettsomian Lectures

ON

# OPERATIONS FOR STONE IN THE MALE BLADDER.

*Delivered before the Medical Society of London on Feb. 6th and 20th and March 6th, 1911,*

BY WILLIAM F. HASLAM, M.B. BIRM., F.R.C.S. ENG.,

SURGEON TO THE BIRMINGHAM GENERAL HOSPITAL.

## LECTURE III.[1]

*Delivered on March 6th.*

Mr. Haslam said that an attempt was made by Deschamps in 1796 to revive the Marian operation on modified lines by what he termed a "mixed method." This resembled the lateral operation in the external incisions and the Marian in dilatation of the prostate and neck of the bladder, and he says, "who knows but at some future time surgeons may not be tempted to return to this method?" In 1819 Sir Astley Cooper extracted a stone as large as a walnut by this mixed method; in 1830 it was advocated by Dr. Buchanan of Glasgow, and in 1842 it was again brought forward by Dr. Willis. It received the name of "lithectasy" and then was heard of no more. By this time the lateral operation was becoming firmly established, and in 1853 Coulson says: "The lateral operation is now universally adopted, not only in this but in all other countries, and hence we have *primâ facie* reason for concluding that as a general method it is the best." The rectangular staff of Buchanan was by some preferred to the ordinary curved staff as facilitating the opening of the urethra and the passage of the knife through the prostate, but this in no way modified the steps of the lateral operation nor was it at all widely used. The first idea of the bilateral operation appears to have been due to Le Dran, who, in performing the lateral operation, sometimes found his internal incision was not sufficiently free. He therefore divided the right side of the prostate as well as the left. Sir Astley Cooper and others adopted the same practice. These operations, however, resembled the bilateral method only so far as the double incision of the prostate. The bilateral operation as a definite procedure was finally established by Dupuytren in 1824, and was described by William Coulson in his work on lithotrity and lithotomy published in 1853. The quadrilateral method of M. Vidal de Casis was proposed in 1828. The first transverse incision was made as by Dupuytren, and then the prostate was divided in four directions, but the operation was never taken up. In 1824 Aston Key of Guy's Hospital published a short treatise on the section of the prostate gland in lithotomy with a safe and easy method of conducting the operation on the principles of Cheselden. He designed the staff to obviate the dangers attending the use of the gorget, and at the same time to adhere closely to the principles laid down by Cheselden in his second operation. The recto-vesical operation is said to have been performed by the Egyptian lithotomists from time immemorial, and was written about in the sixteenth century by a writer under the assumed name of Vegetius. It was described by Hoffmann in 1779 and by Martin in 1817. M. Sanson brought it before the notice of the profession in France in 1817. Sanson, however, soon gave up this method, and substituted for it the one practised by Vacca. The median operation was to some extent a modification of the Marian. A keen advocate of the median operation in this country was Allarton, who in 1854 published a work dealing with it under the title of "Lithotomy Simplified."

Concerning lithotrity the lecturer said that the occasional passage of a stone by the urethra must have suggested to the careful observer the possibility of dilating the urethra so as to facilitate the passage of a small stone, or to enable one to be seized with a suitable instrument and drawn through the urethra, or of being able to break up a stone, already too large to pass, into small fragments which could be voided with the urine. Indeed, the breaking of a large stone had been practised from time to time for many centuries, when it was found to be impossible to extract it through the incision made in the Celsian operation. The Egyptians practised the removal of small stones by dilating the urethra, and the same method was adopted by the Arabians. In THE LANCET for 1835, in the number for May 2nd, the position is summed up as follows: "So far as our own observations and inquiries have extended, we are inclined to believe that if lithotrity were to be taught generally in the schools, and brought into ordinary use amongst practitioners, the cutting operation for stone would in a few years become obsolete; because the facility with which small stones could be crushed, would leave no large calculi to require the use of the knife." No great advance was made until 1878, when Bigelow of Boston showed that it was possible to break up a stone so completely at one operation that all the fragments could be washed out through a large evacuator. With the establishment of Bigelow's operation surgeons were better enabled to consider the possibility of dealing with larger stones by crushing than was formerly the case. In skilled hands and with suitable instruments the operation is well adapted for almost any stone that may be met with. It is probable that lithotrity will never be so generally adopted in this country as in those where stone is common. There is no doubt that here the suprapubic operation is on the whole preferable. The operation of perineal lithotrity was first performed as a definite procedure by Dolbeau, a French surgeon, in 1862, and some years later was reintroduced by Mr. Reginald Harrison.

In order to ascertain what operations surgeons were performing for vesical calculus in this country certain questions were sent to surgeons attached to the larger hospitals. To the first question, What operation do you usually perform on the removal of a stone before the age of puberty?—there were 221 replies. From an analysis of these figures it is clear that the suprapublic operation is the one usually performed. Seven only refer to lithotrity as the method adopted, without any reference to the size of the stone or other circumstances. The others who perform lithotrity do so only after making choice of such cases as seem suitable, in their opinion, for the operation. The lateral operation as well as the median are still mentioned, though apparently are very seldom performed. To the second question, What operation do you usually perform for the removal of a stone from the male bladder after puberty when there is no evidence of prostatic enlargement?—there were 240 replies. These returns show that surgeons are prepared to consider the advisability of performing lithotrity in the adult more frequently than in boys, but the number of those who practise the suprapubic operation is in excess of those who use lithotrity, and it should be noted that of these a large number reserve it for small stones, doing the suprapubic operation for large ones. The third question, as to the treatment of stone when there is evidence of prostatic enlargement, elicited 224 replies as follows: For the treatment of stone in the presence of an enlarged prostate the suprapubic operation is, from these returns, the method adopted by almost all surgeons, only 16 out of 224 being prepared to discuss the desirability of attempting lithotrity under these conditions. The fourth question dealt with the treatment of the wound in cases of suprapubic lithotomy. There were 230 replies. The chief point of interest in this question is as to suture of the bladder and of the abdominal wall, and whether a drain is used or not. It is evident that there are few surgeons who venture to sew up the bladder and close the abdominal wound without some form of drainage, though there are many who will close the bladder and use a drain to it; while rather more than half the number prefer to use either partial suture or none at all. Such is the condition of practice for stone in this country at the present time, and though it is always uncertain what changes may take place in the future, it does not seem probable that there will be any great alteration in the immediate future. No doubt, under modern conditions, the lateral operation would yield good results so far as the mortality of the operation is concerned, if done by surgeons who had fairly frequent opportunities of performing it. But, in addition to those dangers which might be avoided by a skilled operator, there is the possible injury to the ejaculatory ducts, and consequent sterility, which is

[1] Abstracts of Lectures I. and II. were published in THE LANCET of Feb. 18th (p. 423) and 25th (p. 491), 1911, respectively.

beyond the control of the surgeon. There does not seem to be any real effort at the present time to displace the suprapubic operation by crushing, nor does it seem likely that any great improvement can be made in the details of the former, so that we may fairly regard the mode of treatment of to-day as likely to continue for some time.

# THE PRINCIPLES ON WHICH THE TREATMENT OF RESTING CONDITIONS OF THE SKELETON IS BASED.

BY W. ARBUTHNOT LANE, M.S. LOND., F.R.C.S. ENG.,

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IN 1886 I published in the Guy's Hospital Reports[1] a study of the causation of the deformities which develop in young life and attempted to place the treatment of these conditions upon some definite scientific basis. As more than 25 years have elapsed since I wrote that paper, which dealt very fully with the subject, I think it may be of some interest if I consider what changes have taken place in the interval. I purpose quoting from the commencement of that communication to show that the position as regards these deformities does not materially differ now from what it was then:—

> I propose to discuss the several deformities which arise during childhood, and I will attempt to consider more particularly their causation and pathology, for, after we have obtained a thoroughly clear idea of the manner in which such abnormal conditions are produced, and the relative importance of the several factors which may combine to determine their formation, we shall be able to compare the advantages presented by each of the many modes of treatment which have been suggested or practised by different surgeons, and to draw our own conclusions upon their relative merits. I hope to be able to throw some new light upon the manner in which many of these deformities arise, and will attempt to explain their causation upon a more scientific basis than that which is at present described in the works which I have read upon the subject.
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> Anyone who has patiently and thoughtfully plodded through much of the abundant literature on deformities cannot but be struck by the small proportion which the consideration of the causation and pathology of these conditions bears to that of the special form of treatment recommended. Perhaps much of this is due to the fact that to a very considerable extent the treatment of deformities has fallen into the hands of mechanicians, who are not guided in their practice by a very intimate knowledge of the several factors which determine the development and progress of these conditions and of the pathological changes which they present, but they are imbued rather with the idea that each deformity can only be treated by the application of some particular instrument or apparatus. I do not for a moment wish to depreciate the value of instrumental aid or of the assistance which a skilful mechanician can afford us; I wish rather to indicate that there are other factors which we cannot meet solely by the application of mechanical supports, and that in many cases we may, by relying too much upon appliances, aggravate instead of control the condition and progress of the deformity.
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> The tendency of the present day is to specialise and remove the subject of the treatment of deformities from the realm of general surgery rather than to elaborate our knowledge of the causation and pathology of deformities generally, and then to classify these facts under several heads and obtain from them general indications as to our treatment of them. There is also a strong inclination to account for the development of each deformity on some peculiar ground special to itself rather than to suppose that deformities acquired during growing life are due to the same causes modified by secondary circumstances, such as variations in the character of different joints as regards the mode of transmission of superjacent pressure, &c.
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> We find very eminent surgeons of world-wide reputation developing theories as to the mode of causation of the same deformity, which are often so completely contradictory that if one be true the other is necessarily false Yet each of these surgeons formulates a mechanical treatment based upon his theory, so that, if these treatments bear out the intentions of these surgeons, they must of necessity be also contradictory in their results.
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> In this branch of surgery, more frequently, perhaps, than in any other, the surgical pathologist has but too frequently mistaken the cause for the effect. Surgery differs from medicine in the following important particular. In the former a false hypothesis or theory frequently suggests a course of treatment based upon it, which may not only be not beneficial, but absolutely prejudicial to the patient, while in the latter the treatment carried out is usually quite independent of the almost innumerable theories of causation which are invented about every obscure medical disease. As an instance of this, take the disease diabetes. Therefore, it is of much importance, as regards treatment, that we should obtain as thorough and as complete a knowledge as possible of the factors which determine the development and progress of deformities, and of the influence exerted by each.

The only important thing I have learnt since I wrote that paper is that respiratory incapacity, as I termed it, or, in other words, an oxygenation of the blood sufficiently defective to prevent the individual from leading a vigorous active life, is not, as I believed then, the primary factor, since this defect in oxygenation is itself consequent on intestinal stasis.

By intestinal stasis I mean such a delay of the contents of the intestines in some portion of the gastro-intestinal tract, but more particularly in the large bowel, as allows of the absorption into the circulation of a larger quantity of toxic material than can be dealt with effectually. This delay results from a mechanical alteration in the normal arrangement of the drainage apparatus. In early life it is produced by an abnormal distension of the intestines consequent on too frequent feeding or by the use of articles of an unsuitable nature. Later it is brought about and accentuated by the erect posture of the trunk which is assumed from the time of getting up until going to bed.

Dr. Vaughan and Miss Wheeler have shown[2] that proteids can be split into a poisonous and non-poisonous portion, and that the deleterious component is a respiratory poison. It can produce acute, subacute, or chronic poisoning depending on the manner and rate of its introduction into the body. They also showed that animal albumin is more poisonous than vegetable albumin. It is upon this fact that the advantages of a vegetarian diet depend, while it also throws much light on what is called "dieting" by the physician and which has been arrived at somewhat empirically.

I would also call attention to some elaborate experiments performed by Dr. Turck of Chicago which bear in a very important manner upon intestinal stasis and consequent auto-intoxication. I have discussed this question fully in several papers.[3] The views of the profession have changed very rapidly on the importance of the subject of intestinal auto-intoxication produced by intestinal stasis since the discussion on constipation which took place at the meeting of the British Medical Association in London in July, 1910, which was so ably opened by Dr. J. F. Goodhart. It had become the fashion of the physician to cast ridicule on the influence exerted by intestinal auto-intoxication upon the individual, and that was the attitude of the opener of the debate and of the majority of the physicians who took part in it. Since that discussion, however, the views of the profession generally have undergone an abrupt change, and the recognition of the enormous influence for evil of intestinal stasis is beginning to impress itself upon their minds. I have introduced the subject here, as I wish to point out most clearly that the primary factor in the development of resting deformities, including the deformities of rickets, is auto-intoxication consequent upon an intestinal stasis, and that the respiratory incapacity which I originally regarded as the primary factor is merely a secondary one, but directly consequent on intestinal auto-intoxication. It is therefore the duty of the medical attendant in a case of resting deformity to deal effectually with the primary factor in the development of the trouble, having rendered himself thoroughly familiar with the symptoms that intestinal auto-intoxication produces in different individuals.

Before going into any detail I would put forward the following general principles which I have formulated and which bear upon the subject.

1. The skeleton represents the crystallisation of lines of force which when transmitted in one direction are laid down as compact tissue, when transmitted in varying directions as cancellous tissue. The arrangement of the cancelli is such as to transmit force applied in different directions to the best possible advantage. Any interference with the form of the skeleton, as by a fracture of a long bone, is followed by an attempt to lay down anew the lines of force, and in the very young subject the recrystallisation is complete, the old shaft being removed and replaced. The older the subject the more is this change limited to the locality of the fracture and the less complete is the restoration.

2. The rates of bone formation in the several portions of growing bones vary inversely as the amount of pressure sustained by them. A subnormal pressure means an abnormal amount of bone formation, while the exercise of a pressure in

[1] The Causation, Pathology, and Physiology of the Several Deformities which Develop during Young Life.

[2] The Effects of Egg White and its Split Products on Animals, The Journal of Infectious Diseases, vol. iv., No. 3, June 1907, pp. 476-508.

[3] Operative Treatment of Chronic Constipation, James Nisbet and Co., 1909; Chronic Intestinal Stasis, Surgery, Gynæcology, and Obstetrics, November, 1910; Civilisation in Relation to the Abdominal Viscera, with Remarks on the Corset, The Medical Publishing Company, 1909; The Kink of the Ileum in Intestinal Stasis, J. Nisbet and Co., 1910, &c.

excess of the normal results in the formation of a subnormal amount of bone.

In the child whose nutrition has been impaired by intestinal stasis and consequent auto-intoxication the amount of nutrition sufficient to produce normal bone is in abeyance. Consequently the bone is of subnormal density, while the periosteum and growing lines are abnormally active. The growing lines react much more markedly to pressure than do those of the normal subject. When this condition of the osseous system becomes a conspicuous feature it is called rickets.

In order that the skeleton shall remain normal it is necessary that it should perform certain attitudes of activity and certain attitudes of rest. For each joint, as for the body generally, there is an attitude of activity and an attitude of rest. The habitual assumption of an attitude of activity results in the first instance in the fixation of that attitude and later in its exaggeration. This can be demonstrated by an examination of the skeleton and soft parts of a man who has for many years been engaged in any laborious pursuit. I cannot illustrate this more clearly to you than by calling attention to the anatomy and physiology of the coal-trimmer and shoemaker, regarding which I published papers in 1887 and in 1888 respectively.[4] Those papers, with others dealing with the anatomy of other varieties of labourers, attracted a certain amount of interest at the time they were published, since they demonstrated evolution in a portion of a single lifetime. The several changes which the body underwent in these labourers were in response to these separate principles—namely: 1. Strain[5] tends to produce ossification along the direction in which it is exerted. 2. Pressure tends to produce destruction of the soft structures intervening between bones and definite changes in the form and density of bones. 3. Whenever it is to the advantage of the individual that an entirely new mechanism should develop independently of the exercise of pressure or strain such a formation tends to arise. In other words, the anatomy of the individual varies with his mechanical relationship to his surroundings.

All the changes which arise in the direction of the fixation and exaggeration of definite attitudes or sequences of attitudes of activity are with the view of reducing to a minimum the expenditure of nerve and muscle energy, and nothing is more striking than this economy as it is manifested by the labourer. Whereas in the adult labourer all the energy is devoted to the performance of a certain movement or sequence of movements in the most economical manner possible, so in the growing child whose store of energy is damped down and reduced by the presence of noxious material attitudes of activity are avoided, and instead the child assumes habitually attitudes of rest. These attitudes in the child, like those of activity in the adult, become fixed and later exaggerated. In the child besides the three laws already considered we have the changes which result from pressure or strain upon the growing lines, and these, again, are still further exaggerated in the imperfectly nourished thick growing lines of the so-called rachitic child. In them also the shafts of the long bones especially may bend for the same reason.

The most conspicuous feature in the child affected by intestinal auto-intoxication is the very defective manner in which the respiratory function is carried on. Since thoracic respiration demands a much greater expenditure of energy than does the diaphragmatic variety, the former is very distinctly in abeyance, and respiration is carried on rather rapidly and superficially by the diaphragm and abdominal muscles. The thorax is retained in a position of complete expiration. This attitude, which forms part of what I have called the symmetrical attitude of rest of the trunk, and is termed by the profession dorsal excurvation and by the public round shoulders, can be studied together with the several tendencies to change in a vertical antero-posterior section of a feeble old person in whom, for the same reason, respiration is carried on solely by the diaphragm. In this position the spine forms exaggerated curves in an antero-posterior plane and the length of the whole column is at its shortest. Should the same child assume habitually the normal asymmetrical attitude of rest of the body such as exists when "standing at ease," the pelvis is rotated around an antero-posterior axis, and the superjacent vertebræ deviate from the middle line so as to form curves in a transverse plane, each vertebra rotating around an oblique axis made up partly by the assumption of the asymmetrical attitude of rest of the trunk and partly by the inequality of the length of the lateral supports of the trunk. From the habitual assumption of this attitude to the exclusion of the corresponding attitudes of activity the typical scoliosis or lateral curvature of the spine results. From the type that arises in this manner there are variations owing to the varying factors or positions that may incline the pelvis, as riding on a side saddle, faulty sedentary attitude, &c.

Knock-knee results from the habitual assumption of the attitude of rest of the knee-joint. In this position the superjacent weight is transmitted through the knee-joint in such a manner that the anterior and outer quadrant of the epiphyseal line transmits an abormally great amount of weight, while the posterior and inner quadrant sustains a pressure less than normal. In consequence the external femoro-tibial angle becomes reduced, as also does the anterior femoro-tibial angle. The latter may be very marked when the backward displacement of the knee-joint is referred to as "back knee." These epiphyseal changes are exaggerated in the condition of auto-intoxication called rickets, in which the displacement of the knee is still further increased by the bowing of the shafts of the long bones in a plane which runs from before backwards and inwards.

Flat-foot is due to the habitual assumption of the attitude of rest of the foot, which later becomes fixed and then exaggerated. The position of rest of the foot is one of abduction, while that of activity is one of adduction. The coal-heaver who carries habitually a heavy load on his back has his foot fixed in the position of activity or of adduction. Similarly the child whose activity is depressed by a varying degree of auto-intoxication assumes the resting posture constantly and the condition develops.

When I first described the causation, &c., of flat-foot it was regarded as being due to the yielding of an elastic inferior calcaneo-scaphoid ligament. I was able to demonstrate that this was a totally wrong conception, and that the anatomy and physiology of the foot was quite different from that described in the text-books of surgery and anatomy. I am sorry to say that both surgeons and anatomists move slowly, and that they appear to have failed to grasp the importance of this subject. I do not propose discussing the details here, as I have nothing to add to that paper which is now a quarter of a century old.

I have here merely considered the general principles which must influence the surgeon in his treatment of the condition. The details of treatment follow naturally on those lines.

Cavendish-square, W.

[4] A Remarkable Example of the Manner in which Pressure Changes in the Skeleton may Reveal the Labour History of the Individual, Journal of Anatomy and Physiology, April, 1887; The Anatomy and Physiology of the Shoemaker, Ibid., July, 1888.

[5] The Result Produced upon the Muscles, Bones, and Ligaments by the Habitual Exercise of Excessive Strain, Brit. Med. Jour., Dec. 1st, 1888.

# THE EDUCATION OF THE DEAF:

## ITS PRESENT STATE IN ENGLAND, WITH SUGGESTIONS AS TO ITS FUTURE MODIFICATIONS AND DEVELOPMENT.

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### III.[1]—THE AGE AT WHICH EDUCATION SHOULD COMMENCE. THE APPLICATION OF EUGENICS TO DEAF-MUTISM.

IN this, the concluding article, I shall deal with the second need postulated in the introduction, "the education of the congenitally deaf and of those very deaf children who, by reason of the early age at which they acquired their deafness, have not developed speech, to be commenced at a much earlier age than is now the general rule, in order to give them that physiological, in contradistinction to pedagogical, training to which they have as much right as the normal hearing child."

As in discussing classification, so I shall first review very

[1] Articles I. and II. were published in THE LANCET of Feb 25th (p. 495) and March 4th (p. 574) respectively.

briefly the courses followed in different countries, and, in comparing the education of the normal with the deaf child, offer certain observations which seem to me to give strong physiological reasons for commencing the education of the very deaf at a much earlier age than has hitherto been considered advisable, using the term "education" in its physiological rather than in its pedagogical sense.

According to Bélanger[2] it appears that in France the age of admission to the schools varies considerably, and the general tendency is to reduce it. Although some pupils commence at six years, and sometimes earlier, circumstances seldom allow them to enter the schools before 11 or 12 years of age.

In Italy the want of legislation appears to make the age of entry, into the few charitable schools for the deaf that exist, uncertain.

In Germany the children attend compulsorily from the age of 6 to 14 years. In Denmark instruction commences at 8 years; in Holland at about 7 years, under certain circumstances even a little earlier.

In the British Islands the majority of children commence at about 7 years, but in some schools they are received at 5 years. In England it is compulsory that all deaf children should begin their education at 7 years of age, but a Government grant can be obtained for them if they enter at 5 years. In the Irish schools mentioned in the first article the general age of admission appears to be 8 years.

In the United States, as was the case with classification, a somewhat better condition of things exists. Few schools, it is true, receive children earlier than seven years of age, but there are pupils in the Pennsylvania Institution for the Deaf and Dumb one year younger. There is, however, a tendency in America, not only to keep the deaf child at school later in life, but—and this is of great importance—to take him in hand very early. This is done at Boston, under Miss Fuller; at Chicago, under Miss McCowan; and at Bala (near Philadelphia), under Miss Garrett. The last-named institution, taking children at 4, 3, or even 2 years, claims that they can enter ordinary hearing schools six or eight years later. The tenth report of this "Home for the Training in Speech of Deaf Children before they are of School Age" for 1910 states that the aim of its trustees is "to surround young deaf children with the same uninterrupted condition for acquiring articulate speech and language with which all hearing children are surrounded, the difference being that sight instead of hearing is the medium used. The use of either natural signs, arbitrary signs, or the manual alphabet is strictly prohibited." It now contains 65 children, and the success of this excellent institution is undoubtedly very great. It is well spoken of by Dr. Kerr Love and Mr. F. G. Barnes, both of whom have visited it, although I understand that both these gentlemen doubt the wisdom of passing on such seriously handicapped children to ordinary hearing schools.

I have no desire to express any opinion as to the wisdom of taking children early for oral training with the intention of transferring them later to hearing schools, because I have no practical knowledge thereof, and do not care to form any judgment thereon from printed reports or from hearsay evidence. But I do believe that the practice, which appears universal, of making no effort for compulsory oral training before six years or even later, is a grave mistake, and a potent cause of failure in the oral training of the deaf.

This view I shall endeavour to substantiate to the best of my ability, and, to do so, the physiological education of the normal must be compared with that of the deaf child. The development of speech has been admirably described by Dr. John Wyllie,[3] whose dissertation should be read by every person interested in the matter, and especially by every teacher and every parent, actual or expectant, and to whom I would refer the reader for details. By the end of the second year of his age a normal-hearing child has already some understanding of words spoken, together with a vocabulary of words of his own invention and a limited production of intelligent speech. He is able to say short baby sentences of two or three words. Between the ages of two and seven the hearing child is rapidly developing, whilst his unfortunate deaf brother is at a standstill. The former is receiving items of education every minute of his waking life, through the channels afforded by his organs of hearing, so that not only are speech and language being continuously impressed upon his cerebral cortical centres, but they are, by ceaseless reiteration, becoming stored up both as sensory and motor memories. This ceaseless reiteration is a highly important factor, for it goes to make speech perception and speech production automatic, and is practically absent in the deaf child. By this constant repetition, and by the intimate relation between the language-appreciating centres and the language-producing centres speech becomes automatic before the education begins of those centres which are concerned with writing and more difficult language training, centres which are of later development in the history of the race than are those of mere speech, and are preceded in the normal child by a pre-speech era of gesture language. It is a well-known axiom that as the pre-natal development of the child is an epitome of the phases of his evolution from the unicellular ancestor, so is his post-natal development an epitome of the evolution of his race from barbarous savage to civilised man. Gesture, sign language, inarticulate vocal cries, and the crude and poorly developed thought which accompanies those simple attempts at expression are all seen in the normal child until he attains to primitive and later to more perfected speech—"the silver bridge over which the thought of man has come to travel."[4] It is this pre-speech era of gesture language which becomes more fixed (probably because it is older in the racial history and, therefore, more easily used) in the deaf child to the detriment of oral training, and it is for this reason, joined to his strong faculty of imitation, that deaf children are so prone to revert to signs if allowed to associate with oral failures. The fact of automatic speech is of enormous importance to the normal child, especially because it commences to develop early, and I believe that by training the speech centres in the deaf at an earlier age we might help them at least to approach the automatism of speech of the hearing child.

The inestimable value of hearing in the physiological education of the speech-centres in the normal child is strikingly demonstrated when we compare the blind with the deaf. Although the former defect receives considerably more sentimental sympathy from the casual observer than does the latter, the blind child has infinitely less difficulties in education. It is true that one of the main entrances of instruction is closed for him, but it is one by which general effects rather than exact thought impressions reach his brain. So long as he has hearing his speech progresses with practically the same rapidity as the normal child, and in consequence his intellectual development proceeds at a nearly equal rate. The congenitally deaf child obtains his general effects through his visual organs, but, by reason of his aural defect, he can neither obtain expressions of exact thought nor formulate his own thought in exact terms. Consequently his school life begins at *seven* in the intellectual condition of a child of *two*. To put it plainly, for five precious years his intellectual development is arrested, and this is, as Kerr Love points out,[5] physically expressed by his relatively smaller head.

But there is yet another very important fact to be taken into serious consideration—the question of *hereditary tendencies to speech*. We represent the at present "last word" of a long line of speaking ancestors—a line so long that the first members thereof who could speak must have existed untold ages back in the world's history. We cannot tell at what precise epoch the first glimmerings of primitive speech made their appearance, but I do not think it would be a very preposterous suggestion to say that *Pithecanthropus erectus*, whose remains bring us to the first dawn of man in Pliocene times, must have possessed the rudiments of speech. The cranial capacity of this fossil is absolutely greater by about 250 c.c. (or over 30 per cent.) than that of the largest skull of the Simiidae, being 855 c.c., the associated brain weight being estimated at 750 gm.[6] The evolution which must have gone on without interruption since the first appearances of primitive man—a period which can hardly be estimated in years—has

[2] Report of the International Conference on the Education of the Deaf, held in Edinburgh, 1907, p. 51.

[3] The Disorders of Speech, Edinburgh, p. 87.

[4] Kerr Love: The Deaf Child from the Viewpoint of the Physician and the Teacher, The Teacher of the Deaf, vol. ix., p. 7.

[5] Deaf-Mutism, Kerr Love and Addison, Glasgow, 1896, p. 17.

[6] Morphology and Anthropology, W. L. H. Duckworth, Cambridge, 1904, p. 541.

slowly elaborated those portions of the central nervous system concerned with speech from the very beginnings of our remote ancestry, and the power of developing similar structural connexions of nerve cells and fibres has been handed down through countless generations and rendered more and more perfect by each, until we have been born with a potentiality for developing as complex and perfect nervous arrangements as those of any individual who has preceded us. It is thus that the centre for speech has been made more apt for expressing exact thought, and this was strikingly evidenced when Helen Keller made the demand "I must speak," a demand which also demonstrated that, not only is there a hereditary tendency to speak, but also a hereditary tendency to develop the general faculties *through* and *by* speech. It was when her centre for speech, with its æons of hereditary tendencies, was allowed to come into play that Helen Keller felt that she was in a new world, and said "My soul, conscious of new strength, came out of bondage, and was reaching through these broken syllables to all knowledge and faith."

In furtherance of this contention, I would like to quote a paragraph from the tenth report of the trustees of the Philadelphia Home founded by the Misses Garrett (p. 3):—

> They [the pupils in the Home] have the same hereditary tendency to talk as hearing children, and even though they may have deaf parents and other deaf ancestors, we know that reaching back to the time of Charlemagne we all had billions of hearing ancestors. *There is no exception to the fact* that every one of them shows a varying degree of desire to use its voice in efforts to articulate from infancy, *as hearing infants do.*—[The italics are mine.—M.Y.]—We believe that every deaf child's imitative powers and its hereditary tendency to talk should be met by the encouragement and aid which is given to the hearing infant's initial efforts. As stated by Sir James Crichton-Browne, "the cerebral centres presiding over the movements of the vocal apparatus—that is to say, the larynx, tongue, lips, &c., are placed in the brain anterior to those which preside over the movements of the hand, arm, and shoulder, and are probably, therefore, in more intimate connexion and communication with what we regard as strictly intellectual centres."

Are we not neglecting an obvious duty as well as opportunities of great value when we take no heed of these hereditary tendencies? We ignore them whilst the deaf-born brain is plastic, suffering them to remain dormant and to perish from inanition. Are they not equally as precious as the "residual speech" we seek to foster in the child who has become deaf after speech has been partially acquired, or as valuable as any residual hearing in the semi-deaf?

It is upon these arguments that I base my contention that the education of the deaf should be made compulsory at a much earlier period than is at present the custom. But any attempt to further this contention is not without opposition, although I believe that this opposition is becoming smaller and less potent every year. At a Council of (British) Head Masters held in 1904, it was resolved to be desirable that deaf children should be placed under proper training at or near the age of five years, and the Norwich Conference of the (British) National Association of Teachers of the Deaf in 1905 further resolved that this earlier education should be made compulsory. A protest from certain teachers elicited an eloquent and convincing rejoinder from Mr. Arthur J. Story, in which his conclusions so thoroughly coincide with my own that I venture to call them to my support for compulsory training at an earlier age. Recently the Council of Head Teachers of Day Schools for the Deaf unanimously resolved "that steps should be taken to lower the compulsory age for attendance at school from seven to five years,"[7] and the mover of the resolution remarked that he would have liked to have inserted that grant be payable on deaf children over three attending school. This shows that the importance of early training is recognised by teachers themselves. My arguments may be summarised as follows:—

1. The child who is normal, save for his deafness, is engaged in a continual struggle to make himself understood and to understand those about him; but unlike the hearing child, his natural yearnings—including his hereditary tendencies to speak—have to go unsatisfied. The deaf child finds some form of expression essential and endeavours to evolve one which can act as a vehicle of thought. Without oral speech, he has to elaborate that gesture language which I have already mentioned as belonging to the pre-speech era and, thus suppressing the play of hereditary speech tendencies, substitutes gesture for speech, a substitution which renders the later acquisition of speech more and more difficult as time goes on. Even if the earlier speech training which I advocate did not completely obviate this expression by gesture (and I believe that it would very largely do so), we should at least give the child the opportunity of becoming bi-lingual, thinking simultaneously in elementary speech and signs.

2. The hearing child develops intellectually without any special care, and he physically outgrows his infancy at about five years of age. Why, when it is in our power to make him early aware of speech as a means of intercourse and for the expression of his ideas, should we prolong this mental babyhood beyond that of the hearing child by denying to him an earlier training? Why should he be forced to remain infantile in mind and be denied the means of mental development?

3. The plastic brain period of the child is past at seven years, and to delay physiological education until that time may be compared to an attempt to model clay that has been allowed to become dry, save that the clay can be wetted anew, whilst the brain-clay of the child is past moistening. Moreover, the muscles which control the speech-organs become to some extent atrophic from disuse if not developed, a circumstance which cannot fail to react disadvantageously upon the speech-centres. "Is it not necessary," asks Bélanger,[8] "to use the larynx as soon as possible? That delicate organ which ought to be the pivot of our method of instruction?" The bad effects of this neglect of the speech-organs under our present methods of oral instruction when the plastic period is past are plainly shown by the artificiality and limited or absent automatism of speech taught when the vocal organs have been for years in comparative idleness.

4. The importance of "residual speech" is universally recognised, and often, if one comments upon the good articulation and intonation of a scholar in a deaf school, one is told "Oh! that case has residual speech." Indeed, one soon becomes able to pick out the children who started with this advantage. These speech remains can be easily and irrevocably lost by neglect. Why should we not recognise the equal value of the hereditary tendencies to speech and to develop the faculties of intelligence through speech, assets which are probably more quickly perishable?

5. It is acknowledged by law and practice that hearing children should begin their pedagogical education at five years. Why should not an equal right be accorded to the deaf? The normal deaf child is not an idiot, an imbecile, or mentally defective; he is no more defective than his normal blind fellow, but, like him, merely suffers from the loss of a valuable sense organ, but, unlike him, it is one the defect of which cuts him off from the most precious of human possessions, the ability freely to exchange thoughts and ideas with his fellows. The hearing child, even when he is blind, is receiving what I have termed "physiological" education at a much earlier age, and I claim that the deaf child has an equal right to this early physiological education, and, as it requires to be carried out by those who are experienced in deaf teaching, it should be provided for by law. The deaf child, of all classes of children, can least afford to lose the full advantage of his most impressionable years, and these years are, physically and physiologically, the most appropriate for the commencement of suitable instruction. I may point out that it is compulsory for the blind child, who has so much advantage over the deaf child, to attend school at five years.

6. It is possible that, by means of this earlier training, the automatic speech attained to by hearing children might be at least partly acquired by the deaf. This automatism, which is really only the outcome of almost ceaseless practice, would be materially assisted by the "synthetic" lip-reading which must be developed in any form of oral teaching. To lip-read with facility requires practice, and the earlier this practice is called into regular use the quicker and more certain it is liable to become. Such facility in lip-reading gives the child command of a means of acquiring new language by sight, a method second only in usefulness to hearing.

Although I am not wholly inclined to the belief that sight can ever be made completely to supplant hearing, I do believe that, by special direction and assistance at a sufficiently early age, the visual centre might be made a very good working substitute for the auditory centre as a stimulus

[7] The Teacher of the Deaf, vol. viii., p. 162.

[8] Loc. cit., p. 52.

for the speech centres. It could, I am sure, be made a centre for the appreciation of language, which would act in relation with that for the production of language.

It scarcely comes within my province to speak of the method by which this earlier physiological training should be carried out, but I am inclined to the opinion that it should be of the nature of kindergarten classes, under experienced teachers of the deaf. These should use elementary articulation lessons calculated to encourage deaf children from the age of three years to chatter at their play, to encourage baby prattle about games, toys, and similar matters of infantile interest. Set lessons during the physiological stage of the deaf child's training should be conspicuous by their entire absence; they should be banished rigidly until the child enters, with some elementary language which he can express orally with a certain ease, upon the pedagogical stage. During this physiological, kindergarten stage of instruction special attention should be paid to language forms which are most easily lip-read and imitated, always remembering that easy articulation should be used most freely. Unless the terms and phrases most easy of articulation and most easily understood by the child are made the dominant feature of the teaching there would be a danger of laying a foundation of bad articulation, a danger which would neutralise part of the good accruing from this proposed early teaching. I would emphasise the paramount necessity of employing only teachers of proved experience, teachers able to judge the necessities of the child, able to enter into his mental processes—in other words, to see with his eyes—and able thoroughly to *interest* him and to make him realise the value of spoken language as a method of communication. The words and phrases which could be grasped synthetically and reproduced with a fair amount of accuracy would come first, the difficult "elements" taught by articulation lessons being gradually led up to and introduced.

If there is any possibility of the visual centre being trained to take up the duties of the auditory centre as a stimulus to those presiding over speech, this early physiological course would take full advantage of it, and would train the child into a *habit* of using his eyes in place of his ears. The possible danger of laying a foundation of bad articulation could be obviated by the experienced teacher, and the chief aim should be to obtain a facility and fluency of speech which would prevent that artificiality so often complained of as characteristic of speech in the deaf.

It must be remembered that this early training of the deaf was approved of in the United States, by the House of Representatives in Pennsylvania, as long ago as 1891. In the discussion upon the Bill then passed, a member of the House made the astonishing statement that it would injure little deaf children mentally and physically to be taught to speak before they were of school age. It would be equally logical to say that such teaching similarly injures the normal-hearing child. The extraordinary folly of this remarkable assertion is amply demonstrated by a perusal of the reports of the Garrett Home and of the opinions of those who have visited it. Something has already been done in the cause of early training in London, and I would point out the encouragement afforded by the following paragraph in the annual report for 1909 of the school in Fitzroy-square:—

> A preparatory or kindergarten class has been opened in the schoo for young children, and the character of the work which has been accomplished fully justifies the innovation and strengthens the belief that it serves a distinctly valuable purpose.

In one of our London County Council Deaf Centres is a child, now aged 5 years. She was admitted at the age of 3½ years, and is a congenital total deaf-mute. During her first term she did not appear to be learning much speech or figures, but she showed great imitation. She wrote with chalk on the blackboard and on brown-paper forms of parts of letters, &c., and imitated the motions of the mouth. She threaded beads, sewed embroidery cards, played games, and imitated the actions of older children. In her second term she learned some sounds and spoke them, and was keenly interested in kindergarten occupations. During her third term she acquired a vocabulary of six words, could speak long vowels and nearly all the consonants. When in her fourth term she attained the age of five years and can lip-read well. She knows all sounds and combinations of Stage I., written and oral, and has a vocabulary of 38 words and 18 actions. In language she can answer orally such questions as "What have you?" "What colour is the ——?" and knows the colours blue, black, yellow, and white, naming them correctly. She can knit, sew on canvas, and do the usual kindergarten occupations. She talks a great deal[9] and lip-reads well in class. Her synthetic lip-reading for orders is good. She is bright and happy in school, is seldom absent, and is trying for a medal. She has half an hour's walk to the train by which she travels to and fro, and her parents affirm that they have never regretted sending her to school at such an early age. This child of 5 is, therefore, at the stage which, under the present system, is only attained by children who have entered at 7 when they are past, or well on towards, 9. If so much can be done for a normal totally deaf child in the ordinary classes of a deaf school, what could not be achieved in a special class such as I have suggested? Another case, a boy, a congenital deaf-mute, concerning whom his parents consulted me in May, 1907, when he was 3½ years old, was admitted at my special request by the late Mr. William van Praagh to Fitzroy-square. His success has been quite equal to that just related, to the great satisfaction of his parents.

I have mentioned these two cases as practical illustrations in favour of early education and to avoid the adverse criticism that may be raised by a certain section of educationists as to the advisability of placing a deaf child at a special school at so young an age. I would point out, if I am accused of a desire to drag children of tender years from the care of their parents, that the physiological education of the deaf pre-eminently necessitates a special teacher, and that no parent, however willing and well-intentioned, can carry it out unless he is himself an experienced teacher of the deaf. I believe that the object which I advocate could be attained by short school hours with plenty of play—play being, indeed, itself a means of teaching—upon, say, five half-days a week, the child being absent from home only during those times. Parents would soon become impressed with the advantages that their children were receiving, and could help the teachers by home influences. Indeed, not only have the parents of the two children just cited expressed their lively appreciation of, and satisfaction at, the results obtained, but other mothers and fathers have stated to me that they were wishful for such an arrangement for early training.

I believe that, under such circumstances, whilst brain and larynx are more plastic than at seven, or even five, the speech centres could be stimulated to better development, and that the hereditary tendency to speak could be preserved, encouraged, and fully utilised, so that some degree of automatic speech could be made possible. Surely such a course would greatly increase oral successes both in number and degree, give fewer oral failures, lead to further improvements in classification, emphasise individuality, make the deaf child more nearly approach to the normal child at seven years, and enable us to distinguish earlier the mentally deficient and the mentally deficient deaf. I need scarcely say that this applies equally to those cases of acquired deafness who, having lost their hearing at two years and onwards become, under existing conditions, mute before seven years.

I have now dealt briefly with all the present needs, which would go to make a better system of educational treatment for the deaf, postulated in my first article, save one. This was the need of endeavour to diminish the number of deaf children requiring special education by the application of eugenic principles to deaf-mutism in the case of the congenitally deaf, and by a better care of the ears in children by medical practitioners. The latter has already been discussed to an extent sufficient for the present needs of these articles. The former I have gone into at some length in a paper read before the Eugenics Education Society last year.[10] This paper was based upon facts gathered from the examination of 691 deaf children of both sexes in the London County Council's schools, of whom 407 had acquired their deafness after birth, or whose condition was doubtful in origin, and 284 were undoubted congenital cases.

The difficulties which stand in the way of obtaining accurate information and adequate family histories in cases of congenital deafness are very great, especially among the class from which these children are drawn. Very few

[9] She early began to try to talk, evidence of her hereditary tendency to do so, a tendency which, I venture to believe, has been awakened and developed by her early training in oralism.

[10] Eugenics and Deaf-mutism, Eugenics Review, January, 1911.

parents know their family histories, medically speaking, beyond those of their own immediate progenitors, and their knowledge of the collateral branches of their families—a matter of the highest importance—is even less. The difficulties are, if anything, greater in dealing with families having the taint of insanity or alcohol, although the sojourn of some member in a lunatic asylum is sometimes regarded as a sort of family distinction, a matter, maybe, for congratulation. A similar feeling is sometimes met with in regard to deaf-mutism, as is exemplified by a proud father, who greeted me with the words "We've four generations of born-deafers, and all on the missus's side!"

It is impossible to enter into any detail here of the results of this small investigation into the histories of the 691 children dealt with, but I will give some of the figures obtained, referring the reader to the original paper for further information. Out of the 284 congenital deaf-mutes, in 43 cases, or 15·4 per cent. of the whole, no family histories of any kind were obtainable, and in 132 cases, or 42·9 per cent. of the whole, there was no history of deafness or of any fact of importance which might bear upon the cause of the defect. In 13 families, or 4·5 per cent. of the whole, whilst there were no ascertainable data regarding the presence of other deaf-mutes, there were histories of neurosis or of alcohol. In one of these cases, both paternal grandparents died from "paralysis," the father was mentally defective, one paternal uncle suffered from "fits," and one paternal aunt died from phthisis; the case himself was congenitally deaf and mentally defective and he had a mentally defective brother. Another family, of which the mother was alcoholic, comprised one boy congenitally deaf, one boy an idiot, one boy with hydrocephalus, and a pair of twins, one of whom died from "fits," the other from neglect. In 89 families, or 31·6 per cent. of the whole, there was a family history of deafness, acquired only in ten of these. The elimination of these ten cases left 79 families (24·5 per cent.) with histories of congenital deafness, distinct from those in which there was consanguinity. I have no doubt that there would be found many more families with a history of congenital deaf-mutism among the 284 children born deaf, were it possible to get at the truth with more precision. Consanguinity was noted in 14 families, or 4·9 per cent., and of these the parents were first cousins in nine cases, second cousins in one case, whilst in four cases the degree of cousinship was not ascertained. As a contrast to these cases, consanguinity was present in only three cases (0·7 per cent.) out of the 407 children whose deafness was definitely known to be acquired after birth or to be doubtful in origin. The number of congenitally deaf in each family was ascertained to be: one in 40, two in 18, three in 16, four in 4, and five in 1 family.

According to the table published by Holger Mygind,[11] drawn from statistics of 7063 deaf-mutes from Nassau, Cologne, Magdeburg, Denmark, Saxony, Ireland, and Mecklenburg, about 15 per cent. of the marriages which result in deaf-mute offspring produce two or more deaf-mute children. Probably the percentage, could very accurate statistics be obtained, would be found to be greater, for it is only right to mention that in Mygind's table many of his statistics include deaf-mutes in general and not congenital cases in particular. Only his Irish statistics refer solely to congenital cases, and in these out of 3045 marriages 2506 produced one case each, 324 produced two, 149 three, 38 four, 22 five, 5 six, and 1 the enormous number of ten deaf-born children. The percentage of marriages in Ireland (taken in 1881) resulting in more than one deaf-mute was, therefore, 20·9.

It will be of advantage to sketch very briefly the present state of our knowledge as to the influence of the two factors, heredity and consanguinity, which occur with sufficient frequency in the histories of those born deaf to warrant their being regarded as effective causes of congenital deafness. The opinions expressed as to the value of these two factors have differed widely from that of Kramer, who made the somewhat dogmatic statement that "deaf-mutism is not a hereditary disease,"[12] to that of Wilde, who was the first to lay stress upon the opposite view. To reach the truth of the matter, one must look at the idea of heredity from a wider standpoint than that of mere direct transmission and consider not the direct ancestry, but the collateral family tree. The matter is expressed so well by Kerr Love in his work on "Deaf-Mutism" (p. 101) that I may be excused for making a somewhat lengthy quotation from him.

> It is not enough to seek for the cause of congenital deafness only in the parents of the affected child. These may hear or be deaf, but that single fact teaches little. Indeed, in the first generation the tendencies of two congenitally deaf parents may so counteract each other that the result is a hearing child; but reversion will ultimately assert itself. The second generation will probably follow the grandfather or grandmother with greater faithfulness, and a deaf grandson will result, or the characters of a prepotent progenitor separated by many generations may crop up, and an unlooked-for outbreak of deafness may take place. In calculating, therefore, the chances of deafness in a family in which it is feared, our view must not only include the immediate progenitors, but the whole family antecedents on both father's and mother's side. This statement is of practical importance; it takes all, or nearly all, the value out of the proposal to prohibit the intermarriage of the congenitally deaf, for, as has been shown, the hearing members of a deaf-mute connexion send down the tendency to deafness with as great certainty as the deaf members.

Congenital deafness is less frequent in the direct ascending line (grandparents and parents); more frequent in the collateral branches (great-uncles and great-aunts, uncles and aunts, grandparents' cousins, parents' cousins, cousins and second cousins); and most frequent among the brothers and sisters of the deaf-mute. Mygind points out[13] that, out of 553 deaf-mutes, of which 226 were congenital, in Denmark, 110, or about one-fifth, had one or more congenitally deaf brothers and sisters, but only 37, or about one-fifteenth, had one or more deaf-and-dumb relations in more remote degrees. That is to say, there was one deaf-mute relative, not including parents, brothers, and sisters, to every sixteenth deaf-mute. Those who hold the opinion that congenital deafness is not hereditary cannot say that the defect is as common amongst the relatives of normal people.

The factors which may influence the heredity of deaf-mutism are just as variable as in the case of other abnormalities. The special character of the parent may be present in only a few of the offspring, or an entire generation may be unaffected. I am not aware that Mendelian principles have as yet been applied to congenital deafness, and the difficulty of obtaining sufficient data for practical use in this regard is very great.

Consanguinity of parents, like heredity, has given rise to much dispute. Some consider that such marriages are harmless, taking as their point the beneficial results of in-breeding in domestic animals. Without entering into details it may be pointed out that the conditions are not similar, for with the artificial selective breeding of animals only perfect specimens are admissible, whereas it is notorious that no such precautions are taken in the consanguineous marriages of man. Mitchell[14] found that in 400 deaf-mutes 1 in every 16 had parents who were blood relations,[15] whereas the proportion of cousin marriages in Great Britain is probably about 1 in 60 or 70. In Denmark, according to Mygind,[16] the proportion of cousin marriages is about 3 to 4 per cent. of all marriages, but 6·75 per cent. of the deaf-mutes admitted to the Royal Deaf and Dumb Institution in Copenhagen were the result of such marriages. A fact which bears upon this question is the proportion of deaf-mutes amongst different religious sects having different marriage customs. Congenital deafness is much more common amongst Jews than amongst Protestants and Roman Catholics, and it is more common amongst Protestants than amongst Roman Catholics. Now Jews intermarry largely, whilst Roman Catholics discourage cousin marriages, and Protestants permit such unions.

A monumental piece of work upon the question of the causes underlying congenital deaf-mutism is that by Fay,[17] which contains exhaustive statistics of 4471 such marriages. These statistics show that marriages of the deaf are somewhat but not very much less productive than ordinary marriages, and that the marriage of deaf persons (taken as a whole without regard to the character of their deafness) in which one or both partners are deaf are far more liable to result in deaf offspring than marriages in which both partners are hearing. A chapter of this work is devoted to consanguineous marriages of the deaf, of which there were 31 in the 4471 marriages dealt with (0·693 per cent.). An examination of these showed that the percentage of deaf children

[11] Mygind: Deaf-Mutism, London, 1894, p. 53.

[12] It is an obvious error to speak of congenital deafness as a "disease," it is more correct to describe it as a "defect."

[13] Mygind, loc. cit., p. 52.

[14] Edinburgh Medical Journal, March, April, June, 1865.

[15] My own figures, given above, show 1 in every 22½.

[16] Mygind, loc. cit., p. 87.

[17] Marriages of the Deaf in America. Washington: The Volta Bureau, 1898.

born from marriages reported as consanguineous was nearly four times as great as from marriages not so reported. In the concluding advice given to the deaf, therefore, it is stated that under no circumstances whatever should union be permitted among those who are related in any degree of consanguinity. It was a study of United States statistics that led Graham Bell, the inventor of the telephone, to write his warning pamphlet, "On the Formation of a Deaf Variety of the Human Species in America."

Interesting examples of communities are extant which give support to opposite views as to consanguinity. Of these it will be sufficient to quote two. In the island of St. Kilda, off the Outer Hebrides, intermarriage has gone on for centuries, yet no case of congenital deafness has ever been known there. On the other hand, at the Island of Martha's Vineyard, on the southern coast of Massachusetts, where intermarriage also obtains, there were, in 1880, 20 congenital deaf-mutes in a population of 500.

A possible explanation of conflicting facts met with in discussing the effects of consanguinity has been suggested by Mackay,[18] based upon the investigations of Thomson into the marriage customs of Fiji. In Fiji, cousin marriages are considered from two aspects: (1) where the contracting parties are the children of two brothers or of two sisters; and (2) where the contracting parties are the children of a brother and a sister respectively. Thomson has shown that the relationship between the children of two brothers or of two sisters is exactly the same as the relationship between the children of the same parents, and therefore marriage between two such children is strictly forbidden. On the other hand, cousins of opposite sexes, of whom the father of one is brother to the mother of the other, are said to be "concubitants,"[19] that is to say, marriage between them is not only encouraged, it is obligatory. From an examination of census figures, taken with a view to the study of Fijian marriages, Thomson found that, as to both fecundity and vitality of offspring, the marriages between concubitants are superior to those between relations (not concubitants), or between fellow townspeople (not related), or between natives of different towns. In contrast with this, it appeared that marriages between relations (not concubitants) are greatly inferior to those of any other class. Whilst pointing out that this consideration, applied to the investigation of deaf-mutism, would mean the preparation of entirely new statistics, Mackay believes that, if this were done, it might reconcile present discordant opinions.

It is impossible totally to eradicate congenital deafness for a certain number will always appear, like other sporadic cases of defect. Their number could, however, be enormously reduced by the application of eugenic principles. If deaf-mute marriages, the union of blood relations, and the union of alcoholics, syphilitics, and those with a family taint of insanity could be prohibited, that alone would be of great assistance. We can at present, however, only educate public opinion. The medical practitioner has many grave responsibilities upon his shoulders, and not the least important of them is his duty to the State. He has it in his power to educate the public both by precept and by example, and he should never neglect an opportunity of using that power. It is a great pity that the doctor is not more often heard in Parliament, not as a crank, but as one who has exceptional opportunities, by education and experience, of giving valuable and practical aid to the State. But, for many reasons, the medical profession has, in this country at least, to work silently. Honours fall more readily to the destroyer than to the saviour, to the talker than to the thinker, and it needs repeated hammering to make people understand that it is the saviour and the thinker who are really of most worth. It is the medical practitioner who should be foremost in eugenics, and from what I have said it is evident that in the application of eugenic principles it would be possible greatly to reduce the number of deaf-born persons requiring special education. Out of 691 deaf children we have seen that 284, or over 41 per cent., were congenital. Could these be eliminated greater attention could be paid to the 407 acquired cases, their classification would be simplified, and the results of education would be better.

Queen Anne-street, W.

[18] The General Practitioner and Deaf-Mutism, The Practitioner, October, 1908.

[19] Concubitancy in the Classificatory System of Relationship, Journal of the Anthropological Institute, May, 1895.

# NOTES ON THE DURATION OF INFECTIVITY OF ENTERIC FEVER

## AS ILLUSTRATED BY REPEATED BACTERIOLOGICAL EXAMINATION OF 27 CASES.

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ATTENTION has been given recently to the fact that patients convalescent from enteric fever pass, for a variable time, typhoid bacilli with their stools and urine. In order to estimate the length of time during which the bacilli may continue to be excreted a routine examination of the stools has been carried out during the last few months of all enteric fever patients treated in the Isolation Hospital, Southampton.

The usual routine methods have been employed. A small portion of the stool is mixed with sterile water, and two Petri's dishes are inoculated by means of a glass rod. Both dishes are inoculated by the same rod, the reason being that the first plate will as a rule contain, on being incubated, too many colonies; the second plate generally shows the colonies quite separate, and subcultures can be easily carried out. If the colonies on the plate are too numerous, most of the lactose of the medium is used up, and consequently there will be some B. coli colonies which do not show the characteristic change. For this reason an overcrowded plate should be discarded when subculturing colonies.

The following media have been employed in this investigation in order to make the first differentiation between the B. coli and the typhoid colonies: (1) McConkey's bile-salt neutral-red agar; (2) Endo's fuchsin agar; (3) Werbitzki's China-green agar; (4) Conradi-Drigalski's medium; and (5) Faucus's brilliant green agar. The principle of most of these media is the same. Lactose is added to the medium, which is decomposed, with formation of an acid, by the B. coli and not by the typhoid bacilli. The acid so formed acts on the indicator in the medium and changes its colour, thus enabling the B. coli group of organisms to be separated from the typhoid group.

There are other organisms, however, occurring in the intestines which are non-lactose fermenters, and therefore subcultures are necessary in order to identify the typhoid bacillus. The following additional tests are made: 1. Litmus milk cultures should show acidity and no curdling of the milk. 2. Indol ought not to be produced on growing the organism in peptone solution. Some varieties of peptone do not show indol production with any organism, so that the peptone solution should be tested beforehand with a known indol-forming organism. 3. Hanging-drop preparations should show a motile bacillus. 4. The organism should produce acid but no gas in glucose and mannite litmus peptone solutions.

As regards the choice of a medium for the preliminary separation of the organism, I have found McConkey's neutral-red bile-salt agar to be the most reliable. Endo's fuchsin agar is very sensitive, but it possesses two disadvantages: 1. It changes its colour and becomes useless if exposed for any length of time to the light. 2. The plates must be examined frequently at short intervals; if left too long in the incubator the deep-red B. coli colonies tend to spread and obscure the colourless non-lactose-fermenting colonies.

Faucus's brilliant green agar does not possess any advantages over McConkey's medium and is a little more difficult to prepare. Werbitzki's China-green agar differs from all the other media in not containing lactose. It consists simply of a 3 per cent. nutrient agar medium brought to a reaction of + 13 (Eyre) and containing 0·003 gramme of Grübler's China-green in every 100 c.c. of the medium. On this medium, as Professor McWeeney points out, about 75 per cent. of the B. coli colonies are suppressed, and the developing colonies are small, opaque, and point-like. The typhoid colonies are larger and darker in the centre. Professor McWeeney recommends this medium for the detection of typhoid bacilli in stools.

The stools of 27 patients have been examined and cultures made during the convalescent stage after the temperature had reached normal. In cases showing a positive result weekly examinations were made until a negative result was obtained. Of course, in a hospital it is not practicable to

| Number of case. | Sex and age. | Date of admission. | Day of disease on admission. | Date of normal temperature. | Duration of pyrexia after admission in days. | Dates of examination of stools. | Number of days of normal temperature preceding examination of stools. | Result. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | F., 34 years. | Oct. 11th. | 4 | Oct. 30th. | 19 | Oct. 12th. | Temperature still raised. | Negative. | Widal's reaction present. No abdominal symptoms, but continuous pyrexia for 19 days. |
| | | | | | | Dec. 10th. | 42. | ,, | |
| 2 | F., 1½ years. | Nov. 29th. | 15 | Nov. 30th. | 8 hours. | Dec. 5th. | 6 | Positive.* | Very mild case with few symptoms. Three members of the family admitted three weeks after, evidently infected from this baby. |
| 3 | M., 6 years. | Nov. 3rd. | 8 | Nov. 11th. | 8 | Dec. 7th. | 26 | Positive. | Mild case. |
| | | | | | | ,, 15th. | 34 | ,, | |
| | | | | | | ,, 21st. | 40 | Negative. | |
| 4 | M., 20 years. | Nov. 5th. | 14 | Nov. 19th. | 14 | Dec. 21st. | 31 | Negative. | — |
| 5 | F., 29 years. | Sept. 16th. | 24 | Oct. 20th. Relapse Oct. 24th. Temperature again normal Nov. 15th. | 34 | Nov. 9th. | Pyrexia present. | Positive. | Case characterised by prolonged temperature. No severe symptoms. |
| | | | | | | ,, 24th. | 9 | ,, | |
| | | | | | | Dec. 2nd. | 17 | ,, | |
| | | | | | | ,, 15th. | 30 | ,, | |
| | | | | | | ,, 19th. | 34 | ,, | |
| | | | | | | ,, 28th. | 43 | Negative. | |
| 6 | F., 19 years. | Oct. 25th. | 7 | Nov. 22nd. | 28 | Dec. 27th. | 35 | Positive. | — |
| | | | | | | Jan. 3rd. | 42 | Negative. | |
| 7 | F., 45 years. | Sept. 10th. | 25 | Oct. 10th. Relapse Oct. 22nd. Temperature again normal Nov. 12th. | 30 | Nov. 25th. | 13 | Positive. | Prolonged case with marked diarrhœa and hæmorrhage. |
| | | | | | | Dec. 2nd. | 20 | ,, | |
| | | | | | | ,, 12th. | 30 | ,, | |
| | | | | | | ,, 19th. | 37 | ,, | |
| | | | | | | Jan. 3rd. | 52 | Negative. | |
| 8 | F., 7 years. | Oct. 3rd. | 7 | Oct. 16th. Temperature again elevated Dec. 7th owing to abscess. | 13 | Dec. 30th. | Pyrexia present. | Negative. | Large abscess which contained staphylococci. |
| 9 | F., 20 years. | Oct. 2nd. | 6 | Oct. 16th. | 14 | Nov. 14th. | 29 | Positive. | Mild case with little diarrhœa. |
| | | | | | | ,, 22nd. | 37 | ,, | |
| | | | | | | ,, 29th. | 44 | ,, | |
| | | | | | | Dec. 5th. | 50 | ,, | |
| | | | | | | ,, 12th. | 57 | ,, | |
| | | | | | | ,, 20th. | 65 | ,, | |
| | | | | | | Jan. 2nd. | 78 | ,, | |
| 10 | M., 12 years. | Nov. 13th. | 9 | Nov. 24th. | 11 | Dec. 26th. | 32 | Positive. | Mild case. |
| | | | | | | Jan. 2nd. | 39 | Negative. | |
| 11 | F., 11 years. | Sept. 16th. | 9 | Sept. 24th. | 8 | Oct. 20th. | 26 | Positive. | Very little diarrhœa throughout illness. |
| 12 | M., 8 years. | Sept. 6th. | 11 | Sept. 25th. | 19 | Oct. 15th. | 20 | Negative. | Diarrhœa well marked. |
| 13 | M., 31 years. | Aug. 17th. | 14 | August 19th. Relapse Sept. 10th. Temperature again normal Sept. 19th. | 2 | Oct. 12th. | 23 (dating from end of relapse). | Negative. | — |
| 14 | F., 7 years. | Sept. 17th. | 3 (?) | Sept. 27th. | 10 | Oct. 20th. | 23 | Negative. | — |
| 15 | F., 22 years. | July 20th. | 18 | August 6th. Relapse August 15th. Temperature again normal Sept. 8th. | 17 | Oct. 2nd. | 24 | Positive. | Diarrhœa well marked. |
| | | | | | | ,, 7th. | 29 | Negative. | |
| 16 | M., 6 years. | Sept. 13th. | 13 | Sept. 25th. Transient rise on Oct. 2nd, lasting only 24 hours. | 12 | Oct. 24th. | 28 | Negative. | — |
| 17 | M., 7 years. | Sept. 15th. | 17 | Sept. 21st. | 6 | Oct. 17th. | 26 | Positive. | — |
| | | | | | | Oct. 25th. | 34 | Negative. | |
| 18 | M., 12 years. | Sept. 29th. | 14 | Oct. 4th. | 5 | Oct. 31st. | 27 | Negative. | Mild case. |
| 19 | F., 9 years. | Sept. 7th. | 4 | Sept. 27th. | 20 | Oct. 30th. | 33 | Negative. | — |

* Endo's and Wurtzki's media used. Subcultures made on potato, milk, peptone, and McConkey's media. Cultures agglutinated with known typhoid serum.

| Number of case. | Sex and age. | Date of admission. | Day of disease on admission. | Date of normal temperature. | Duration of pyrexia after admission in days. | Dates of examination of stools. | Number of days of normal temperature preceding examination of stools. | Result. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| 20 | M., 35 years. | Aug. 23rd. | 13 | Sept. 18th. | 26 | Oct. 12th. | 24 | Positive. | Severe case. |
| | | | | | | ,, 18th. | 30 | ,, | |
| | | | | | | ,, 24th. | 36 | ,, | |
| | | | | | | ,, 28th. | 40 | ,, | |
| | | | | | | ,, 31st. | 43 | ,, | |
| | | | | | | Nov. 8th. | 51 | Negative. | |
| | | | | | | ,, 10th. | 53 | ,, | |
| 21 | M., 13 years. | Oct. 4th. | 10 | Oct. 18th. | 14 | Nov. 20th. | 32 | Negative. | — |
| 22 | F., 18 years. | Oct. 2nd. | 6 | Oct. 24th. | 22 | Nov. 17th. | 24 | Positive. | — |
| | | | | | | ,, 22nd. | 29 | ,, | |
| | | | | | | Dec. 2nd | 39 | Negative. | |
| 23 | M., 23 years. | Aug. 31st. | 9 | Sept. 30th.* | 30 | Nov. 16th. | 14 | Positive. | Multiple abscesses due to staphylococci. Got up Nov. 8th. |
| | | | | | | ,, 24th. | 22 | ,, | |
| | | | | | | Dec. 2nd. | 30 | Negative. | |
| 24 | M., 7 years. | Oct. 10th. | 8 | Oct. 19th. | 9 | Nov. 20th. | 32 | Positive. | Up in clothes Nov. 21st. |
| | | | | | | ,, 29th. | 41 | Negative. | |
| 25 | F., 6 years. | Oct. 5th. | 9 | Oct. 14th. | 9 | Nov. 25th. | 42 | Negative. | Up in clothes Nov. 19th. |
| 26 | M., 30 years. | Sept. 30th. | 15 | Oct. 24th. | 24 | Nov. 20th. | 27 | Positive. | Up in clothes Nov. 13th. |
| | | | | | | ,, 29th. | 36 | ,, | |
| | | | | | | Dec. 5th. | 42 | Negative. | |
| 27 | M., 23 years. | Oct. 16th. | 6 | Nov. 5th. | 20 | Dec. 7th. | 32 | Negative. | Up Nov. 27th. |

* An irregular pyrexia, due to the abscesses, commenced on Oct. 7th, the temperature again becoming normal on Nov. 2nd.

keep patients until assurance is made that they will not become carrier cases; several examinations showing negative results are necessary to make certain that the patient will not become a carrier, as it is well known that carriers often pass the bacilli intermittently.

Some importance may eventually be ascribed to discovering the period when a patient ceases to pass the bacilli, as probably it will be found that these cases are free from the liability to have relapses. I cannot, however, give any proofs of this at present. A glance at the table will show the variability in the period when a negative result was obtained.

The persistence of infection bears no relation to clinical signs; the patient in No. 9, who showed typhoid bacilli in the stools 78 days after the temperature was normal, was a mild case with little diarrhœa.

A consideration of the table tends to show that carrier cases do not have such a marked influence on the spread of the disease as might be thought possible, because "return" cases of enteric fever are very rare, and as most hospitals discharge their patients without a bacteriological examination of the stools a fair proportion must be sent home with typhoid bacilli still present in the intestines.

I am indebted to the medical officer of health, Dr. Lauder, for permission to publish this article.

Southampton.

Dr. George M. Robertson, lecturer on mental diseases in the University of Edinburgh, and physician-superintendent of the Royal Morningside Asylum, Edinburgh, and Dr. A. R. Urquhart, physician superintendent of James Murray's Royal Asylum, Perth, have been elected corresponding members of the Society of Psychiatry of Paris.

THE WEST HAM AND EAST LONDON HOSPITAL.—At a large public meeting of the governors and subscribers of this charity, held in the council chamber of the Town Hall, Stratford, by kind permission of the mayor and corporation, the alteration of the name of the institution to "The West Ham and Eastern General Hospital" was unanimously confirmed. The hospital is now in every sense of the term a general hospital, having surgical and medical wards for both male and female cases, as well as ample accommodation for dealing with accidents.

## SPOROTRICHOSIS.

BY E. VON OFENHEIM, M.D. LEIPZIG, M.R.C.S. ENG., L.R.C.P. LOND.

THE disease known as "sporotrichosis" seems to be sufficiently rare to justify the publication of notes upon a case which just recently came into my hands. Further history of the case and the effects of the therapy may allow a more complete picture of it to be given.

The patient, a female, aged 18¾ years, had been quite a healthy child up to six years ago. The family history does not show anything of importance; neither tubercle nor specific disease can be traced. Six years ago the patient had a glandular swelling on the left side of the neck, which was operated upon, the glands being removed. She was quite well after that until about three years ago, when the whole of her neck—that is, probably all the cervical glands—began to swell, the condition being diagnosed as Hodgkin's disease. After a few months a diagnosis of tubercular glands was made by another medical man, and the patient was submitted to X ray treatment, which apparently at one time caused the glands slightly to decrease in size, but they rapidly increased again, and the prolonged X ray treatment did not seem to have any further effect.

The case came into my hands on Nov. 18th, 1910, and from the opsonic index to tubercle (which varied between 1·22 to 0·73) I concluded that the diagnosis of tubercle must have been the correct one, and the patient was submitted to a course of inoculations with B.E. tuberculin. At the same time there was a fairly hard, not very tender, swelling over the middle third of the left tibia which was sometimes painful, especially at night. This swelling had existed (as I was informed) since September, 1910.

The three possibilities which were taken into consideration at the time were: (1) tubercular periostitis or osteitis; (2) gumma; and (3) osteo-sarcoma. No. 1 seemed to be the most probable one in consideration of the condition of the glands of the patient. To exclude No. 2 a Wassermann test was made which proved negative. To decide No. 3 the effects of the tuberculin treatment could be watched. There existed also a sinus behind the left ear, above the mastoid process, the result of an incision designed to lead

to a broken-down gland, but from which no other discharge but blood was obtained.

By Feb. 4th the glandular swellings in the neck had considerably decreased, the circumference of the neck being diminished by 1½ inches; at the same time the swelling on the tibia was more marked and was apparently fluctuating. On that day, with an aspirating needle, about 2 c.c. of blood were withdrawn from that swelling, and were planted out on agar, serum agar, and broth. The microscopical examination showed only blood and no organisms could be discovered by direct examination. The leg felt very comfortable for the next few days, but became very painful again, and by Feb. 15th the swelling had markedly increased and was distinctly fluctuating and very tender. It was again aspirated, but only some very thick, dark-brown, tarry fluid was obtained with great difficulty, which proved on examination to be altered and partly congealed blood. This appearance, taken together with the fact that in spite of the glands going down under the tuberculin treatment, the swelling of the tibia had increased, made me suspicious of malignant disease.

Cultures were made again from the fluid withdrawn, and on the next day the patient was removed to St. John's Hospital, Lewisham, S.E., where the swelling was opened by a longitudinal incision of about 4 inches. Congealed blood only was found on the tibia. The bone itself was stripped of the periosteum to an extent of about 2 inches, and two small sinuses were noticed leading into the bone. The bone was opened, and it was found that these two sinuses led into a cavity of about ½ inch in diameter and 1½ inches long. This cavity contained some semi-gelatinous substance, but was not in any communication with the medullary cavity. It was afterwards plugged with iodoform. The wound was stitched up and only drained at the lower angle. Since then the wound has united by first intention, and there was never any pus or discharge of any kind. The temperature, which showed before the operation variations between 97·6° and 100·5° F., went up after the operation for several nights to 103° and even 104°, the patient feeling quite well in spite of it.

The cultures which were taken at the time of the first aspiration (Feb. 4th) have grown within seven days a few small colonies which microscopically looked like yeast, and I supposed that I had in those cultures an accidental yeast contamination, as yeast infections are very rare, although there are several of them on record in the literature.

The cultures which were taken at the time of the second aspiration have grown in six days the same organism—that is, a great number of a Gram-positive, round or oval-shaped organism almost of the size of a red blood corpuscle, some of which showed some differentiation of the protoplasma. Subcultures, which were made on various sugary media, showed that the organism, unlike any yeast, did not produce alcohol, nor acids, nor any kind of gas. Milk which was planted out with it did not coagulate, nor was it altered in its reaction in any way in ten days, and the organism did not seem to grow well in it. Subcultures, which were planted out on glucose agar, grew much more readily, and after two or three generations they are growing now within 24 to 48 hours. At room temperature (20° C.) they seem to grow better than in an incubator at blood temperature. From these subcultures smears were stained in various ways, in some of which a mycelium was discovered and to which the above described round-shaped spores were hanging in clusters. Cultures which were planted out with a platinum wire, which was inserted into the sinus behind the ear of the patient, have grown exactly the same organism in pure culture.

Although it would be rash to make an absolutely definite statement, I feel convinced that this is a case of sporotrichosis, as described by Beurmann, Ramond, Brodier, Gastou, and others; and so far the bacteriological appearance is in accordance with the descriptions given by Duval and Monier-Vinard. The one point in which this case differs somewhat from those which have come to my knowledge up to now is the localisation of the disease in the bone, but there are some typical cutaneous lesions in this patient as well, of the existence of which I was only informed after the operation, as the patient did not attach any importance to them herself. These cutaneous lesions are on the external surface of the right thigh—not the same leg on which the bone lesion was—and consisted of three little ulcers, two of which are skinned over and only show a purple discolouration, whilst the lowest one is still open, showing a tendency to granulate, but does not discharge. Cultures from these lesions have been taken and have grown the same organism as from the other lesions in pure cultures.

A good many cases of sporotrichosis have been diagnosed and published in France, in America, and a few also in Germany; but as far as I have been able to look through the literature in this short time I believe that the above is the first case of this kind to be recorded in England.

Weymouth-street, W.

## TREATMENT OF RODENT ULCER BY CALCIO-PHOSPHATE OF URANIUM.

BY ALBERT CHURCHWARD, M.D. BRUX., M.R.C.P. EDIN., M.R.C.S. ENG.

IN the treatment of rodent ulcer there has been during the last few years a great advance in our knowledge of the subject, and consequently much benefit to our patients. There yet remains, however, a wide scope for new methods, and I am anxious to put before my colleagues in the profession a new treatment which in my hands has, so far, proved an unqualified success. Up to the present time I have only treated three cases of this disease with this remedy, and therefore feel much diffidence in bringing the treatment before the notice of the profession generally, my excuse, if any is necessary, being that two cases are completely cured and the third is getting rapidly well.

The mode of application and treatment generally is simple and inexpensive, in which respect it differs from radium bromide. Whilst experimenting with calcio-phosphate of uranium I found this mineral to possess great radio-activity. This name was given to me by Dr. George Prior, Keeper of Minerals at the British Museum Natural History Museum, South Kensington, after having examined my specimen of mineral and comparing it with others in the museum. As I had no means to measure the radio-activity of the mineral I had some radiographs taken, two of which I here submit. Fig. 1 shows the amount of "light" emanations given off during an exposure of three hours. Fig. 2 is the shadowgraph of a coin taken through half an inch of wood with six hours' exposure. The radiograph and shadowgraph here depicted were procured: (1) by putting an ordinary photographic sensitised plate in a dark room and leaving the mineral upon it for three hours; and (2) placing a piece of wood half an inch thick over the coin which rested on the plate and the mineral lying on the wood—exposure six hours.

The following are the cases treated:—

CASE 1.—A man, aged 47 years, had a small rodent ulcer on the right side of the nose, had noticed it for some months and treated it with boric acid and ung. zinc. oxidi himself, but as no improvement took place he came to me in September last. An exposure of three hours a day cured this in five weeks.

CASE 2.—A woman, aged 50 years, had been treated for rodent ulcer for some months with X rays. She stated that she was no better but rather worse than when treatment was commenced. She also came to me last September. An exposure of four hours a days cured this in nine weeks.

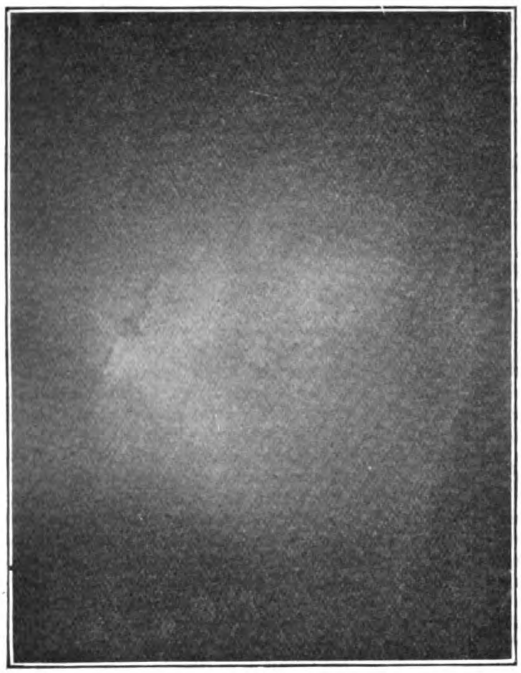
CASE 4.—The patient, a woman, aged 49 years, is partially paralysed. She is suffering from tumour in the brain, and developed rodent ulcer on the left side of the nose, which was treated with X rays for four months. She did not improve, but became rapidly worse. I began treating it four months ago, with exposure of two hours a day for the first month, three hours the second month, and then four hours a day. It is now almost well, and about one-tenth of the original size (see Fig. 3). The healed tissue shows how large this ulcer was before I began treating it.

I much regret that Cases 1 and 2 refused to be photographed, but the photograph of No. 3, which was taken in my presence by Mr. Norton Collins of South Norwood, shows the present condition of the patient.

I am also using this treatment in two cases of inoperable cancer, but have not yet had sufficient time to say if any permanent benefit will result.

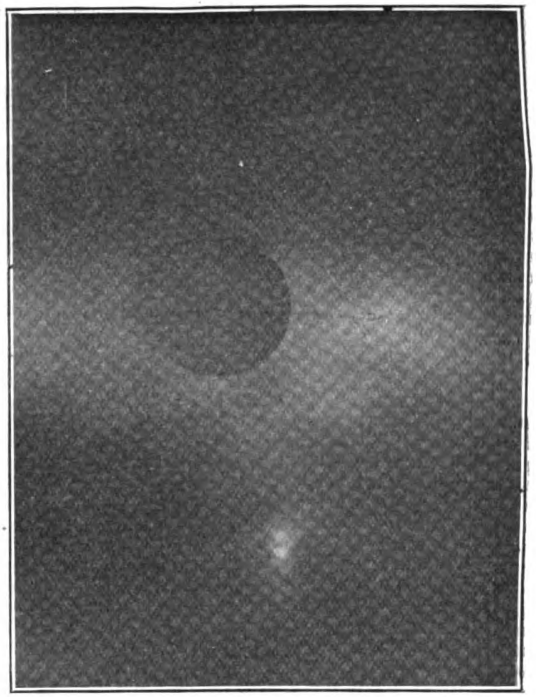
Before entering upon treating any case with the mineral it is absolutely necessary to prove how much radio-activity

FIG. 1.



Showing amount of "light" emanations in three hours.

FIG. 2.



SLowing shadow of coin through ½ inch of wood (6 hours' exposure).

it possesses, as some specimens possess very little, whilst others contain a large amount. From experiments I have made I should say that the mineral should contain as much radio-activity as that shown in the radiograph (Fig. 1) in order to be effective. This I regard as the *lowest* standard of efficiency.

The mode of treatment is simple. After proving that your calcio-phosphate of uranium is sufficiently radio-active, as per above, place a piece of lint over the ulcer and let the mineral rest on this for three hours each day, which after a week can be increased to four or five hours. If any dermatitis is produced in the surrounding tissues leave the treatment off for two days, and then apply for an hour, or two hours only, for the first week, after which increase the time gradually. Dermatitis in the surrounding tissues was set up once only in my cases after an exposure of five hours.

It is wise to wrap a piece of lint or bandage round the mineral and to keep this on permanently because the yellowish-green crystals of the calcio-phosphate of uranium are easily broken and detached from the matrix on which they are deposited, and would therefore depreciate the radio-active power of the mineral.

FIG. 3.

The two "black spots" here portrayed show portions of the ulcer not quite well; the lighter portion shows where the ulcer has healed. The healed part is much larger than depicted above, but it has healed so well that there is so little difference in the surrounding tissues that photography does not show it.

The value of this treatment is this: 1. It is not expensive, as is the case with radium bromide, and therefore within the means of any general practitioner. 2. The mode of treatment is so simple that patients can be treated in their own homes, the case being left in charge of a nurse after the general practitioner has seen that the mineral is properly applied and in the position required.

In placing this treatment before my brother medical practitioners, more especially those who are unable to procure radium-bromide or "snow," I feel sure that they will find it quite as satisfactory as the other treatments, although I admit that a little more patience is required. It is less expensive, and last, but not least, the "scar" left is certainly less than in any other treatment I have seen.

Anyone interested in this treatment can see the subject in Case 3 by communicating with me, and it is certainly a severe test of the efficiency of the treatment owing to the low standard of general health of the patient, on account of her other ailments.

South Norwood, S.E.

## AN UNUSUAL CASE OF INTESTINAL OBSTRUCTION.

BY E. A. WRIGHT, M.B., B.C. CANTAB., D.P.H.

THE patient, an unmarried girl aged 21 years, was admitted to the Romford Cottage Hospital on Oct. 13th, 1910. She complained of abdominal pain and vomiting, and stated that the bowels had not acted for several days, in spite of repeated injections. On examination the patient presented a pale, sallow appearance; tongue moist and clean; pulse 116, temperature 97·5° F., and respirations 24 to the minute. The heart and lungs were normal. Abdominal examination revealed the presence of a hard rounded lump in the right epigastric region of about the size of an orange. This was tender to deep pressure, and did not move with respiration. Per rectum a hard, small, non-tender moveable mass could be felt. The patient gave a history of a similar attack a year ago which was relieved by enemata. She also stated that she had suffered from constipation with frequent attacks of vomiting for some years, and had been under treatment at a London hospital for indigestion. A diagnosis of fæcal impaction was made; hot poultices to the abdomen, oil and soap enemata, and subcutaneous injections of atropine sulphate were tried. During the first 24 hours of this treatment the patient's condition improved; the vomiting ceased and the pulse-rate dropped to 108, the temperature remaining normal. No action of the bowels was obtained. On Oct. 16th the vomiting started again and the pulse-rate rose to 120. Eserine sulphate (1-20th grain) was given subcutaneously, and the faradic current was applied to the abdomen. No relief was obtained from this treatment, and on the 17th the patient's condition became much worse, and laparotomy was decided on.

The abdomen was opened by a 4-inch incision 1 inch to the right of the middle line. A coil of distended small intestine and a portion of omentum at once protruded through the wound. The lump previously felt was explored with the hand and found to be hard, smooth, and rounded, and to extend a considerable distance upwards and to the left. The abdominal incision was enlarged and the cause of the obstruction in the intestine was sought for. A firm lump about 3 inches long was found completely blocking the lumen of the small intestine; beyond this point the intestine, large and small, was quite empty. The peritoneal cavity was shut off by packing, and the bowel was opened by a small incision. The obstructing mass was found to be hair tightly matted together. This was removed, and the wound in the intestine was closed by Lembert's sutures. The other lump was then examined and found to be in the stomach, which organ it completely filled. The stomach was opened by an incision about 3½ inches long in the anterior wall, and the mass was removed with some difficulty. This also was found to consist of an enormous mass of tightly matted hair, which was found subsequently to be of the following weight and size: weight, 2 lb. 12¾ oz.; length, 11¼ inches; and circumference, 10½ inches. The wound in the stomach was treated in a similar manner to that of the intestine. The peritoneum was irrigated with warm saline solution, and a quantity was left in. The peritoneum and muscular layer were taken up in one layer of sutures, owing to the gravity of the patient's condition, and the abdomen was closed.

The patient rallied well from the operation, and her condition on the following day was much improved. The bowels were acting copiously and there was no vomiting. The pulse-rate continued high. Owing to severe diarrhœa, with frequent and very offensive stools, it was impossible to feed per rectum, and the patient becoming dangerously exhausted feeding by the mouth was started on the third day after the operation. This was followed by a temporary improvement, but the diarrhœa returned with increasing severity and continued in spite of treatment till Oct. 23rd, six days after the operation, when the patient died.

The above case seems to me an interesting one for several reasons. 1. Although hair masses in the stomach have been fairly frequently described, they are rare as a cause of intestinal obstruction. 2. The enormous size of the mass in the stomach with the comparatively slight symptoms it had caused. 3. The mental condition of the patient. A large proportion of cases of this condition described have been lunatics. This patient was a bright, intelligent girl, with no history of hysterical attacks. Her relatives tell me, however, that for many years she had been in the habit of pulling and biting at her hair when reading or when her attention was otherwise engrossed, showing that the habit had become almost an unconscious one.

Romford.

## INFANTILE SCURVY IN A CHILD FED ON STERILISED MILK.

BY FRANCIS BRACHI, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT SCHOOL MEDICAL OFFICER TO THE BOROUGH OF PORTSMOUTH; LATE HOUSE PHYSICIAN, VICTORIA HOSPITAL, CHELSEA.

*With Remarks by* J. WALTER CARR, M.D. LOND., F.R.C.P. LOND.

ON May 12th, 1910, a female infant, aged 7 months, was admitted to the Victoria Hospital for Children, Chelsea, under the care of Dr. Carr. A few days previously her mother had noticed that the child's legs were swollen and painful. This commenced in the right knee, the left being affected two days later. The swellings were very tender and painful, and the child cried whenever the limbs were touched or moved. She was very restless at night and perspired freely about the head. There was no vomiting. The bowels were regular, the motions being of normal colour. There was no reason to suspect any syphilitic taint. The child was one of twins, the other being pale and delicate, but showing no signs of scurvy, although fed in the same way. For the first six weeks of life the child had been breast-fed, and after that was brought up entirely on Borough Council sterilised milk, according to directions and under supervision. The mother seemed to be an intelligent and careful woman.

*Condition on admission.*—A pale, fairly nourished child; weight 13 pounds. Fontanelle admitted three fingers. The tongue was furred and the mouth rather dirty. There were no teeth, and consequently no swelling of the gums. Well-marked rickety rosary and some enlargement of the epiphyses of the long bones. No indication of intra-orbital hæmorrhages. Temperature 100° F.; pulse 140; respiration 32. Heart and lungs: Normal. The liver reached one finger's breadth below the costal margin; spleen not felt. Urine: Acid; no albumin, sugar, or blood. Limbs: Both thighs and legs were very much swollen and extremely tender. The veins showed up clearly through the skin, which was tense and shiny. The swelling was more marked in the left leg, and especially well felt as a hard mass in the popliteal space. The child would not move her legs, and cried if they were touched. Arms: Nothing abnormal. An X ray photograph revealed typical large subperiosteal swellings situated at the lower ends of both femora, more especially the left, and some swelling of the shafts above; this extended to the lower end of the diaphysis on each side.

*Treatment.*—The child was given fresh milk and water in the proportion of 4:1 at intervals of 2½ hours for the first four days. Fresh orange juice (1 ounce) and raw meat juice (4 drachms) were also given daily. On May 16th undiluted milk was given in 5-ounce feeds, with sodium citrate, 6 grains, to each feed. On June 3rd the raw meat and fruit juices were stopped, and one feed of Mellin's food was allowed daily.

*Result.*—Within a week the swelling began to subside and the child made attempts to move her legs; at the end of two weeks there was free movement and no tenderness. The temperature remained irregular, rising at times to 99°. This was probably due to absorption of the effused blood. At first there was a fall in the weight to 12 pounds 14 ounces, but afterwards a steady increase to 14 pounds. X ray photographs, taken at intervals, showed a gradual decrease in the swellings. The child left the hospital on June 30th, and her condition was then very satisfactory in every respect.

*Remarks by* Dr. CARR.—The vast majority of cases of infantile scurvy occur in children who have been fed for at least several weeks exclusively, or almost entirely, either on patent foods or on condensed milk. It is, however, very important to recognise that the disease is met with,

fortunately only rarely, in infants who have been fed on boiled or sterilised milk, because if even only a very few well-marked cases occur under these circumstances, it necessarily follows that there must be a much larger number of children who suffer from slighter manifestations, the real nature of which is likely to pass unnoticed unless the possibility of the occurrence of infantile scurvy is considered.

It is easy never even to think of the possible scorbutic origin of many infantile ailments. A few years ago I was attending the infant son of a medical man who had been fed for some months, with the utmost care, on sterilised milk only. Not until the sudden occurrence of an acutely painful swelling in connexion with the right femur, followed by rapid recovery as soon as fresh milk, raw meat juice and fruit juice were given, indubitably showed the child to be suffering from scurvy, did I realise that the general malaise, the anæmia, and the slight tenderness on movement, which had been present for some time before, were merely early manifestations of the same disease. I was obsessed at the time with the idea that an infant not fed on patent foods or condensed milk was practically safe from scurvy.

We do not know as yet why so few of the many children who are fed on sterilised milk develop scurvy. Probably the essential factor is prolonged sterilisation or prolonged boiling of the milk; the danger from milk which has only just been raised to the boiling point for a very short time seems fortunately to be infinitesimal. Naturally, also, the risk is greater when extreme care is taken that the child has nothing except sterilised milk. Lastly, the occurrence of some other illness may determine the development of marked scorbutic manifestations in an infant who might otherwise escape. In the child of the medical man just referred to, an attack of influenza, followed by some middle-ear trouble, seemed to act as the exciting cause. It is interesting to note that the child whose case is here recorded was one of twins, and that the other twin—fed exactly in the same way—although delicate, appears to have escaped any obvious manifestation of scurvy. Evidently the determining factor in producing the characteristic symptoms must be a very slight one.

Another point worth noting is the possibility of mistaking a subperiosteal swelling, due to hæmorrhage resulting from scurvy, for a sarcomatous growth. This grave mistake is especially liable to occur should the swelling be one-sided, and the child still toothless so that the gums are not affected. The X ray appearances, as in the present case, may closely simulate those presented by a subperiosteal sarcoma. Although I have not myself met with this difficulty in diagnosis, I have heard of cases in which the question of amputation of the thigh has been seriously entertained for a swelling of the femur, which, from its characters and from the skiagram, was regarded as malignant, but which subsequent developments showed to be due simply to infantile scurvy.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### MEDICAL SECTION.

*Some Observations on Low Blood Pressure.*

A MEETING of this section was held on Feb. 28th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. W. EDGECOMBE read a paper entitled "Some Observations on Low Blood Pressures." He said that the results of a long series of observations had been examined to determine the average level of blood pressure both morning and evening, and the average daily change to serve as a basis from which might be noted deviations consequent upon special procedures. The effect of various drugs had been tried, and as the chief object was to test whether they produced a sustained rise in blood pressure, the method of taking morning and evening readings was preferred to that of observing the immediate effect of the drug. The latter, however, was also done in certain instances. Excluding cases of acute illness with febrile disturbance—the acute specific fevers, &c.—the following were some types of disorder which frequently presented a low blood pressure: 1. Subjects with poor circulation, cold hands and feet, and liable to chilblains. Dr. Edgecombe had met with several examples in which the systolic blood pressure rarely rose above 95 mm. Hg. By means of baths, massage, and exercise a temporary rise might be effected, during the maintenance of which the objective and subjective signs of defective circulation improved manifestly; but it was difficult to effect an enduring rise in the general level of blood pressure in those cases, for they were prone, on cessation of treatment, to relapse to their former state. 2. Cases of pure neurasthenia, having as their prominent characteristic profound fatigue, either somatic or psychical, or both. Whether the low blood pressure in those cases of neurasthenia was the cause or the effect of the extreme fatigue it was not easy to say. The probable sequence of events was a lowering of blood pressure by toxic or other causes, and it was the extreme feebleness of the circulation that gave rise to the subjective sensation of intense fatigue. It was certain that a rise in blood pressure was an almost invariable accompaniment of improvement. In marked contrast to those was the irritable type of neurasthenic—the "neurotic" individual, who was frequently not a true neurasthenic, but a psychasthenic or a hypochondriac. In those cases the pulse was usually quick and irritable, and the blood pressure subject to great variation, but generally above the normal, and sometimes markedly so. 3. Tobacco poisoning. 4. In cases of dilated heart, with or without valvular disease, the pressure was usually found low, and a rise in pressure was one of the indications of the progress of the case towards recovery. 5. Fibrositis. Many examples of the so-called gouty or rheumatic manifestations of lumbago, sciatica, and neuritis showed a blood pressure somewhat below normal. 6. Phosphaturia. 7. Arthritis deformans. Contrasted with the ease with which a high blood pressure might often be reduced, the permanent raising of a low pressure was a matter of greater difficulty. Fortunately it was seldom necessary, were it possible, to raise the blood pressure to a great extent; a relatively small rise was, in most cases, coincident with marked amelioration. To effect a rise, non-medicinal measures, such as diet, exercise, change of air — for example, to high altitudes,—and hydrotherapeutic procedures were to be preferred to drug treatment. With regard to diet, an excess of meaty food should be prescribed, with a corresponding diminution of the starchy elements. Exercise, carefully graduated, improved the tone of the heart and vessels and raised the pressure; while altitude and the baths mentioned had a marked effect in the same direction. If drugs were required, pituitary extract would seem to have the most powerful and rapid effect; but Dr. Edgecombe had little or no experience of its continued use over long periods, and would rather hesitate to give much of so powerful a substance lest unlooked-for late results accrued of a harmful character. Next in potency would be caffeine, to be given only if the patient were not an excessive tea drinker. Calcium lactate appeared to be moderately effective, and strychnine was disappointing. Digitalis should be reserved for cardiac cases.

A discussion followed, in which Dr. C. O. HAWTHORNE, Dr. NATHAN RAW, Dr. F. H. HUMPHRIS, Dr. O. K. WILLIAMSON, Dr. R. HUTCHISON, Dr. F. W. PRICE, Dr. W. BEZLY THORNE, and the PRESIDENT took part, after which Dr. EDGECOMBE replied.

### BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.

*The Climatic and Balneological Treatment of Neurasthenia.*

A MEETING of this section was held on March 1st, Dr. T. F. GARDNER, the President, being in the chair.

Dr. W. RINGROSE GORE (Llandrindod Wells) read a paper entitled "The Climatic and Balneological Treatment of Neurasthenia." He said: Balneological treatment, although effective in removing the cause in most cases of neurasthenia, is still only to be regarded as complementary to other methods. In no disease are the details of general treatment of greater importance than in neurasthenia. One of the most essential factors in treatment is time, and many failures result from non-appreciation of this fact. It is very important to impress this upon patients; otherwise they become unduly depressed, when a short course of

treatment fails to effect a cure. Patients in a markedly debilitated state of health require rest in bed, combined with massage and careful dieting, before being subjected to spa treatment. On the other hand, neurasthenics in whom the disease is dependent on some chronic abdominal condition, such as gall-stones, chronic appendicitis, or some abdominal displacement, should be recommended spa treatment before and not after operation. Practically all cases of neurasthenia have a toxic basis and a very large number of cases are due to, or associated with, some form of digestive trouble. It is in these cases that properly regulated spa treatment is of signal value. At Llandrindod Wells the chief treatment consists in the drinking a natural saline water every morning. The action of this water is mainly one of gastro-intestinal lavage, which aids the elimination of toxic products, the origin of which is frequently to be traced to the digestive canal. This saline, being practically isotonic with normal blood serum, is not retained in the stomach but passes through the pylorus into the small intestine almost as quickly as it is taken. Owing to the stimulating effect of the salt on peristalsis it acts as a mild aperient, but this effect is in no way debilitating, inasmuch as no flow of serum from the bowel is induced. The effect of this treatment is very rapid. The appetite increases, the digestion improves, and the patient on appropriate diet almost immediately puts on weight. There is also at Llandrindod a chalybeate spring which is prescribed for its tonic effect. The constituents of natural mineral waters have an as yet unexplained effect upon the body cells. This has been ascribed to radio-activity, but may be in some way due to a renewal of the salts in the blood by others in a more active chemical condition. The external methods of treatment at Llandrindod are common to those in practice at most spas, and great discrimination is required in their application. High-frequency currents, douches of different kinds, and reclining baths at various temperatures are all valuable accessory methods of treatment, and flushing of the colon, as practised at Plombières, is beneficial in cases where mental depression is a prominent symptom. The choice of climate depends to a great extent upon the stage of the disease and the age of the patient. In most cases a preliminary rest cure is advisable, and subsequently a stay at a quiet bracing station should be recommended. Mountain or sea air is to be preferred unless they induce insomnia. In the summer it is easy to find a suitable climate in the British Isles, but in winter difficulty arises, inasmuch as neurasthenics require an open-air life. Young patients, especially those on the road to recovery, do well at an Alpine resort so long as they are content to keep to the milder forms of exercise. A sea voyage to the West Indies provides an open-air life under agreeable conditions of temperature for elderly patients. The Italian Riviera, Pau, Algeciras, and Ronda are all suitable stations in southern Europe. Algiers is a good winter resort, and in Egypt the stations round Cairo are to be preferred to those of Upper Egypt as being more bracing.

Dr. C. W. BUCKLEY (Buxton) said that there was one important mode of treatment which was of extreme value in neurasthenia, especially if accompanied with restlessness and insomnia—namely, the cold pack at a temperature of about 90°. It was doubtful whether there was any other measure of equal value for such cases. Referring to climate, the value of sea voyages was open to doubt, except in the slightest cases, as the monotony and want of occupation tended to increase morbid introspection.

Dr. PRESTON KING (Bath) considered that in the treatment of neurasthenia change was all important, with rest, and, as far as possible, absence of worry. Physical disease, as colitis, arthritis, or affections of the heart, must be treated. In colitis the Plombières douche was useful, but it was after all only to be recognised as a glorified enema. Too much had been claimed for the latest "cure." The same might be said of the Nauheim baths. These did good in some quick pulse cases, not by virtue of some occult action of gas bubble upon the skin, but rather by the tepid bathing aided by suggestion. Properly used, suggestion was a distinct help to cure, not only in neurasthenia, but in all illness.

Dr. W. EDGECOMBE (Harrogate) regretted that the author of the paper had not defined clearly what was meant by the term neurasthenia. The more severe cases, characterised by profound fatigue, formed a well-marked group, the main factor in the treatment of which was rest. The milder cases were so ill-defined and protean in their manifestations that it was impossible to formulate definite rules for treatment. Each case must be treated on its merits; the tact and personality of the physician in charge were not the least important factors in procuring a good result.

Mr. WILLIAM ARMSTRONG (Buxton) considered that neurasthenia depended upon disturbance of the sympathetic nervous system—in some cases preceded by, in nearly all followed by, auto-intoxication. He strongly advocated direct treatment of the cervical ganglia of the sympathetic in minor cases by means of ionisation of the neck: in more severe ones by anæsthetic ionisation followed by light application of the electric cautery. For the auto-intoxication nothing was so helpful as the drinking and inhalation of strong radium emanations in water (8000 machi units per litre), which greatly increased nervous force and also strongly stimulated the excretion of waste products, especially increasing the output of carbonic acid.

Mr. W. T. REES (Llanwrtyd Wells) alluded to the fact that preceding speakers had not mentioned influenza as a possible cause of neurasthenia, but in his opinion cases of neurasthenia had been much more numerous since the advent of influenza in this country. He concurred with the previous speakers that it was desirable to have a definite conception as to what conditions should be included under the term neurasthenia. In the absence of any authoritative pronouncement on the matter, he had for himself adopted the meaning of the word, from its Greek derivatives, which signified lack of nerve force. The term neurotic, on the other hand, he had always considered as applicable to a highly excitable and unstable state of the nervous system, associated with exaggerated reflexes.

Dr. F. G. THOMSON (Bath) was of opinion that the first essential in the treatment of neurasthenia was to get a clear mental conception of the nature of the disease. Dr. Gore's statement that it was due to gastro-intestinal toxæmia was not borne out by facts. It was not the *bon vivant* who became neurasthenic, but the patient who, after years of anxiety and worry, eventually broke down under the strain. Neurasthenia was the psychosis of exhaustion, and the primary factor in treatment must be complete mental and physical rest. The great majority of severe cases were bad sleepers, and such cases were likely to derive far more benefit from a sedative than from a bracing climate.

The PRESIDENT said he had been asked to say something respecting Bournemouth and its climatic suitability for neurasthenics. He mentioned the various degrees of sedative influences exercised by central Bournemouth, the east and west cliffs, and their applicability for securing sleep. He also mentioned Bournemouth's quiet Sunday as a unique feature of this town, whereby much of the noise and unrest of other places was avoided. He agreed that much in the treatment of neurasthenia depended on the personality of the physician and the wise use he made of suggestion suited to each particular case.

## MEDICAL SOCIETY OF LONDON.

*Pathological Specimens.*

A MEETING of this society was held on Feb. 27th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. F. J. POYNTON showed a Heart from a case of Rheumatic Carditis. The visceral pericardium showed the usual shaggy appearance of rheumatic pericarditis. Upon the aortic valve there were minute vegetations, but connected with the mitral valve springing from chordæ tendineæ there was a large vegetation such as is found in malignant endocarditis. The specimen accordingly supported the view maintained by Dr. Poynton that acute rheumatism was an important cause of malignant endocarditis, which was not, in his opinion, always an evidence of a secondary infection in the rheumatic. Another remarkable feature in the case was a pericardial exudation close upon a pint in quantity and blood-stained. The illness occurred in a boy of 7 years who had been ailing indefinitely for two weeks and then developed multiple arthritis. That subsided in three days, when he was allowed to get up. A rheumatic rash appeared, and he was admitted with carditis seven days after the first appearance of arthritis and died six days later from syncope. The rare feature of bulging of the

præcordial intercostal spaces was noted two days before death. There was left pleurisy with effusion. A blood culture during life was not obtained, although the attempt was made. The diplococcus was present in the vegetation near the mitral valve. The specimen resembled the severe experimental carditis that was produced in a rabbit by a virulent intravenous inoculation of the diplococcus. A photograph was published in THE LANCET of Sept. 29th, 1900. The specimen showed also a chorda tendinea. At the same date as the case he now recorded a fatal case of rheumatic pericarditis occurred also at the Hospital for Sick Children, Great Ormond-street. The diplococcus was isolated in pure culture by Dr. J. G. Forbes, the clinical bacteriologist to the hospital, and a subculture was shown.

Dr. POYNTON also showed specimens from a case of Acute Leukæmia in a girl aged 17 years. The total duration of the illness was five weeks. The patient thought at first she had a bad cold with sore throat and swelling of the glands in the neck. She actually continued at her work until Jan. 2nd, and died on the 18th. Between the onset and her admission to hospital the following additional symptoms developed: anæmia, fungating swellings of the gums with great fœtor, and continual oozing of blood. Ulceration of the palate. Weakness and purpura. The specimens showed the fungating gums, a large thymus, petechiæ in the gastric muscle, the marrow in the femur greyish in colour and semi-transparent, and the spleen slightly enlarged.

Mr. A. E. J. BARKER showed the following specimens: 1. Primary Carcinoma of the Cæcum, with a secondary nodule in the sigmoid flexure. ? Implantation from the upper cæcal growth. 2. Carcinoma of the Lower Rectum, with another smaller cancerous ulcer four or five inches higher up. ? Extension along the submucous lymphatics in the sense of Sampson Handley's infection. 3. Extensive Tubercle of the Colon (Hepatic Flexure) removed by operation.

Mr. ERNEST H. SHAW showed six specimens: 1. A case of Carcinoma of the Right Kidney in which there was a large lobulated hæmorrhagic tumour with an elongated flattened kidney stretched over one side of it. The tumour weighed 76 ounces; it was removed by operation from a man, aged 22 years, who had noticed a swelling in the right loin for nine years. Microscopical examination showed a collection of large cells, many of which were vacuolated. In places the cells were arranged in the form of tubules exactly like the tubules seen in a kidney. 2. A case of Carcinoma of the Œsophagus with Secondary Growths in the Liver. There was a large ulcerating growth occupying the œsophagus at about the level of the bifurcation of the trachea. The specimen was from a man, aged 31 years, who presented no symptom of obstruction during life. There was an indefinite history of hæmatemesis occurring about a month before death. Secondary growths were found in the liver and lymphatic glands of the neck, mediastinum, and abdomen. Microscopically the growth was found to be a columnar-celled carcinoma. 3. A case of Columnar-celled Carcinoma of the Liver Secondary to the Œsophagus, the liver weighing 179 ounces. 4. A case of Carcinoma of the Œsophagus Invading the Trachea. There was a large ulcerating growth seen at the middle of the tube extending through the trachea just above the bifurcation. A rod passed through an opening from one tube to the other. The adjoining lymphatic glands were affected by secondary deposits. The specimen was from a man, aged 53 years, who died with septic broncho-pneumonia. 5. A case of Chronic Nephritis affecting a rudimentary left kidney. Both organs were white, firm, and markedly granular. The nephritis was of the glomerular type (contracting white kidney). The organs were from a woman, aged 32 years, who died with infective endocarditis of mitral and aortic valves. She also presented the following lesions: arterio-sclerosis, chronic or old pleurisy, gout, and reducible inguinal hernia. 6. A case of Calcareous Degeneration of the Aortic Valve with Two Segments. There was atheroma of the coronary arteries. The heart weighed 15½ ounces. The left ventricle was dilated and the wall hypertrophied. The left coronary artery showed marked atheroma and narrowing of its lumen. The specimen was from a man, aged 67 years, who died suddenly.

Dr. F. PARKES WEBER showed specimens from a case illustrating the occurrence of prolonged or fatal syncopal attacks in elderly persons. The patient, a rather stout, flabby-looking man, aged 58 years, was admitted to the German Hospital on Dec. 7th, 1910. He had been much exposed to great heat owing to his work as a baker. Six weeks before admission, after an hour's walk, he was suddenly seized with a prolonged syncopal attack. From that time he remained very feeble, had a very weak pulse, and kept to his bed. In the hospital, although the heart's action improved somewhat under treatment, the gangrene progressed, the left leg as well as the right one becoming affected. Both legs showed discolouration up to the knees, the temperature was septic in type, and on Jan. 6th, 1911, the patient died. At the necropsy the coronary arteries were found sclerosed, and in the descending branch of the left coronary artery the channel appeared completely closed. There was much athero-sclerosis of the aorta with an atheromatous ulcer just distal to the origin of the left subclavian artery. In all probability in this case the prolonged syncopal attack with which the final illness commenced, coincided with the sudden complete closure of a portion of one of the already diseased coronary arteries.

Dr. R. C. JEWESBURY showed a heart with Tricuspid and Mitral Stenosis. The tricuspid valve was markedly stenosed, the edges of the septal and infundibular cusps were quite adherent, the edges of the septal and marginal cusps partially adherent, leaving a "button-hole" opening admitting only one finger, the edges of the valve being considerably thickened. The left ventricle was stenosed.

Dr. JEWESBURY also showed a Dilated Œsophagus from a man aged 34 years. The dilatation was uniform throughout its length except at its lower portion where it joined the stomach; that portion was more contracted than normal and would only admit the tip of the small finger. Fluids, however, readily passed through it. As well as being dilated the œsophagus was considerably increased in length; that caused it to deviate laterally from its normal course, and the lower end was directed to the left after it had been crossed by the aorta.

The PRESIDENT showed the following specimens: 1. A specimen from a case of Acute Cholecystitis removed about two weeks after the onset of the attack from a man aged 52 years; it contained a single calculus. A small piece of liver was seen attached to the specimen. The patient recovered without escape of bile. 2. A Gall-bladder containing a solitary stone; there was thickening of the wall. There had been several attacks of cholecystitis. The specimen was from a woman aged 42 years. There was recovery without any escape of bile. 3. A Gall-bladder showing patches of gangrene. The specimen was removed from a man, aged 70 years, who was taken ill on Feb. 7th, 1910, with vomiting, pain, and collapse. The operation was on March 3rd. The recovery was rapid without any escape of bile. There were no calculi in the case. 4. An unusually large Gall-bladder removed from a woman of 43 years. The hepatic surface showed a gangrenous appearance. The gall-stones removed from the gall-bladder were also shown. The patient was taken ill with pain, vomiting, and diarrhœa. There was no history of any previous illness or pain. The gall-bladder reached to the level of the iliac spine. A large stone was impacted in the sacculus seen at the lower end of the gall-bladder and so closed the cystic duct.

Dr. H. M. TURNBULL showed cases of Mesaortitis, apparently an isolated syphilitic manifestation in father and daughter; Mesaortitis in a child aged seven years; Ectopic Chorion Epithelioma.

Mr. T. B. LAYTON showed a specimen of Ununited Fracture of the Tibia and Fibula. He also showed a specimen of Carcinoma of the Skin complicating an Osteomyelitis of the Tibia. The patient, aged 39 years, had fallen 25 years ago. Soon after a large swelling of the leg appeared. Much bone had come away from the wound in the course of time. The limb was amputated below the knee. Microscopic sections showed the condition was carcinomatous.

Mr. LAYTON also exhibited a specimen showing Senile Atrophy of Bone, Fibrous Union of a Fracture of the Femur, and Fibrous Ankylosis of the Knee-joint.

Mr. P. MAYNARD HEATH communicated a case of a Cyst of the Upper Extremity of the Femur. The patient was a boy who was admitted to hospital on Oct. 28th, 1909. One year previous he had fallen and hurt himself in the left groin. Three months later he fell again and broke the neck of his left femur. He was treated

in plaster-of-Paris and had never walked well since. On the day before admission he fell and again broke his femur. On Nov. 17th, 1909, the head of the femur was removed from the acetabulum, as it appeared too small to serve any useful purpose. The upper extremity of the femur was then pushed up into the acetabulum and held in position by a silver wire. The boy was kept in a double Thomas's hip splint for six months. He was now wearing a high boot and walking without crutches.

Mr. HEATH also showed a Post-anal Tumour (? teratoma) from an infant aged nine days. The tumour grew from the cleft between the buttocks just behind the anus and slightly to the right of the middle line by a narrow pedicle. The tumour consisted of a rounded skin-covered mass with two nipple-like processes. It was very soft and elastic.

## MEDICAL SOCIETY OF LIVERPOOL.

*Lepra.—The Rôle of Reflex Inhibition.—Exhibition of Case.*

A MEETING of this society was held on Feb. 23rd, Dr. T. R. BRADSHAW, the President, being in the chair.

Dr. FRANK H. BARENDT read a note on Lepra and exhibited a patient showing the macular type. After having briefly alluded to the nomenclature and history of leprosy, its endemicity in Great Britain during the Middle Ages, he showed on the screen a typical case of the nodular type, and contrasted the two forms of the disease. The patient, by birth a Scotsman, acquired the disease a year ago in South Africa. He first noticed a large anæsthetic patch on the anterior surface of the right thigh, and in the course of six months there appeared patches varying in size in the following sites: right malar region, right side of the nose, chin and lower lip, left pinna, cubital regions, both hypothenar surfaces and gluteal regions. He complained of pain and tingling in the affected areas. In October last he was admitted to the tropical ward of the Royal Southern Hospital under the care of Professor Ronald Ross. Nastin had been administered but with no beneficial result. Locally X rays had been used, especially to the right thigh, the site of the initial patch, and here a distinct improvement was noted, leucocytosis was being produced and nastin would be resumed and the results reported later.—Dr. K. A. GROSSMANN said that the appearance of the patient was not at all that generally met with in the macular form of leprosy. In his experience the colouring of the spots had never been such a deep reddish tint; in the white race they had been pale, mostly towards pink and purple; in the dark races pale, even to white. Nor had he ever seen such a swelling as the coloured part of the lower lip showed. It hardly looked like a mixed form of macular and nodular leprosy. As to treatment, he felt inclined to suggest in this case mercury in large doses.

Professor C. S. SHERRINGTON read a paper on the Rôle of Reflex Inhibition. He said a distinction was drawn between the inhibition which acted upon the skeletal muscles and that which acted on other muscles such as the heart, intestine, and blood-vessels. In these latter cases the muscles were supplied with two kinds of nerves, excitatory and inhibitory, both nerves issuing as efferent from the central nervous system. In the case of the skeletal muscles no efferent inhibitory nerve was provided but only an excitatory efferent—namely, the ordinary motor nerve. But nevertheless inhibition played an even more potent and extensive rôle in controlling skeletal muscles than it did in regard to any other kind of muscle. Its mode of action was, however, always reflex, and it inhibited the muscle by inhibiting the histo-neurone which actuated the muscle. The main purposes which this reflex inhibition served in its control of skeletal muscles were as follows: 1. It cut short the contraction of one set of muscles when another set was called into play. It thus helped, and indeed was an essential factor for, the transition from one reflex action to another. It also guarded and maintained a reflex already in operation by preventing its being interrupted by other stimuli which would disturb it; it did so by inhibiting the influence that those stimuli would otherwise produce on the nerve centres. 2. It graded the degree of intensity of the discharge from nerve centres by diminishing it to any required extent. When two afferent nerves, one excitatory and the other inhibitory, were concurrently stimulated their effects could be so adjusted as to algebraically sum. In this way inhibition made itself apparent as a graduated moderating influence by which the required discharge from any motor centre could be adjusted with delicacy to any required intensity. 3. Reflex inhibition exhibited itself in the taxis of a number of important reflexes, such as those of stepping and respiration and eyeball movements in a form in which, while the protagonistic muscle contracted the antagonistic relaxed, the relaxation being due to central inhibition of the histo-neurones of the latter. This applied apparently universally to true antagonists, but not to pseudantagonists. Pseudantagonists were dealt with by identical innervations. 4. Inhibition was the main means by which rhythmic reflexes were produced; this occurred in the following way; to take, for instance, the rhythmic reflex of stepping. One phase of the rhythmic reflex was excited, and then its very execution produced a stimulus which evoked a reflex inhibition, cutting that phase short and interrupting the action of the stimulus which excited it; the inhibition then was removed in virtue of the movement which caused it having under the inhibition lapsed. The original stimulus thus became operative again. And so the rhythmic reflex was maintained, rhythmically repeated inhibition being a main factor in its production. 5. Inhibition was followed on its withdrawal by a great augmentation of activity of the inhibited centre. This was called post-inhibitory rebound. This post-inhibitory rebound is responsible for one of the two phases of various diphasic reflexes, such as stepping, mastication, respiration, &c. Post-inhibitory rebound was very weak and irregular when the afferent nerves of the muscles had been destroyed. In other words, in tabetic muscles or rather in tabetic spinal centres the normal rebound occurred feebly or not at all. In the tabetic patient its place had to be taken by voluntary effort. 6. The drug strychnine had as its peculiar effect the conversion of reflex inhibition into excitation. Tetanus toxin and rabies virus had the same effect. These agents, therefore, worked havoc with the elemental coördination of the skeletal muscles, changing reciprocal innervations into identical innervations. Hence in tetanus patients the greater the effort made to open the jaw the more tightly was the jaw closed, and in the hydrophobia patient the greater the attempt made by the sufferer to inhibit his inspiration in order to swallow the deeper and more prolonged the inspiration which, contrary to his desire, ensued, inhibition being converted by the virus into excitation.

Dr. C. J. MCALISTER showed a patient suffering from Tabes, who had been treated by salvarsan with much benefit. The patient had acquired syphilis six years ago, the symptoms of tabes being first noticed four years ago. These were lightning pains, marked unsteadiness in gait, nocturnal incontinence, loss of the knee-jerks, &c. In one eye there was old iritis, in the other iridioplegia, and there were tertiary ulcers on the side. On Jan. 19th salvarsan was given intravenously. The injection was followed by some transitory constitutional disturbances, but manifest improvement. The pains, ataxia, and incoördination were greatly relieved, also disturbance of sensation was less marked, and the patient was able to walk a considerable distance.—Dr. A. GORDAN GULLAN was not surprised at the improvement, since many cases of the disease were greatly benefited by mercury, if this was given in the early stages and continued for a long period.—Dr. W. B. WARRINGTON briefly mentioned the very divergent views which were held on the question of the antispecific treatment of tabes.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 2nd, Dr. F. Hinds, the President, being in the chair.—Mr. H. H. Taylor showed a Skiagram of a Piece of Steel from an instrument in the Eye of a patient on whom he had had to perform excision. He remarked that in his experience of eye accidents the foreign body was always from the instrument, not from the substance against which the instrument struck, and he also commented on the great rapidity with which the eyeball became inflamed in these cases.—Mr. W. Barrington Prowse showed: (1) Skiagrams of some Fractures at the Wrist, which showed that the styloid process generally was broken in cases of Colles's fracture; (2) a case of Scoliosis in a girl aged 10 years, which had started at three years of age; (3) a Stone in the Bladder which had not been detected by sounding; (4) a case of Deformity

of the Knee due to tuberculous disease; (5) Unerupted Canines; and (6) a case of Gastroptosis in which the colon and stomach were outlined by bismuth.—Dr. H. Nethersole Fletcher showed a photograph of a man from whom he had removed a large ulcerating lipoma, weighing 6½ pounds, from the scapular region. It had been suspected to be malignant, but this was not so.—Dr. R. J. Ryle showed two cases, brother and sister, with Upward Dislocation of the Lens, on whom he had performed needling.—Dr. Walter Broadbent showed a man with an Aneurysm of the Aorta, who had come to him simply complaining of difficulty in swallowing. If a bougie had been passed it would probably have perforated the sac. There was marked pulsation to the right of the sternum in the second and third spaces.—Dr. C. F. Bailey exhibited skiagrams of: (1) Stone in the Ureter; and (2) Osteo-arthritis of the Knee, showing calcification of the synovial membrane.—Dr. A. J. Hutchison read a paper on the Nystagmus Tests for Examining the Functional Activity of the Semicircular Canals. He described the rotatory, caloric, and pressure tests, remarking that the caloric was the most generally applicable. He entered into the diagnosis between labyrinthine and cerebellar disease by means of these tests, stating that at present the whole subject was chiefly of interest to otologists, and that even in otological cases the tests must be taken along with other and better-established methods of examination, and that they should be very well marked if much weight was to be attached to them. They would, he thought, prove to be of considerable value (1) in examining patients before performing mastoid operations for chronic middle-ear suppuration by enabling an opinion to be formed as to whether the suppuration was limited to the middle-ear or had opened into the labyrinth; (2) whether it had destroyed the vestibular apparatus or not; (3) whether it had spread beyond the labyrinth or not; and (4) sometimes they might be useful in confirming a diagnosis of nerve deafness. He concluded by remarking that the whole subject was yet young, and it was probably too soon to state what were the limitations and what were the possibilities of development of this new method of diagnosis.—Dr. A. G. Bate read a paper entitled "The Ductless Glands in Action and Interaction." The chief facts to which he drew attention were as follows. In the anatomy of the glands, the striking arrangement of the pituitary, thyroid, parathyroids, all as outgrowths of the branchial region; the differentiation of each set of glands into two divisions which are anatomically in juxtaposition, but are of different origin, function, and histology; the existence of a chromaffin system in connexion with the sympathetic, of which the medulla of the adrenals forms a part; the histological similarity of the thyroid, parathyroid, and adrenal glands with different parts of the pituitary. In connexion with the physiology of the glands, the relation of some of the ductless ones to the metabolism of different elements, the thyroid to iodine, the parathyroid to calcium, and the pituitary to phosphorus, was commented on, and clinically the vital importance of each of the ductless glands and their connexion in pathology, each one with a separate and serious disorder of metabolism, was insisted on.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 21st, Dr. W. Mitchell being in the chair.—The following specimens and cases were shown:—Dr. F. W. Eurich: (1) Microscopical demonstration; (2) specimens from a case of Gastro-intestinal Anthrax; and (3) Purulent Meningitis.—Dr. T. Jason Wood: (1) Multiple Vesical Calculi; (2) a Large Gall-stone; (3) Unruptured Tubal Gestation; (4) Malignant Growth of Colon (two specimens); and (5) Fibroid Uterus.—Mr. J. Basil Hall: Fibroid Uterus with Carcinoma of Rectum.—Dr. S. Lodge: A case of Locomotor Ataxy with Cervical and Lumbar Involvement.—Dr. Eurich read notes of some cases of Hysteria simulating Dementia.

THE INTERNATIONAL HYGIENE EXHIBITION, DRESDEN, 1911.—Sir T. Vezey Strong, the Lord Mayor of London, has consented to become the President of the British National Committee for this Exhibition, and has issued an appeal for subscriptions towards the erection and equipment of a British Pavilion. Of the £10,000 required for the purpose over £5000 has already been subscribed. Cheques should be sent to Lord Ilkeston, the treasurer, 47, Victoria-street, London, S.W.

# Reviews and Notices of Books.

*A Text-book of Medicine.* By G. DIEULAFOY, Professor of Clinical Medicine at the Faculté de Médecine de Paris, Physician to the Hôtel Dieu; Membre de l'Académie de Médecine. Authorised English Translation from the fifteenth edition of "Manuel de Pathologie Interne," by V. E. COLLINS, M.D. Lond., M.R.C.S. Eng., L.R.C.P. Lond., and J. A. LIEBMANN, Ph.D., M.A., LL.D. In two volumes. London: Baillière, Tindall, and Cox. 1910. Pp. 2081. Price 25*s.* net for the two volumes.

A TEXT-BOOK on medicine by so distinguished a clinician as Professor Dieulafoy should be of special interest and value, not only as representative of French teaching on medicine, but also as the work of a physician of wide experience. The esteem in which this book is held in France may be judged when it is seen that this translation is made from the fifteenth French edition. It has, moreover, been translated into several other European languages. In a preface specially written for the English edition Professor Dieulafoy expresses his satisfaction at seeing his work translated into English. He also pays a tribute to the contributions of English workers to the advancement of medicine, and states that, following the example of his venerated master Trousseau, he has often dipped into English medical literature. This is a modest way of stating the position. It is obvious that Professor Dieulafoy has a wide knowledge of English medicine and the views of British authorities are often quoted. At the outset we may affirm that this book is a most useful one and the translators have performed a notable service in rendering it available in readable English.

The tendency in modern text-books of medicine is to describe in detail the general characters of diseases in systematic or categorical arrangement, whereas the older text-books, such as those of Trousseau and Watson, were written in descriptive style and were truly works on clinical medicine, since the characters of the disease were illustrated by special cases rather than by collected summaries of many cases elevated into an abstraction. Professor Dieulafoy's method combines both of these methods, since, although the systematic method is adopted as the general basis, the symptoms are often brought out descriptively by means of real or hypothetical instances. This gives a somewhat original and at the same time an attractive character to the book, rendering it easy to read.

The first volume commences with the consideration of diseases of the respiratory system, which are dealt with under their appropriate headings, often at considerable length. Syphilitic affections of the nose, larynx, trachea, and lung are described in much more detail than is usual in systematic works on medicine in this country. In connexion with pulmonary syphilis Professor Dieulafoy differentiates no less than six different forms and quotes illustrative cases. In a suspected case of pulmonary tuberculosis in which, after repeated examinations of the sputum, the tubercle bacillus is not found, he strongly urges the application of antisyphilitic treatment. In describing diseases of the lung less stress is laid upon primary congestion of the lungs than is often the case in French text-books, but Professor Dieulafoy differentiates a condition which he terms inflammation of the chest. In this disease, which does not find a place in our nosology, he states that hyperæmic and inflammatory elements are differently combined, and that the lung, bronchi, pleura, and muscular walls of the thorax may all be involved. It must be confessed that the description given is not convincing, and Professor Dieulafoy himself mentions that Grasset regards this supposed clinical entity as an

attenuated pneumococcal infection. The descriptions given of the forms of pulmonary tuberculosis are very full and interesting, although the terminology even in the translation is somewhat different to that commonly in use in this country. The word phthisis, for example, indicates the last phase of tuberculous lesions in general. In regard to treatment, the use of tuberculin is dismissed with brief consideration and its employment condemned. No mention is made of its administration in small doses or of its control by opsonic methods. An interesting section is that devoted to what is called false tuberculosis of the lung, which contains a valuable description of pulmonary aspergillosis. Hydatid cyst of the lung is also discussed at some length, together with its diagnosis and treatment. The expectoration of cartilaginous, bony, and calcareous bodies is elevated to the dignity of a special section under the title of broncho-pulmonary lithiasis, and the occurrence of crises of bronchial or pulmonary colic is described. Diseases of the pleura have been the subject of special research on the part of Professor Dieulafoy and, as might have been expected, they are described with admirable clearness and in exhaustive fashion. The descriptions of sero-fibrinous pleurisy and of the indications for paracentesis are masterly and authoritative. The characters of hæmorrhagic pleurisy are described and four different groups are separated with different causation. The difficult subject of interlobar empyema is dealt with fully, and some valuable information is given in regard to the clinical characters of this condition and its diagnosis. A separate form of pleurisy is described under the heading of mediastinal pleurisy.

The section on diseases of the heart calls for but little comment. The subject is treated upon ordinary lines and the descriptions given are clear and practical. Little or no reference is made to recent work upon His's bundle and upon the complex question of arrhythmia. Aortic stenosis is but briefly and inadequately described, and in connexion with tricuspid regurgitation it is a little surprising to find reflex spasm of the pulmonary vessels given as a cause of functional inefficiency of that valve. The treatment of valvular lesions is fully considered, and the recommendations given are characterised by their practical and useful nature. Exophthalmic goitre is included among neuroses of the heart, and a long and interesting account is given of this condition. Professor Dieulafoy concludes in regard to treatment that it is impossible at present to give surgical measures the preference over medical.

Diseases of the digestive system occupy nearly half the first volume and are dealt with in the exhaustive and original manner which characterises Professor Dieulafoy's work. It is impossible to do more than refer briefly to some of the special features of this section. The subject of diphtheria is treated at great length, and the importance of a bacteriological diagnosis in every case is urged. There is an interesting description of other membranous exudates in the pharynx, including those due to Brisou's coccus, streptococci, staphylococci, pneumococci, the colon bacillus, micrococcus tetragenus, and syphilis. Appendicitis and its numerous complications are treated exhaustively. In regard to the pathogenesis of this condition Professor Dieulafoy maintains that it results from "the transformation of part of the appendicular canal into a closed cavity, which becomes a focus of infection and intoxication, due to the increased virulence of the imprisoned microbes." He is insistent in urging immediate operation in all cases of appendicitis, and most strongly condemns waiting for a quiet interval. On the other hand, he is careful to discuss conditions of pseudo-appendicitis in which operation is unnecessary. A clear and full account is given of hypertrophic tuberculoma of the cæcum, and some interesting cases of this condition are recorded. In connexion with diseases of the peritoneum, various forms of primary peritonitis, notably those due to the pneumococcus and the streptococcus, are described. The subject of cirrhosis of the liver is dealt with in a lucid and interesting manner, and an interesting section deals with the curability of this condition and of the associated ascites.

The second volume commences with the study of diseases of the urinary system. The subject of nephritis and its varieties is discussed at some length, and the various views given in regard to their etiology and pathology are carefully outlined. Professor Dieulafoy describes a form which he calls toxic appendicular nephritis. The surgical treatment of nephritis is carefully discussed in an interesting section. Renal syphilis and renal calculi are fully and carefully described. Reference is made in connexion with the symptoms of large fixed calculi in the kidney to the description by Sydenham of his own symptoms.

Diseases of the nervous system are next dealt with. These are well classified and are described in clear and simple fashion. Many illustrative cases from the practice of Professor Dieulafoy and his colleagues are given in more or less detail, and authorities are frequently quoted. In connexion with aphasia, the various forms of this condition are described on conventional lines, and then the new doctrine in regard to aphasia as introduced by Marie is described. One section is devoted to a discussion of the medico-surgical errors in regard to cerebral localisation. It is maintained that there is no symptom or sign to enable a differentiation to be made between Jacksonian epilepsy due to a lesion of the Rolandic area, or to one of the frontal region. Under the general heading of neuroses, hysteria is described in some detail; also a condition to which the name of cerebro-cardiac neuropathy, or Krishaber's disease, is applied. The subject of tetany is dealt with very briefly, and the rather heterodox suggestion is made that some cases may be due to Nicolaier's bacillus.

General and infectious diseases are discussed under the following headings: Eruptive Fevers, Typhoid Diseases, Infectious Diseases Proper to Man, and Infective Diseases Common to Man and Animals. Diseases of the spleen are described next and then the pathology of the blood. Under the heading of Chlorosis, a condition called by Professor Dieulafoy chloro-Brightism is described. It appears to consist of the ordinary symptoms of chlorosis, together with puffiness of the face, œdema of ths eyelids, dead fingers, epistaxis, and cramps in the calves. It is affirmed that a rigid milk diet is of great value in the treatment of such cases. Rheumatic and dystrophic diseases are next discussed. This section contains a very full account of diabetes and its treatment. Under the heading of Parasitic Infections only trichinosis and filariasis are described. Diseases affecting the locomotor system, venereal diseases, and the intoxications occupy the concluding sections. There are also three small appendices dealing with special forms of treatment.

Professor Dieulafoy's book affords an interesting presentation of French practice in medicine and is well worth study. We have read it with great interest, as it is both original and suggestive, and it must be helpful to the practitioner, since it is especially calculated to afford light in regard to obscure and rare cases.

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*A Text-book of the Practice of Medicine.* By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College, Physician to the Medico-Chirurgical Hospital, Philadelphia. Illustrated. Ninth edition. London and Philadelphia: W. B. Saunders Company. Pp. 1326. Price 24s.

A WORK which has reached the ninth edition needs no preface from us as to its nature and scope; suffice it to say that the book is intended to introduce the student to the present state of the knowledge of the practice of medicine

in general and of the diagnosis, differential diagnosis, and treatment of disease in particular.

The aim of the author in producing a new edition is to add the most important practical advances since the date of the previous issue, at the same time much of the text that has become more or less obsolete has been eliminated, thus obviating any material increase in the size of the volume. Controversial points have been, for the most part wisely, omitted from consideration, and the author has dwelt in detail on the practical aspects of medical affections which are most likely to aid practitioners and students in diagnosis and treatment. As this work is naturally intended mainly for American students, the section on tropical diseases has been somewhat enlarged, so as to meet the steadily increasing need of knowledge in this branch of internal medicine. Among the conditions and diseases newly discussed in this volume are: filaria Philippinensis, chronic purpura, leucanæmia, acute pneumonokoniosis, hereditary cerebellar ataxia (Marie and Nonne), myatonia congenita, and adiposis tuberosa simplex. New and "rewritten matter" also includes the following: The action of Flexner's and Wassermann's serum in the treatment of cerebrospinal meningitis, Kelling's method or the hæmolytic serum test in gastric carcinoma, certain new theories on the causes of uræmia, traumatic neuroses, and symptoms of combined system sclerosis. Numerous other subjects receive brief attention, so that the work has been thoroughly brought up to date.

This text-book is complete in all respects; if it possesses no marked superiority over others published in America or in this country, it does not fall behind the best of them.

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*Pathological Anatomy Plates.* Reproduced from fresh preparations. With explanatory anatomical and clinical text by ALFRED KAST, M.D., Professor of Clinical Medicine, Hamburg; formerly Director of the Hamburg State Hospitals. Assisted by EUG. FRAENKEL, M.D., Professor of Anatomy, General Hospital, Hamburg-Eppendorf; and THEODOR RUMPEL, M.D., Senior Physician, General Hospital, Hamburg-Eppendorf. English translation by FRANCIS C. PURSER, M.D. Dub., F.R.C.P. Irel., Assistant Physician, Richmond, Whitworth, and Hardwicke Hospitals, Dublin. With Preface by J. LORRAIN SMITH, M.D. Edin., Professor of Pathology, University of Manchester. Complete in 26 parts. London: Baillière, Tindall, and Cox. 1910. Price 5 marks per part; single plates, 1.50 marks.

THIS work consists of a large number of plates illustrating the appearances of fresh specimens of the common abnormal conditions of the various systems and organs of the body. It is published in 26 parts, each containing from four to six plates, with explanatory notes in German, English, Italian, and Russian. These notes comprise in most cases brief clinical records of the cases from which the specimens were derived, with a description of the post-mortem appearances, and more or less full details in regard to the particular morbid condition shown.

In a few of the plates there are representations of the histological characters of the chief lesions, but for the most part only gross changes are illustrated. The plates are reproduced in colour and are of a high level of attainment as examples of colour printing, since they reproduce with striking fidelity the appearances of post-mortem specimens recently removed. The subjects selected for illustration are also well chosen and comprise examples of pathological conditions affecting the circulatory organs, the osseous system, muscles and tendons, the nervous system, the intestinal tract and peritoneum, the liver, pancreas, spleen and lymphatic glands, the respiratory system, the urinary organs, and the sexual organs. A few rare conditions are included; for example, the appearance of an exanthem in a case of cholera, though since this is the only lesion of the skin which is represented it is a little difficult to understand why it is given. It is also not quite clear to us why an accessory thyroid at the root of the tongue is described under the heading of organs of special sense, and why even if it is so regarded it should be the only representative of these organs to be illustrated. An uncommon condition shown in one plate of the urinary organs is malakoplakia of the bladder. Several good plates illustrative of rickets and infantile scurvy are given, the latter condition being referred to as Möller-Barlow's disease. We have no affection for proper names applied to diseases, and when this terminology is made a battle-ground of priority claims it becomes not only clumsy but irritating.

All the plates are good and we do not single out individual examples for special commendation. In the majority of cases the organs are represented of the natural size, but in a few instances they are slightly reduced. The only description attached to each plate is the name of the condition and of the organ affected in Latin, with a reference letter and number to correspond with the letterpress. If there be a need for an atlas of pathological anatomy this work is well adapted to supply it, but the objection to atlases and plates applies to this one—viz., the danger that the student may rely upon his study of these pictorial representations, which are admittedly admirable in the present instance, instead of using them as a companion to his work in the post-mortem room. A study of morbid anatomy involves other considerations than those of mere naked-eye appearances, such as texture, consistence, and relation to other organs, which no atlas can supply, and even museum specimens are only a poor substitute. As a means of revision before examination, or to recall appearances to practitioners with limited opportunities for post-mortem work, this atlas may be useful, but a little post-graduate study in the post-mortem room is of greater value than prolonged examination of plates, excellent though they are.

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*Practical Bacteriology, Blood Work, and Animal Parasitology, including Bacteriological Keys, Zoological Tables, and Explanatory Clinical Notes.* By E. R. STITT, A.B., Ph.G., M.D., Surgeon, U.S. Navy; Graduate, London School of Tropical Medicine; Associate Professor of Medical Zoology, Philippine Medical School; formerly Instructor in Bacteriology, and Tropical Medicine, U.S. Naval Medical School. Second edition, revised and enlarged, with 91 illustrations. London: H. K. Lewis. 1911. Pp. 345. Price 6*s.* 6*d.* net.

IN our review of the first edition of this book[1] we anticipated that owing to the extremely practical character of the work it was likely to be of service to very many practitioners. This proves to have been the case, for in less than two years this second edition has been called for. The book is founded on the author's experience gained by submitting the methods advised in it to the criticism of a large number of post-graduate workers while under instruction at the American Naval Medical School. Such methods, and such methods only, as were found to be adapted to the requirements of practical, speedy, and satisfactory clinical laboratory diagnosis have been adopted. Apparently this same body of practical surgeons has decided that the usefulness of the work would be increased by the addition of a section dealing with the chemical examination of the urine and of the gastric contents.

A glance at the title shows what a large amount of ground this small manual of some 340 pages essays to cover. By keeping, however, within certain well-defined limits, Dr. Stitt has produced a work of real value. It is not a book for the

[1] THE LANCET, June, 1909, p. 1604.

student, but for one already trained in laboratory technique, and it will be especially valuable to all those who, in the colonies, or in the various services, have to practise without means of ready access to well-filled book-shelves. It should be of use also to those who have to deal with the problems of tropical disease. When the various suggestions made to meet the problem of the overcrowded curriculum are carried out it will be with this type of work, we suppose, that the medical student of the future will be supplied.

In this edition there is no change in the arrangement of the subject-matter, and "keys" or classifications form an essential feature of the work. There have, however, been a good many additions and a thorough revision of the work; it is not a mere reprint. The illustrations have been increased in number, and the spirit of classification found in the text is met with here also. The section on animal parasitology has been rewritten and almost doubled, and a chapter on poisonous snakes, with illustrations, has been added. The increasing importance of the protozoa leads to the inclusion of methods of cultivating and staining these organisms. The chapter dealing with fixation of complement and the methods based on this fixation has been increased, and the phenomena of anaphylaxis now find a place. There are additions, too, in the blood section of the book. A useful new illustration is given of the wing venation in tabanus, stomoxys, and glossina; and in the section on urine there are diagrams of the chief absorption bands.

The book is, as we have indicated, a useful and accurate practical manual, and is well printed and illustrated.

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*Manual of Bacteriology.* By ROBERT MUIR, M.A., M.D. Edin., F.R.C.P. Edin., Professor of Pathology, University of Glasgow; and JAMES RITCHIE, M.A., M.D. Edin., F.R.C.P. Edin., Superintendent of the Royal College of Physicians Laboratory, Edinburgh, formerly Professor of Pathology in the University of Oxford. Fifth edition. With 170 illustrations in the text and 6 coloured plates. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 688. Price 10*s.* 6*d.* net.

WE welcome this new edition of the Manual of Bacteriology. Probably no other work in English is more firmly or deservedly established as the text-book on its subject for the use of the medical student and practitioner. The book is, of course, of service to a wider circle than this, but it is as a work by medical men for students of medicine that it is especially valuable.

It is only three years since the last edition was published,[1] but much progress in bacteriology has been made during this period, and the results are incorporated in the present issue. Once more, too, this feat has been accomplished without any undue increase in the volume. Some 80 pages have been added, and there are four additional illustrations, but the bulk of the volume remains substantially unchanged. New editions do not always deserve to be so-called, but in the present instance it is literally true that there is hardly a chapter which remains unchanged, and in many cases the alterations are very considerable and have involved recasting the entire section. Not only is new information added, but the much more troublesome task of modifying the argument in the light of the new information has not been shirked. In the earlier chapters, dealing with the general biology of microbes and with methods for their study, the matter has been arranged somewhat more logically and systematically. The formulæ of various new special media, such as Martin's gonococcus medium, that for the culture of the bacillus of whooping-cough (Bordet and Gengou), and Sabouraud's medium for ringworm fungi, together with certain recent staining methods, are introduced. Probably the most important addition in this part of the work is the chapter giving methods for the investigation of the changes which are produced in serum by the processes of immunisation and infection. Methods for the estimation of the bactericidal powers of serum, for the carrying-out of hæmolytic tests and other investigations dependent on deviation of complement, are now presented.

There are changes also in the methods of water analysis and in the bacteriology of sewage. In the chapter on B. tuberculosis the methods and results of Much's researches are given, various new media for the isolation of the bacillus are included, and the tuberculin reaction is now treated as part of the general phenomena of supersensitiveness. The recent results obtained by Clegg in the culture of B. lepræ and the frequent occurrence of the Wassermann reaction in leprosy are mentioned. The treatment of the organisms allied to B. typhosus and B. coli has been much altered, and the changes make for greater simplicity and clearness. The changed views on typhoid infection and the importance of carriers are explained, and the paratyphoid and food-poisoning bacilli are treated separately. A general review of the coli-typhoid organisms is finally given, together with a useful tabular statement of the principal reactions of the various members of the group. The diseases due to various spirilla are now collected in one chapter. In the excellent chapter on immunity anaphylaxis is briefly considered, and there is a short section on the serum disease in man. Epidemic poliomyelitis, phlebotomus and typhus fevers occupy appendices.

The form and appearance of the book have not been modified, though the publishers are changed. The printing and paper are quite satisfactory. The illustrations have always been a remarkable feature of the work, and the reproductions seem rather sharper and brighter in this than in the last edition; possibly paper and printing may account for this. A series of admirable drawings by Mr. Richard Muir reproduced in colours have been prefixed to the work. We have no doubt that the new edition will secure the continued and deserved appreciation of all students and teachers of bacteriology.

[1] THE LANCET, Dec. 21st, 1907, p. 1768.

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*The Prevention of Malaria in the Federated Malay States.* By MALCOLM WATSON, M.D. Glasg., D.P.H. Camb., Chief Medical Officer, Estate Hospitals Association, Klang; late Senior District Surgeon, Federated Malay States Medical Service. With Preface by Professor RONALD ROSS, C.B., F.R.S. With 24 illustrations, maps, and charts. Published by the Liverpool School of Tropical Medicine. 1911. Pp. 139. Price 7*s.* 6*d.*

FROM the preface we learn that Dr. Watson was invited by Professor R. Ross to contribute an article to his recently published book on "The Prevention of Malaria," but owing to the amount of material which Dr. Watson had collected it was not found possible to compress it into the space available in Professor Ross's volume. It was therefore decided to issue it as a separate work; and with the assistance of funds subscribed by a number of commercial companies having estates in Malaya, the book has now been published by the Liverpool School of Tropical Medicine. The work is divided into two parts, the first dealing with malaria in the coast towns, and the second with the disease in rural districts. The Federated Malay States possess great natural riches and have an intelligent population; they can also draw upon neighbouring sources of labour. Notwithstanding these advantages progress is greatly hindered by the existence of malaria. The malaria problem here as elsewhere, as our readers are doubtless aware, is largely a financial one. The author has

laboured with great energy and enthusiasm to prevent as far as possible the ravages of this devastating and debilitating malady. He has carried out his campaign for ten years or more, and claims to have proved that the pool-breeding anopheline which transmits malaria on the coast of Malaya and on the flat land can be exterminated by open drainage at a low cost; and that with the extermination of the anopheline malaria has disappeared, the value of the land being greatly increased by the drainage works. Hundreds of square miles of the flat lands have been freed from malaria by simply draining, and by felling the jungle in which anophelines breed. Certain hilly lands intersected by ravines, though opened and drained, remain as malarious as before. In these the transmitting agent is an anopheline (Nyssorhynchus willmori) which, breeding in the streams of the ravines, cannot be driven from them notwithstanding that the streams are kept free from weeds, and which cannot be completely washed out even by the heaviest tropical showers.

Dr. Watson discusses the value of quinine at considerable length, and comes to the conclusion that when it is given regularly in appropriate doses it greatly reduces the sickness and death-rate of those exposed to malaria; but even when persons are taking large doses parasites may be found in their peripheral blood. The value of quinine, moreover, greatly depends on the degree of supervision exercised in its administration. The use of quinine can never, therefore, result in the abolition of malaria, or even make any material reduction in the liability to infection in a malarious locality. As regards special anti-mosquito measures for the stream-breeding anophelines (N. willmori), Dr. Watson recommends that the ravines be thoroughly drained by pipes, from 1½ to 2 feet underground; but he suggests that the most economical and effective method of dealing with malaria on hill estates infested by this particular anopheline will be evolved by the joint work of an entomologist, an engineer, and a medical man. The author is hopeful that with our present knowledge of malaria there will be no difficulty in ultimately eradicating the disease even on the most unhealthy estates. With the disappearance of malaria the solution of the labour problem in Malaya will be attended with comparatively little difficulty. Working on Ross's discovery and on the methods advocated by him, we may, Dr. Watson says, confidently hope to drive out the disease completely from the land. This book is a valuable contribution to the literature of malaria, and ought, in our opinion, to be carefully studied by all who are practically and personally interested in the prevention of the disease.

## LIBRARY TABLE.

*Differential-diagnostische Tabellen der inneren Krankheiten.* (*Differential-diagnostic Tables of Internal Diseases.*) Von J. CEMACH in Wien. Munich: J. F. Lehmann. 21 tables. Price M.3.—A book consisting of tables can obviously present at best a mere skeleton of the subject dealt with. Dr. Cemach disarms criticism by stating in his preface that his tables can only be of value to those who, possessing a good grounding in the general symptomatology and pathology of disease, are desirous of applying their knowledge practically in the diagnosis of the condition of patients. His tables were originally prepared for his own personal use, and are intended for reference in order to facilitate the critical elucidation of the nature of the condition from which a patient is suffering. There are 21 main tables, each one being concerned with diseases of an organ or system, or with a group of fevers. There are in addition a few secondary tables, printed on the back of the others, dealing with certain special conditions, or with symptoms requiring more detailed analysis. In each table the symptoms and physical signs of a number of diseases are classified, and reference is very easy. On the whole, diseases of the blood and of the nervous system lend themselves best to this tabular treatment. Some of the secondary tables are also useful, such as those dealing with the differential diagnosis of asthma, other forms of dyspnœa, ascites, and intestinal obstruction. They suffer, however, from the usual defect of medical tables—viz., they fail to take account of the variability of the manifestations of diseases—in other words, they are too rigid in their analysis. It is obvious that a great deal of labour has been expended in preparing these tables, and if used for the purpose for which the author intended them—i.e., to assist in a rapid review of the clinical characters of a group of diseases with symptoms in common so as to assist in diagnosis—they may be helpful.

*Essays on Duty and Discipline. A Series of Papers on the Training of Children in Relation to Social and National Welfare.* London, New York, Toronto, and Melbourne: Cassell and Company, Limited. 1910.—In this book many papers are reprinted in uniform size from various newspapers and magazines, while addresses are included which have been delivered on various occasions by writers and speakers like well-known persons as the late Professor Friedrich Paulson, Bishop Welldon, Lord Meath, Canon Lyttelton, headmaster of Eton, and Cardinal the Archbishop of Westminster. The dominant note of the book is one of warning. We find in it a lament, unfortunately much needed, over the decay of parental responsibility, the lack of discipline and control of childhood, the loosening of the bonds of legitimate authority, with their inevitable consequences, the prevalent lack of "grit," greed of pleasure, and love of ease. The result of such general deterioration is summarised in the following words of Isabel D. Marris: "History teaches us what is the result, upon a nation, of a love of pleasure and luxury, self-pleasing, and lack of self-control. The laws that have always governed the world are not likely to be altered for the special benefit of the British race. If we, as a nation, follow the same path of indulgence that led to the downfall of Rome and Greece, we English people will just as surely be ruined by our own faults, or conquered by a more disciplined nation, as even the Romans and the Greeks." The pessimism is overdone. None the less, while it would probably be impossible to find any single person, maybe even among the writers themselves, who would agree with all the views expressed in the book, it is certain that many of the papers present material worthy of consideration.

*Transactions of the International Swedenborg Congress held in Connexion with the Celebration of the Swedenborg Society's Centenary in London, July, 1910.* London: The Swedenborg Society. 1910. Pp. 374.—This volume contains the papers read before the Congress, and a brief record of its proceedings. The Congress was attended by representatives from the United Kingdom, the United States of America, Canada, Australia, India, France, Germany, Austria, Switzerland, Spain, Sweden, Norway, Belgium, and Holland. The opening address of the President, Mr. E. J. Broadfield, dealt with the life and work of Swedenborg, touching very briefly on the various departments of theology, philosophy, and science which were illumined by this many-sided man, one of the greatest students of his century. The Congress met in three sections, science, philosophy, and theology. In the section of science addresses were presented by Dr. Axel Andersson, from the Upsala University and the Upsala Royal Scientific Society; by Professor Lönnberg, representative of the Royal Swedish Academy of Sciences; Professor Hj Sjögren (superintendent

of the State Museum for Fossil Plants, Stockholm), representative of the Swedish Board of Trade; Commodore Sundström; Professor S. E. Henschen, professor of clinical medicine, Caroline Institute, Stockholm; Professor O. M. Ramström of Upsala University, representative of the Anatomical Institute of Upsala; Mr. A. H. Stroh, and Dr. Max Neuburger, professor of the history of medicine, Vienna University. The perusal of the papers contributed to this section on Swedenborg as a physiologist, a physicist, and cosmologist will surprise many who do not realise how high Swedenborg stood above his contemporaries and how largely his scientific ideas agree with the results of modern researches. It is fascinating to read of his achievements in respect of the physiology of the brain and the construction and functions of the spinal cord. All this is clearly brought out in the papers by Professor Max Neuburger and Professor O. M. Ramström. These thoughts of cerebral localisation for sensory, motor, and psychical activities appear at first glance as exceedingly modern, but even in Swedenborg's time they were not new, for in the first half of the seventeenth century the philosopher Descartes had already expressed a detailed idea of localisation, which Professor Ramström explains and illustrates in his paper on Swedenborg on the Cerebral Cortex. Dr. David Goyder of Bradford contributes a paper on Swedenborg's Deductions on the Functions of the Ductless Glands, bringing them into line with modern observations; and Dr. A. Rabagliati has papers on the Views of Swedenborg on the Motion of the Brain, that it is synchronous with respiration and not with the action of the heart, and on his remarkable scientific anticipations. This collection of papers will be preserved by the followers and admirers of Emanuel Swedenborg as a complete and interesting history of his achievements, deductions, and inspirations.

*On Acute Intestinal Toxæmia in Infants.* An Experimenta Investigation of the Etiology and Pathology of Epidemic or Summer Diarrhœa. By RALPH VINCENT, M.D. Durh., M.R.C.P.Lond., Senior Physician and Director of the Research Laboratory, the Infants Hospital, London. An Address delivered before the Glasgow Obstetrical and Gynæcological Society on Nov. 23rd, 1910. London: Baillière, Tindall, and Cox. 1911. Pp. 83. Price 3*s.* 6*d.* net.—Dr. Ralph Vincent propounds his views as to the nature of the condition of epidemic or summer diarrhœa, and gives the evidence upon which they are based. He objects to the name by which this condition is usually designated, since he claims that diarrhœa is not an essential symptom, and further that the disease is in no sense an infectious one, and that it cannot be conveyed by contagion. As a result of some experiments on young kittens and of observations upon the disease in children, Dr. Vincent concludes that so-called epidemic or summer diarrhœa, or acute intestinal toxæmia as he prefers to call it, is a disease caused by the absorption of poisons produced by the action of certain putrefactive organisms, which though normally present in the intestinal canal are in normal circumstances unable to produce their effects, since they are inert in an acid medium. The organisms which he discusses in this connexion are bacillus subtilis, bacillus mesentericus bacillus mesentericus vulgatus, and bacillus proteus vulgaris. Dr. Vincent believes that cooking the milk which an infant is fed upon is an important factor in the genesis of the disease. He claims that the organisms producing lactic acid are thereby killed, and thus an important check upon putrefactive processes is thrown out of action. He urges the necessity of securing a pure milk-supply, so that infants may be fed upon raw milk. He recommends the refrigeration of milk at the farms immediately after milking, and its transference to the town in insulated churns. We agree that the collection, transport, and distribution of much of our milk-supply require revision. Other of Dr. Vincent's views are in many ways less easy to support, but if they are heterodox they are also the outcome of a thoughtful study of the problems connected with infant feeding.

## JOURNALS AND MAGAZINES.

*Dublin Journal of Medical Science.*—In the March number Dr. T. Gillman Moorhead gives some notes of a fatal case of myasthenia gravis in which a complete post-mortem examination was obtained. The findings post mortem were thymus persistent, with two well-defined lobes extending down over the pericardium. Microscopically it was normal but contained no eosinophile cells. Thyroid enlarged and more cellular than normal. Kidney slightly congested, and showing parenchymatous changes; both ovaries enlarged and cystic. Other viscera, including red marrow and pituitary body, also spinal cord, medulla, pons, central nuclei, and cortex in the Rolandic region of the brain, normal macroscopically and microscopically. The masseter and pectoralis major muscles appeared normal, but there was some atrophy of the levator palpebræ superioris. No lymphorrhages were found. A consideration of the facts makes the author think that in the future physiologists and pathologists should seek for an explanation of both normal and abnormal metabolic changes more in a study of the inter-relationships of organs and of the effects which the products of one produce upon the functions of another than in the study of the individual organs as isolated structures. Epidemic pneumonia is studied by Dr. Allman J. Powell, who enunciates the view that it is possible that at one time the pneumococcus was an organism of much higher virulence than at the present day, and occasionally it may revert to the former type, producing, when it does so, the epidemic form of pneumonia, "pneumonic fever." Physicians may yet see the day when reversion to the original type may become the rule and pneumonia be classed as a highly infectious fever. Dr. Boyd Barry discusses congenital fistulæ and Dr. James F. Clarke influenza.

*Edinburgh Medical Journal.*—Dr. G. A. Gibson contributes in the March number the introduction to a discussion on arterial pressure at the Glasgow Medico-Chirurgical Society on Nov. 30th, 1910, in which are discussed the definition of terms, the influences at work, the methods of investigation, possible fallacies, arterial pressure in health, arterial pressure in disease, and the treatment of changes in pressure. Dr. Edwin Matthew considers the use of the iodides in high blood pressure and arterio-sclerosis, and concludes that iodides have a marked hypotensive action in high blood pressure without arterio-sclerosis, but none in advanced arterio-sclerosis with high blood pressure. They are vaso-dilators, and to produce a beneficial action in hypertension 10 grains of the potassium salt should be the initial dose, to be increased rapidly if necessary. The organic iodides in the therapeutic doses recommended contain too little iodine to be efficient, and sajodin in corresponding doses should be substituted only in cases in which the iodides are contra-indicated by alimentary disorders. Mr. David M. Greig considers four cases of congenital high scapula, in one of which there was an absence and defective condition of certain ribs, together with a lumbo-sacral hypertrichosis.

ASSOCIATION FOR PROMOTING THE TRAINING AND SUPPLY OF MIDWIVES.—The seventh annual meeting will be held by permission of Lady Brassey at 24, Park-lane, W., to-day (Friday), March 10th, at 3.30 P.M., when the chair will be taken by H.R.H. Princess Christian of Schleswig-Holstein.

# Reports and Analytical Records
FROM
# THE LANCET LABORATORY.

## OMNOPON.

(THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL-LANE, LONDON, E.C.)

OMNOPON is the outcome of a suggestion that the total alkaloids of opium might give a combination of effects of special value in certain cases. The suggestion appears to be amply justified judging from the favourable results of its use which have been reported. In our own columns (Feb. 11th, 1911), Mr. C. Louis Leipoldt gave an interesting account of his experience of the value of omnopon in anæsthesia, the omnopon being used as a preliminary to the administration of the general anæsthetic. The innovation is due to Professor H. Sahli, director of the medical clinic in Berne. Omnopon contains the total alkaloids of opium, and quite a number of definite alkaloids have been separated. These, in omnopon, occur as soluble chlorides. The preparation appears as an amorphous yellowish-brown powder dissolving readily in water. For administration it may be obtained in the form of tablets, each 1/10 grain, or of tubes of powder 1/5 grain. In the fluid form omnopon is contained in ampoules, the dose being 1 c.c., which is equal to 1/3 grain of omnopon; 1/5 grain of omnopon is equivalent to 1 grain opium B.P., 15 minims tinctura opii B.P., ½ grain extractum opii B.P., or 15 minims extract. opii liq. B.P. Mr. Leipoldt states that the initial stage of induction of anæsthesia when using omnopon is almost ideal, the patients are absolutely tranquil, and the calming and quieting effect of the drug is much more marked than is the case with scopomorphine. There is no struggling or excitement, the patients breathe deeply and regularly, the pulse is full and slow, while there is an absence of all signs of negativism, and once the case is "under" a very small amount of anæsthetic suffices to keep it in a suitably relaxed condition for the surgeon. On the continent omnopon is known by the name pantopon, the two preparations being identical.

## THERMAL SPRINGS OF BRITISH COLUMBIA.

(ENGLISH AGENCY: D. HATCHER, KINFAUNS, ASHFORD, MIDDLESEX.)

Specimens of waters taken from three springs situated in the Rocky Mountains of British Columbia have been submitted to us for analysis and the results are of interest. The springs are situated in the Sinclair pass in the valley of the Columbia river, East Kootenay. Now that a branch of the Canadian Pacific Railway is opening up this country there is a prospect of the springs being developed for hydrotherapeutic purposes. The samples sent to us were marked A, B, and C, their temperatures at the time they were drawn being respectively 115°, 114°, and 103° F. The mineral constituents present according to our analysis are set out in the following table:—

*Grains per Gallon.*

| | A. | B. | C. |
|---|---|---|---|
| Calcium sulphate | 36·17 | 34·26 | 33·11 |
| Magnesium sulphate | 11·20 | 10·90 | 9·80 |
| Aluminium sulphate | 7·04 | *Nil.* | *Nil.* |
| Sodium chloride | 5·00 | 2·70 | 1·16 |
| Silica | 2·66 | 2·59 | 1·82 |
| Strontium sulphate | 1·70 | 3·36 | 3·40 |
| Calcium carbonate | 1·12 | 6·55 | 5·85 |
| | 64·89 | 60·36 | 55·14 |

Speaking generally, it will be seen that the waters resemble, physically and chemically, the famous springs at Bath. The mineral constituents, at all events, are of the same kind, while the temperatures of the three British Columbia waters agree exactly with those exhibited by three of the thermal waters at Bath. We may conclude, therefore, that these waters from British Columbia and those of Bath will possess therapeutic properties in common. The Bath waters are best known in the treatment of chronic gouty and rheumatic affections and in certain skin disorders. It is interesting, having regard to the facts of analysis, that the British Columbia springs have a considerable local reputation amongst the Indians and settlers chiefly for the cure of rheumatism and skin diseases. The waters show a remarkable degree of organic purity. B and C contained a small but distinct amount of sulphuretted hydrogen, the presence of which, however, is probably due to a partial reduction of the sulphates. We could find no lithia, but strontium was characteristic in all. The waters belong clearly to the class known as thermal earthy calcareous waters. It would be interesting to ascertain whether the water gives off rare gases, as is the case with Bath water, or whether, as is probable, they show radio-active properties, which, of course, can only be determined by careful examination at the source.

## CONCENTRATED GRAPE JUICE.

(CESARE RIGHINI, RIVOLI, ITALY, AND 2, MARLBOROUGH-HILL, ST. JOHN'S WOOD, LONDON, N.W.)

We have not previously examined grape juice which has been so successfully concentrated as this specimen. We understand that the water in the juice has been withdrawn by a freezing process. The concentration may be pushed far enough to produce at length a solid product having the appearance and consistence of crystallised honey. The advantage of this process is that the rarer constituents of the juice are retained, whereas sterilisation by heat, as is well known, removes coagulable bodies. The flavour is excellent, delicately acid, and strongly reminiscent of the luscious grape. On analysis we obtained the following results: moisture, 14·76 per cent.; mineral matter, 0·18 per cent.; protein, 0·17 per cent.; volatile acidity, *nil*; tartaric acid, 0·75 per cent.; grape sugar, 84·14 per cent. In addition to the above we found evidence also of the presence of phosphorus in organic form, whilst, of course, phosphates occurred in the ash, together with decided amounts of iron and manganese. The grape juice, further, is prepared in the form of a jelly which has a very pleasing and attractive flavour, and it is also soothing to the throat. It is obvious that these preparations are particularly well adapted for therapeutic and dietetic use.

## OZET BATHS.

(THE FABRA COMPANY, LIMITED, 24, MINORIES, LONDON, E.C.)

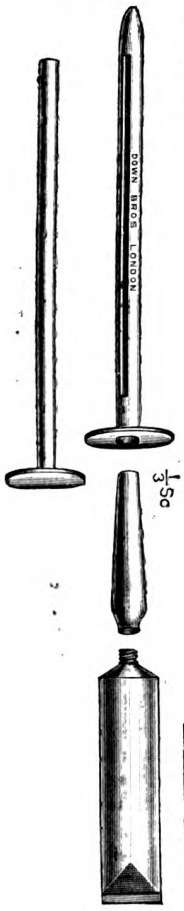
A bath effervescing with oxygen gas sounds attractive, but hitherto it has not been convenient to prepare. The Ozet baths, however, are simple enough and effective. Their composition is based on the fact that a stable peroxide may be made to give up its extra oxygen atom by being brought into contact with a "catalysator." In preparing the oxygen bath, or the oxygen gas-brush as it has been called, all that has to be done is to distribute the peroxide throughout the water in the bath, and then the catalysator is spread in the same manner and the water stirred thoroughly. The patient then enters the bath. The water soon assumes a milky appearance due to the disengagement of minute bubbles of oxygen gas. At the same time myriads of bubbles are formed on and discharged from the patient's skin. As the disengagement of the oxygen proceeds, which is steady and regular, the water assumes a brownish tinge due to the reduction of manganese present in the catalysator. The mixture, however, does not stain nor does it deposit within the time commonly prescribed for immersion. It is stated that one charge will give off 22 litres of oxygen gas. The indications of oxygen baths are somewhat wide, but so far the method has been tried in cardiac disease, rheumatism, gout, skin diseases, and in neurasthenia and in gynæcological practice. The innovation is of interest and merits careful trial.

# New Inventions.

## URETHRAL AND RECTAL OINTMENT APPLICATORS.

I HAVE found the instruments depicted in the accompanying engravings a most efficient means for the application of ointments to the urethra and rectum. They are an improvement on those at present in use, and possess the advantage of simplicity. Each instrument consists of: a metal tube with lateral slits, the lower end being closed with a conically shaped screw; a metal obturator equal in diameter to the internal diameter of the tube; and a metal nozzle with a universal screw at one end which can be screwed on to any ordinary collapsible tube.

FIG. 1.




In using the urethral applicator (Fig. 1) the patient is placed on a couch and the anterior urethra washed out with a pint of antiseptic solution such as hydrogen peroxide 5 per cent., potassium permanganate 1 in 2000, or mercury perchloride 1 in 6000 (a 4-ounce syringe fitted with rubber nozzle should be used). The instrument is sterilised and lubricated with glycerine and is passed without its obturator as far as the bulb (sometimes into the posterior urethra). A nozzle is then attached to a collapsible tube containing the ointment to be used and inserted into the urethral tube, as it lies in the urethra, squeezing the collapsible tube. The tube can be partially filled with the ointment. If the ointment should require liquefaction the nozzle may be heated in the flame of a bunsen burner. Having introduced the ointment the metal obturator is passed gradually. The ointment now exudes through the lateral slits of the urethral tube and the entire instrument is rotated in the urethra two or three times, so as to spread the ointment over the urethral surface. The urethra may be massaged on the surface of the instrument for two or three minutes, starting at the perineal scrotal junction and working up to the fossa navicularis. After removing the instrument the glans penis should be covered with cotton wool, which should be retained until the next urination.

FIG. 2.

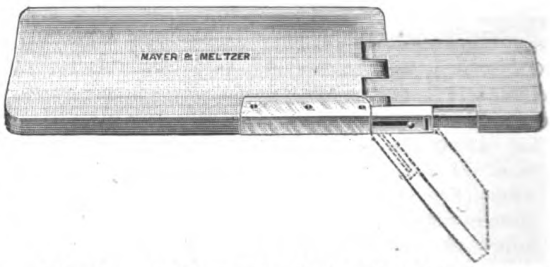
The rectal instrument (Fig. 2) is sterilised and lubricated with glycerine and passed with its obturator, and the obturator is then withdrawn. The rectal tube is filled with the ointment to be used by means of the nozzle attached to a collapsible tube. The obturator is then passed, forcing the ointment into the rectum through the lateral slits of the tube, and the entire instrument is rotated in the rectum so as to spread the ointment over the rectal surface.

Messrs. Down Bros., 21 and 23, St. Thomas's-street, London, S.E., are the makers.

Dublin. ANDREW CHARLES, F.R.C.S. Irel.

## IMPROVED SPLINT FOR COLLES'S FRACTURE.

THE illustration given below represents a splint that I have designed for the treatment of Colles's fracture. The method of using the splint is as follows. The hand piece of the front splint is locked by the brass slide, then the splints are padded and applied in the usual way, care being taken that the back splint does not go beyond the wrist-joint, and that the hinge of the front splint just corresponds with the joint. The bandage which is now applied must not go beyond the wrist-joint, and when this bandage has been fixed a second bandage should be put on extending to the fingers. When it is deemed desirable to move the wrist-joint, all that is necessary is that the second bandage should be removed, then the




brass slide is pushed forward, which will enable the hand-piece to be turned back and the joint manipulated as desired. The advantages claimed for the splint are: 1. It secures movement of the joint without interfering with the fracture. 2. It leaves the fingers free for voluntary movement. 3. It deviates the hand to the ulnar border. 4. By being bevelled it corrects the displacement of the radius forwards. 5. It can be applied to either arm.

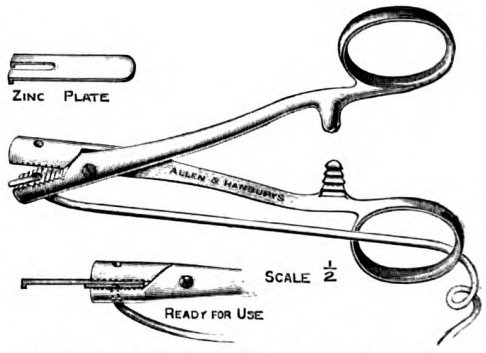
The splints are made in three sizes by Messrs. Mayer and Meltzer, 71, Great Portland-street, London, W.

G. M. DAWKIN, M.R.C.S. Eng., L.R.C.P. Lond.

Pontypridd.

## A NEW CLAMP FOR USE WITH PLATE ELECTRODES.

THIS electrode clamp I have found most useful in the treatment of piles by zinc-mercury ions. For this purpose I take a piece of sheet zinc and cut the electrode to fit the case. Messrs. Allen and Hanburys, of Wigmore-street, London, W., who made the clamp from my pattern, now, however, also supply suitable electrodes for use with the instrument. In the treatment of piles I use a zinc plate about 2 inches long and $\frac{3}{8}$ inch wide, with a slit about $\frac{1}{2}$ inch long and $\frac{1}{8}$ inch wide, cut out at the distal end, thus forming two prongs, the tips of which are bent at right angles into hooks. The object of these hooks is to hold the electrode in the position in which it is first placed, thus ensuring the full reaction taking place all over the area treated, and that of the slit to allow of a view of a portion of the pile under treatment, thus giving the operator his colour index. This zinc electrode I amalgamate with metallic mercury while local anæsthesia is being obtained by means of tampons soaked in cocaine solution. To obtain a direct contact, I bare the end of the




conductor from the positive pole and pass it through the hole drilled in the clamp. The zinc-mercury electrode is then placed in position and the clamp closed, firmly pressing the copper wire against the zinc. The patient now being ready and the piles having been well strained down the electrode is applied to the part to be treated and the operation carried out in the usual manner. I have found this method very useful also in treating ulcers which are in a position difficult to reach with saturated tampons.

ALFRED J. H. ILES, M.R.C.S. Eng., L.R.C.P. Lond.

Taunton.

# THE LANCET.

*LONDON: SATURDAY, MARCH 11, 1911.*


## State Insurance against Sickness and Invalidity.

THE comprehensive survey of the economic and social conditions of the people of England and Wales which constitutes the report (Majority and Minority documents) of the Royal Commission on the Poor-laws, has revealed the comparative failure in many directions of existing systems of Poor-law medical relief, medical charities, and contract medical practice, and has created a growing demand from the public for the better provision of medical attendance for the wage-earning classes. In the report it is disclosed that a large proportion of the poorer classes do not obtain that prompt and efficient medical attendance which it is to the interest of the community that they should receive; and it is now believed that were the necessary organisation in existence these people, with a little help from the State, could provide themselves with efficient medical service by some scheme of insurance. Since the appearance of the Poor-law report the Government has made known that it has under consideration a scheme of State sickness insurance. There is no certainty as yet that this will include provision for medical attendance, but the belief is general that such will be the case, and there have been statements in the press purporting to give details of the proposals of the Chancellor of the Exchequer for State insurance against sickness and invalidity, based upon the result of a number of private conferences between Mr. LLOYD GEORGE and the members of certain friendly societies. In answering a question recently asked by Mr. BOOTH in the House of Commons, Mr. HOBHOUSE replied that the reports on this matter were issued entirely without the authority and knowledge of the Chancellor of the Exchequer, but he did not deny the accuracy of them. The main features of the scheme are the compulsory insurance of the whole working-class population of the country between 16 and 70 years of age whose incomes are below the income-tax level of £160 a year against sickness and invalidity to a minimum weekly amount of 5*s.*; the acceptance of the risks of all lives good and bad; and the establishment of a Central Administrative Council composed of representatives of the Government, the friendly societies, and the employers of labour to deal with all questions which may arise under the working of the scheme.

In view of the serious extent to which the interests of medical practitioners may be affected by the adoption of schemes of medical attendance under friendly societies' control, and in preparation for the probable eventuality of being consulted by the authorities before any Government scheme is definitely proposed, as well as with the useful purpose of directing the minds of legislators and the public along desirable and satisfactory lines, the British Medical Association, through a committee of its Council, has prepared and submitted to its divisions a report on the "Organisation of Medical Attendance on the Provident or Insurance Principle," and is desirous of obtaining the opinion of the medical profession before adopting a final attitude in supporting or opposing the various plans which will suggest themselves. The report is a valuable and instructive document divided into four sections. Section A deals with the reasons which make it necessary for the medical profession to ensure that the views of medical practitioners shall be ascertained and their interests respected, and contains a paragraph defining the attitude which the profession, in the opinion of the Association, should adopt at the present juncture. It has to be considered, says the report, whether simple resistance to any provident medical organisation undertaken by the community is likely to be of any avail, and whether it might not cause the community to seek other methods of making the desired provision which would be even less satisfactory to the profession. The alternative recommended by the Minority Report of the Poor-law Commission—namely, the employment of a few whole-time or part-time officers, selected by local health authorities to carry out the work of treating the sick poor, which would thus be taken entirely out of the hands of independent private practitioners, is not regarded in their report now made by the committee of the Council of the British Medical Association as desirable either in the interests of the profession or the public, and affords an additional reason for not throwing obstacles in the way of the development of medical services on provident or insurance lines. Section B deals with the general considerations by which the action of the Association must be guided, which is of necessity bound up with previous declarations of its policy. Section C, which forms the largest part of the report, deals with questions affecting the actual organisation of a medical service on an insurance or provident basis. It is a consideration of the constitution of the bodies which may control and carry out the detailed management of the provident service, the part to be taken by the medical profession in such control and management, a definition of the persons for whose requirements the service is to provide, of the benefits to be provided, the sources and amount of contributions to the insurance fund, the principles of selection of medical practitioners employed to attend the insured, and the method and amount of remuneration of those engaged in the work. Section D is a *résumé* of the possible effects of the scheme in the interests of the medical profession and the community. There are indications in the report of the line of action which the committee of the Council of the Association, which prepared the report, considers it desirable that the members should take, but the decision on all questions must be left to the divisions whose opinions have been

asked. This is well, for no action of the Association is likely to be successful that does not carry with it the force of a large body of medical opinion throughout the country, nor is any plan likely to receive a hearing from the Government that does not take into consideration the interests of public bodies, friendly societies, or organisations which at present provide to a limited extent those benefits which it is proposed to extend to the whole necessitous population. The committee emphasises the great importance of not prematurely attempting to enforce a policy on which there is not already general agreement before the course of events from the public standpoint has declared itself, but on certain questions it is regarded as important that the profession should make its views known as soon as practicable. We agree cordially with this attitude.

New methods and new organisations cannot be brought into working without dislocating those in present operation, and without adversely affecting the interests of one or more sections of the community. It is indeed probable that the position of the independent medical practitioner in attendance upon working-class patients will be seriously changed whatever scheme may be ultimately chosen to provide necessitous people with relief at the public expense for their physical needs, but it does not follow that his financial interests will be adversely affected. The total medical assistance provided probably will be much larger than is at present given, and in proportion to the extent of this increase the medical profession should benefit. If to the increase of work demanded be added the certainty of payment for work done, at present an unknown quantity, it will be seen that there are possibilities of advantage to the profession which should be recognised and secured. Whether there will be disadvantages sufficient to annul these will depend largely upon the principles and ideas which underlie any scheme that may be brought about. It is, nevertheless, important if defects exist that they should be pointed out, and an attempt made to prevent the adoption of schemes which are defective and vicious in principle in favour of such schemes as may be defective only in detail and organisation; for whereas the latter may be amended after adoption, the former are not susceptible of such treatment. Very much to the point in this connexion are the remarks of Sir ARTHUR DOWNES in his comment on the Poor-law proposals of the Executive Committee of the County Councils Association, contained in the new edition of Mr. CHARLES BOOTH'S volume on Poor-law Reform which is about to be issued. Whatever proposals may ultimately come to be adopted for medical assistance in the relief of distress, it is very ardently to be hoped that no needless confusion of functions will take place, and that the treatment of the sick will be left as now, a personal matter between practitioner and patient in all cases where it is possible to allow a free choice. There are circumstances where this may not be possible. At the same time it is equally important to point out the danger of placing the whole administrative control of a system of sick insurance with provision for medical attendance in the hands of lay organisations such as the friendly societies and philanthropic bodies.

## The Medical Witness.

THE unsatisfactory position occupied by the scientific witness who is summoned to give evidence in a court of law, whether in civil or in criminal proceedings, is keenly felt by members of the medical profession who are compelled by circumstances, frequently beyond their control, to submit to the ordeal. The matter dealt with may be fitly a subject of controversy, conflicting opinions may reasonably exist, and views may rightly be expressed with regard to it which differ from their own, but their evidence is extracted from them and laid before the tribunal by laymen, the advocates in the case; and the tribunal itself, whether it consist of a judge or magistrate, or of a judge assisted by a jury, has no special qualification to enable it to come to a right decision. In order to remedy a state of affairs which should admit of amelioration, even if perfection may be unattainable, various suggestions have been made. These include one which in effect would involve the abolition of the medical expert witness and the employment of medical advisers appointed by the Crown to examine into and decide upon medical questions, or at any rate to advise the court with regard to them. Among other recent expressions of opinion upon this matter we have before us the report of an address recently delivered before the Academy of Medicine, Ontario, by Mr. Justice W. R. RIDDEL of the High Court of that province.

In discussing "The Medical Man as a Witness" the learned judge refers to the appointing of medical men to make reports to the court, and we are told that in certain criminal cases this is now the practice in Ontario. When there is any reason to suspect the sanity of a criminal two experienced alienists are sent to examine him and report. They are not advocates, and their whole duty is to determine the exact fact. They are at the disposal of the defence as well as of the prosecution. So, too, in cases of poisoning an analysis is made at the instance of the Crown. But even in these cases neither party is bound to accept as conclusive the evidence offered by these experts. Mr. Justice RIDDEL considers it a most dangerous practice to hold any person bound by the opinion of any expert, however able and honest. Medicine is an advancing science, and the official expert may fall behind the younger and non-official authority. A litigant should be at liberty to contest the opinion of an expert in a science which is living and growing, and it must be that other than official experts may be called. This, if we accept Mr. Justice RIDDEL'S view, is fatal to any idea of an official, individual or collective, being appointed as a standing referee upon scientific questions to the exclusion of evidence to be adduced by the parties. His view, moreover, is a perfectly just one. Litigants do not seek the law courts, as a rule, from any wish to do so. We may describe some persons as naturally litigious, or define some claims as "bogus," but we must admit at the same time that the defendant in a civil action goes into court because, rightly or wrongly, someone has sued him, and that the accused in a criminal prosecution is not in the dock by any wish of his own. The Crown in turn prosecutes because of the duty to do so imposed upon it by the constitution, and the plaintiff

who seeks damages does so because, in his view, at any rate in the majority of instances, he has a right to enforce which another denies. Could we without grave injustice, and without risking that confidence in our courts which is a source of pride to us all, say to one of the persons suggested above when his case approaches trial, "You may call any witnesses you choose as to other matters and may testify on your own behalf, but for all medical evidence, or at any rate for medical expert evidence, you must take the man the Crown has selected and abide by his opinion on your case"? This is the position so far as the question of excluding medical evidence adduced by the parties is concerned. The possible introduction of a medical assessor to advise the court where a conflict of medical evidence is expected is another matter. Presumably, if such a state of things were to be brought about the medical assessor and the judge would determine medical questions without the aid of a jury so far as those issues were concerned, and such a system would in many ways be far more satisfactory than the present one.

We have spoken of the assessor as advising the court rather than as deciding the point at issue, because we feel that on the whole it is best that the decision should in form be that of the tribunal charged with the responsibility of the whole trial, and we include in the word "trial" the determination of issues under the Workmen's Compensation Act and other matters to which technically, perhaps, the word trial does not apply. The question of who should decide a question of medical evidence, in the sense of being the person whose judgment is publicly proclaimed upon it, is not quite so easy to answer as those may think who would have a medical expert as sole judge in medical matters. The honoured position occupied by our courts is due in a large degree to a not very easily defined mental attitude of the community known as "public confidence." This may, to some extent, be misplaced, or exaggerated, or due to indifference and acquiescence in existing conditions. So far as our jury system is concerned, no thoughtful person who watches the course of litigation attentively can say that it is perfect, independently of those cases in which scientific evidence has to be considered, and no medical man who gives evidence in a court of law, or who reads reports of trials in which medical issues are decided, can claim that the common or, indeed, the special jury is qualified to express an opinion on medical topics, or that the judge himself, with the advantage of legal training and experience gained as an advocate, is of necessity to be preferred. The object, however, to be aimed at is to replace an unsatisfactory system with a better one, and with one which will be so manifestly and certainly better that the general public will have confidence in it, as well as the medical profession, and those persons who may be qualified by education and mental capacity to discriminate. It is also desirable that the weight of responsibility should be shared, and if litigants and the public should look upon the decision of fact as one arrived at by a trained lawyer and a trained scientist jointly the result would probably be its acceptance, with less tendency to question its correctness than if it were that of the latter only.

We have alluded to the need for the assent of the general public, and we use the term in a wide sense. Persons accused of crimes and litigants who claim under the Workmen's Compensation Act do not constitute the most socially or intellectually important class of those with regard to whom scientific evidence is given in courts of law. They belong, however, to sections of the community whose confidence in the administration of justice must be retained, equally with that of their more influential fellow citizens, if justice is to be administered with dignity and acquiesced in with loyalty. The probable attitude of those occupying judicial positions has also to be considered and of the members of the legal profession who practise before them. From such indications as are available it would appear that the increased employment of the medical assessor to assist the judge in the determination of medical issues would be welcomed by these, but that the exclusion of the medical witness would be condemned, and that the procedure desired is that of the assessor guiding the judge in his decision upon particular points. Reference in this connexion may be made to the instructive discussion which followed an interesting paper upon the Workmen's Compensation Act read by Dr. R. J. COLLIE before the Medico-Legal Society on March 23rd, 1909. Several county court judges spoke and bore testimony to the assistance received by them from medical referees as assessors, and the late Sir JOSEPH WALTON, as chairman of the meeting, added his support to their views.

We may take it that the legal profession would approve of the assistance of medical assessors in suitable cases. But can there be evolved no better system of elucidating medical questions in courts of law which would obtain the full confidence of the medical profession? There can be little doubt that the circumstances in which evidence is now given are not satisfactory to medical witnesses, and are not regarded by the profession in general as leading with certainty to the establishment of the truth. The object of any innovation, however, must be to produce something not only new but better. In this connexion we are of the opinion that the presence of a medical assessor on the bench would be welcomed by medical witnesses while giving evidence, or by those medical witnesses, at any rate, whose opinions on such a topic are worthy of consideration. The medical profession, however, would not, we believe, accept for a moment the introduction of any system which enabled questions relating to the physical conditions of their patients to be determined for purposes of litigation without the patient's medical man being entitled to express and explain his own views upon the subject, by describing the facts which have come under his own observation, and to have expert evidence called to support his conclusions. The present position of uncertainty and dissatisfaction has arisen from the nature of the tribunal before which medical evidence has to be given, and not from any unwillingness of the medical man to enunciate his views and to submit them to the test of cross-examination. He only asks that, if this is to take place, and if his testimony is to be weighed against that of a medical colleague who differs from him, the operation should be performed by machinery capable of fulfilling the task assigned to it; and, if we take into consideration all classes of cases and the contingencies which may arise, he would prefer probably

a tribunal which, in effect, would be composed of a medical man and a judge to the sole arbitrament of an official medical expert. In conclusion, we would submit that extension of the duties of medical referees under the Workmen's Compensation Act, making them necessary assessors to county court judges, would afford an excellent means of testing the value of such assessorship and of introducing it, if it stood the test of practical experience, into other tribunals and into trials of all classes where medical evidence has to be considered. We would, however, point out that, before such a system of assessorship can command the confidence of the medical profession, care must be taken to render the position occupied by the assessor unassailable. He must be a man whose professional qualifications for his post are beyond question, selected on account of his fitness to discharge its duties, a fitness which will not depend only upon the possession of scientific knowledge. In these circumstances the remuneration and dignity of position offered will have to be such as will tempt the best men to leave the profession in which they are distinguishing themselves, just as the emoluments and position of a judgeship in the county courts or in the high court induce a barrister to give up his practice and to accept a judicial appointment.

## Deaf Children.

WE publish to-day the last of the three exceedingly valuable and important articles in which Mr. MACLEOD YEARSLEY, the Medical Inspector of the Deaf Schools of the London County Council, has discussed the education of deaf or of imperfectly hearing children, and has pointed out the methods by which their infirmities may be minimised and their capacities for usefulness and happiness increased in a corresponding ratio. The articles are remarkable for their continual reference of doubtful or disputed questions to the principles of physiology as the only source of safe guidance; and it is not unreasonable to hope that their influence in tending to the establishment of this position may extend beyond the subjects of the particular infirmity with which it is the author's object to deal. We have often pointed out that education, in so far as it is intended to promote the harmonious development of the faculties of the young, is concerned with a strictly physiological process, and can only be intelligently conducted by the light of physiological principles. It is, in fact, or at least it should be, a branch of applied physiology, but in this country at least it has unfortunately fallen much into the hands of persons to whom physiology is a sealed book, and it has consequently been conducted—and too often has this been conspicuous during the last 50 years—in such a manner as to combine the maximum of effort and of expenditure with the minimum of result. Dr. CLEMENT DUKES once called attention to the curious fact that the education of the upper and middle classes of this country is the only pursuit in which persons of no special or ascertained fitness for it, and who have received no special training, are permitted by public opinion to engage; and he might with equal truth have declared that much of the so-called training bestowed upon the teachers of the poor has borne no discoverable relation to the essential character of the duties for which it was supposed to be a preparation. A pupil teacher was "taught" how to "teach" the multiplication table, and it was expected by all concerned that this table would act upon the youthful intelligence like a laminaria tent upon a constricted channel, and that by its own expansion it would mechanically "expand" the intellect of the pupil. It is largely due to American independence of the routine laid down by forefathers, and to American observation and study of the growth of intelligence in the young, that some prospect of a brighter day seems now to be dawning upon us; but that prospect will hardly be fulfilled until there is a definite recognition that the physiologist must teach the teachers. As far, at least, as the recognition of this principle is concerned, we may hope that the work and position of Sir GEORGE NEWMAN at the Education Office, and the increasing influence upon methods of the medical officers of schools, are alike of good augury for the future.

Mr. YEARSLEY'S main contention is that a deaf child comes into the world with a dormant capacity for articulation inherited from millions of generations of ancestors, and ready to spring into activity under the stimulus afforded by the desire to imitate the persons by whom it is surrounded. This stimulus normally appeals, as far as the faculty of speech is concerned, to the nervous centres of the sense of hearing, and to the motor centres which soon form intimate connexions with them; but in the absence or inactivity of the centres of hearing an equivalent, or nearly equivalent, association may be formed with the centres of sight. The sighted but deaf child, instead of listening for sounds and trying to imitate them, watches for facial and lip movements, learns to attach ideas to them and to reproduce them, incidentally in his efforts to do so producing also articulate sounds which hearing persons can understand. The earlier in life the attention of the visual centres is directed towards the facial movements associated with the production of sound the more easy and more complete will become the power of visually discriminating between them, and of reproducing them in such a manner as to produce sounds intelligible to the hearing. It follows that the one essential condition for enabling a deaf child to take its place among hearing and speaking people is that the training of the visual centres in the required direction should be commenced early and continued uninterruptedly. Under Dr. YEARSLEY'S direction important progress in this direction has already been made in the schools for the deaf of the London County Council; but the most striking evidence of the soundness of the principle has so far been derived from American sources. Mr. YEARSLEY refers to the work of the Misses GARRETT at Philadelphia, and the tenth report of the "Home" of these ladies, issued last November, is now before us. The children are admitted at 3 years of age and are transferred to ordinary schools for the hearing at 9 or 10. We have no space for detailed quotation; but the trustees of the home report that their aim is to surround the young deaf children with the same conditions for acquiring articulate speech with which all hearing children are surrounded, the difference being that sight instead of hearing is the medium used. The use of either natural signs, arbitrary signs, or the manual alphabet is strictly prohibited; no one

in the home is, or ever has been, acquainted with either. Appended to the report are many testimonials from teachers and employers, showing that young people educated at the home during early childhood, and passed thence into the ordinary schools for the hearing, have derived the same amount and kind of benefit as hearing children, and are capable of engaging in ordinary industrial occupations, speaking and understanding speech with almost as much readiness as those around them who can hear. From many other American sources similar evidence is obtainable; and it is sufficient to show that, under proper training, the deaf child need neither be suffered to grow up a mute nor in any way be cut off from unrestricted intercourse with his fellow creatures or from participation in their pleasures and pursuits. But all who have had experience of the system concur in the absolute necessity of excluding every description of sign language if complete success is to be obtained; and Mr. YEARSLEY forcibly points out the mischief which has been done by those who have ignorantly endeavoured to combine things which are mutually destructive of one another.

A grave error, which Mr. YEARSLEY'S articles will do much to dispel, is the common belief that deaf children are of inferior intellectual capacity—a belief which could hardly survive a single visit to a well-conducted school for them. The one thing conspicuous about a class of deaf children is their mental alertness and activity. Deprived of hearing, and dependent upon sight for their knowledge of their environment, their bright eyes are fixed upon the teacher or the visitor, their attitudes are erect, their heads well up, and their attention is keenly given to all that they can see around them. So far as our personal experience will carry us, we can also confirm Mr. YEARSLEY'S belief that they are of exceptionally docile and loveable character. It has often been said that the adult deaf take a somewhat roseate view of human nature, and the fact, if fact it be, was explained by FROUDE on the ground that other people reveal only their best sides to them. "It is impossible," he wrote, "to be selfish or worldly down to the level of a hearing trumpet," and it is probable that the deaf child with favourable surroundings is spared the recognition of a good deal of hastiness or petulance on the part both of its elders and of its contemporaries. For those who are less fortunately situated it would be impossible to feel too much compassion; and it is not the least merit of Mr. YEARSLEY'S work that it points to a method by which compassion may be rendered fruitful of good, not only to the deaf themselves, but also to the community. The articles are too valuable and too full of matter to be summarised, and we can only recommend them to the careful study of our readers. We know of no contributions to educational literature which are so manifestly founded upon knowledge, or which so plainly point out the methods by which the majority of a large and hitherto neglected class of the community can be brought into line with the most efficient of their fellow-citizens. Mr. YEARSLEY starts from sound principles, and proceeds to legitimate deductions from them—deductions which he has enjoyed enviable opportunities of seeing justified in practice. As a benefactor to the deaf he will rank with the late Baroness MEYER DE ROTHSCHILD, to whose school, established in 1870 under the management of the late Mr. VAN PRAAGH, and now conducted with great enthusiasm and discrimination by Mr. SIBLEY HAYOCK, he pays a well-deserved and fitting tribute. We have but one criticism of his work, and it is that, when pointing out that oral instruction of the deaf originated in this country, he does injustice to the memory of a great Englishman in attributing it to anyone in the eighteenth century. JOHN WALLIS, Savilian Professor of Geometry at Oxford, and one of the founders of the Royal Society, who, in the words of MACAULAY, "placed the whole system of statics on a new foundation," exhibited to King CHARLES II., and to the Society, in 1663, a "deaf and dumb" youth, named DANIEL WHALLEY, the son of a friend, whom he had taught to speak and to understand speech. WALLIS'S method was applied in a few other cases, and its origin may be traced to his treatise "De Loquela," on the methods of production of articulate sounds. It was therefore no chance discovery, but the ripe fruit of careful and scientific investigation.

# Annotations.

"Ne quid nimis."

## THE DEATH OF PROFESSOR VAN'T HOFF.

BY the death of Professor Van't Hoff at Steglitz, near Berlin, on March 1st, chemical science is bereft of one of its most brilliant exponents. Van't Hoff's great and valuable researches into the realm of stereo-chemistry had their starting-point in the views of Kekulè on structural chemistry. In 1867 the use of models as well as of "graphic" formulæ to represent the linkage of atoms in the molecule came into vogue, when Kekulè pointed out that the models most in favour, consisting of spherical bulbs joined together by rods, were no better than diagrams, since it was impossible to display combination between two atoms by more than one unit of valency, while, further, everything was represented as lying in the same plane. He suggested that by using a sphere to represent the atom of carbon, and four rods to represent its four affinities placed in the directions of four hexahedral axes ending in the faces of a tetrahedron, these difficulties could be got over, and two such models placed together could be used to represent union by one, two, or three units. Van't Hoff developed this idea with most brilliant success. With Van't Hoff, however, must be associated Le Bel, both of whom advanced an identical theory almost simultaneously and independently in 1874. The subject they studied was the arrangement in space of the four atoms or groups united to a tetravalent carbon atom, and they assumed that each of the several atoms or groups with which a carbon atom is united is situated at some point on one of four different lines which are symmetrically arranged in the space surrounding the carbon atom. The existence of isomeric optically active compounds receives a charming explanation on this theory. At all events, it is easy enough to determine, on this assumed arrangement in space of the carbon atoms, whether a compound can exist in only one form or in more forms than one. Out of this grew one of the most beautiful developments of modern chemistry, an explanation of why substances, though being identical in composition—having, that is to say, the same number of atoms in the molecule—yet may exhibit different properties. Van't Hoff worked equally successfully upon the question of solutions. He recognised an analogy existing between

the state of substances in solution and the same in the state of gas, and so the law of Avogadro—that equal volumes of different gases at the same temperature and pressure contain the same number of molecules—was seen to apply to solutions as well as to gases. This development has given considerable impetus to the study of the great physiological processes of the human body. Van't Hoff's record of successful researches is a splendid one, and chemical science is mourning deeply the loss of one of the most distinguished labourers in its field.

## THE MEDICAL BRANCH OF THE NAVY LEAGUE.

IT is no part of our function to engage upon either side in the political controversies of the hour. That, however, does not preclude us from occasionally expressing a word in favour of causes which all healthy-minded citizens must necessarily have at heart. We publish this week a letter from Sir Richard Douglas Powell, in which he draws attention to the existence of a medical branch of the Navy League, and recommends it to the notice of the profession. We are happy to support him. The function of the Navy League is for the most part educational. It endeavours to bring before the citizens of our Motherland and of her dependencies the part which the navy has played in our past history, and our absolute dependence upon it in the present day for our existence as a first-rate power and as a united empire. Endeavours such as these are surely worthy of all the support we can give, and we feel that the medical branch of the Navy League may well be capable of most useful work. The names upon its committee are representative of the larger hospitals, and we sincerely hope that many members of the profession will see their way to joining the branch and widely extending its scope for usefulness.

## PROPER MANAGEMENT OF FOUNDLING CHILDREN.

Dr. Dwight Chapin of New York read before the Section on Pediatrics of the Academy of Medicine at a recent session a paper dealing with the management of foundling children. Dr. Chapin's main argument was that infants should not be kept in large institutions, on account of the fact that when they are massed together they die very quickly. He recommended that foundling infants should be boarded out, and that they should be overlooked in the house in which they have been placed by nurses and medical men. He further proposed that the large institutions and asylums for the care of babies should be abolished and that small collecting stations should be substituted for them. These stations would act merely as clearing houses in which the infant's physical condition might be studied for a day or so. When this had been done and the most suitable food had been decided upon, the infant would be boarded out in the vicinity, where it could be under constant oversight by a physician and a nurse furnished by the station. This plan has been carried into effect by Dr. Chapin on a small scale under the auspices of the Speedwell Society, and a station has been established at Morristown, N.J. In the operation of this work the aim has been to emphasise the following features: 1. Boarding out in a district noted for its healthful conditions. 2. Constant attention to diet and hygiene on the part of a medical man and nurse who are familiar with this class of cases and competent to deal with them. 3. The infants are kept as long as necessary; in fact, until feeding is regulated and digestion and assimilation are improved sufficiently to result in an increase of weight. The work is continued during the entire year. 4. The training in a given neighbourhood of a number of foster-mothers, who by constantly taking such infants into their homes become fairly expert in handling them under conditions totally unlike those offered by the best institutions. The results obtained from the methods practised at the Speedwell Society Station at Morristown have been satisfactory. The death-rate of infants boarded out in this manner has been less by far than in large institutions, and the cost has also been considerably less. The justification of institutional care lies in increase of efficiency by the employment of adequately trained persons at the least possible cost through the concentration of labour and the economic handling of supplies. Its chief objection is the lack of individualism and the blurring of the human personal element by the necessarily machine-like operation of institutional methods. If the plan above suggested should prove on more extended trial to be really less costly than the institutional care of infants, and the process of training numerous professional "mothers" can be extensively followed, it would seem clearly a decided improvement at all points on more usual methods.

## THE WEATHER OF LAST MONTH.

THE general state of the weather of the last month over the British Isles, and to a considerable extent over the continent, underwent a great change after the 13th. During the earlier days there was scarcely any rain, the dry spell which set in about Jan. 12th being continued with only a partial break here and there until the 10th, or for about four weeks. There was, however, in spite of the dryness, little sunshine, and many of the days were marked by mist or a depressing gloom. The temperature, too, was low, and there was sufficient frost to allow a very brief indulgence in skating on some of the shallow waters within a few miles of the metropolis. All parts of the south and south-east of England recorded sharp or severe frost during the first three nights; at Kew Observatory the sheltered thermometer fell as low as 22°, and at Greenwich to 23°. There was also a return of frost for a few nights after the 9th, but the day temperature was then relatively high. With the shift of wind to south and south-west at the beginning of the unsettled period rain fell in some portion of the kingdom every day and on many days over the whole of it, but, as so frequently occurs in this country in winter during unsettled weather, there were several days of brilliant sunshine and many more with quite a fair quantity, while the air, sweeping across the country from the south-west or west, often at the rate of between 20 and 30 miles an hour and sometimes between 35 and 45 miles an hour, had no time to lose its Atlantic mildness, and the temperature of both day and night was much above the ordinary figure for the time of year. The frequent rain was not at all heavy except at times in the West of Scotland, and considered as a whole the aggregate fall was below the normal for February. And the normal February, in spite of the old adage about "fill-dyke," is about the driest month of the 12 in almost all parts of these islands. At Kew Observatory the sheltered thermometer descended below the freezing point on eight nights, and at Greenwich and Hampstead on seven, while on ten afternoons the temperature was as high as 50° or above at Kew and Greenwich and on nine at Hampstead. Owing to the occasional cloudless or nearly cloudless skies after the 11th the sunshine was in excess of the average in some parts of of the kingdom, the excess being especially large in London. At Westminster the total number of hours was 54, or 20 more than the average; at Greenwich the number was 64 hours, or seven more than the average; at Kew 67 hours, also seven more than the average; while at Hampstead, where the observations do not yet afford a trustworthy average, there were 70 hours. The latter

portion of the month was very windy, and the air inhaled in London and the large cities of the Midlands and the North was, only a few hours previously, rushing over the Atlantic or the Bay of Biscay. In the South of Europe the earlier days of the month were cold and fine. Sharp frost was recorded again and again throughout Italy, and on the Riviera the sheltered thermometer fell as low as 27° on the 1st. Italy was, however, much colder than the Riviera, and on the 9th Naples experienced a lower temperature than has London during the whole winter, the thermometer falling to 19°. Further south, at Brindisi, the temperature on the same occasion was as low as 28°, while a furious gale from the north brought a prolonged fall of snow. Palermo and Malta only shared in a very moderate degree in the cold weather, the thermometer rising to between 50° and 55° every day and sometimes going higher, while the weather was generally fine. The last fortnight was very different both in Italy and on the Riviera: the cold wind current died away, and the general state of the sky being fair the sun could assert its growing power, and instead of being frosty the nights became relatively mild, while some of the afternoons were excellent imitations of spring. Temperatures of 60° and above in the shade became almost common, while towards the end of the month the genial warmth of 65° was registered on at least one afternoon, but at Malta and Palermo the approach of spring was even more marked, the thermometer rising to a little above 70°, and a similar figure was recorded on the coast of Algeria. Night frosts were very common at Biarritz until the month was well advanced, but a really cold day was seldom experienced, and although there was less sunshine than on the Riviera the weather was mostly very pleasant. Switzerland and the surrounding part of the continent enjoyed excellent weather for the winter sports, experiencing almost arctic cold until after the middle of the month. The sheltered thermometer dropped to nearly zero Fahrenheit even at ordinary levels, while among the mountains the frost was much more intense. The day-time, which was often very bright, had relatively little effect on the temperature, and for a long period there was nothing resembling a thaw. Subsequently there was a decided increase of temperature, and later in the month rain was more frequent than snow.

## THE DURATION OF INFECTIVITY OF ENTERIC FEVER.

IT is now an accepted fact that in convalescence from certain infectious diseases patients may harbour in their bodies the pathogenic organisms of these diseases, and in that way be a source of danger to other people. In diphtheria the bacillus may be found in the throat for some time after all symptoms of the disease have disappeared. In pulmonary tuberculosis, also, tubercle bacilli may be found in the sputum when all clinical evidence tends to prove that the disease has been arrested. Typhoid carriers are now well known to exist, and it is an important point to ascertain if possible how long patients convalescent from enteric fever may pass typhoid bacilli with their stools and urine. In another column we publish an article by Dr. Alfred Harris dealing with this subject. He states that in order to estimate the length of time during which bacilli may be excreted a routine examination of the stools has been carried out during the last few months in the case of all enteric fever patients treated in the isolation hospital at Southampton. There is considerable difficulty in carrying out such an investigation owing to the multitudes of bacilli which flourish in the intestine, and it is not easy to devise a method by which the colonies of the typhoid bacillus can with certainty be isolated. Dr. Harris explains the methods which have been adopted. The researches of Conradi and Drigalski are well known, and these observers have done much to facilitate the necessary separation of the colonies. Dr. Harris found, however, McConkey's neutral-red bile-salt agar to be the most reliable culture medium. The results of his investigations are shown in tables, and some interesting points arise. One is the great variability which exists in the period when a negative result was obtained. In some instances between 40 and 50 days elapsed before the bacilli disappeared. In one instance a positive result was obtained 78 days after the temperature had become normal. Another point is that the persistence of infection bears no relation to physical signs. For instance, the case already mentioned, in which the bacilli persisted in the stools 78 days, had been a mild one with but little diarrhœa. The whole subject of carriers in infective diseases is a most important one from the point of view of prophylaxis. At present our knowledge is scanty concerning the length of time that the bacilli remain active in various conditions, but with investigations being carried out on the lines which Dr. Harris has adopted the exact danger of infection from this source should become known.

## THE CHILDREN OF ASCLEPIUS AND THE GOOSE.

IN a recent number of the *Archæological Journal of Athens* M. Svoronos publishes a reproduction of a charming ancient Greek statuette representing a boy and a goose, which has recently been added to the city's museum. There are numerous examples from Greek antiquity of these groups; frequently the child is strangling the bird, and hitherto they have been considered merely as a curious artistic conceit. But M. Svoronos argues that really they have a religious and mythological significance. The goose was a sacred bird of Asclepius, and all these goose and child groups, whose original location can be ascertained, come from sanctuaries of Asclepius. The newly-found poems of Herondas describe a similar group in the deity's temple at Cos. M. Svoronos maintains that in these works the boy represents Ianiscos, youngest son of Asclepius, when he is strangling the goose, the bird being a symbol of the pestilence-producing pools and marshes, and so the statues typify the healing of fevers by Asclepius and his family. Other of the groups depict Asclepius himself as an infant, or one of his daughters, with a goose. The Spinario in the Capitol at Rome is, however, he thinks Podalirius, another son of Asclepius. Pliny mentions a famous piece of sculpture by Boethius of a boy strangling a goose, a work which must be later than the one Herondas describes. Probably many of the statuettes are copies of one or other of these works. M. Svoronos has also succeeded in definitely ascribing the figures in the famous Asclepian relief found in 1885 and now in the Athens Museum. The seven personages are: Asclepius, Machaon, Podalirius, Epione, Panacea, Iaso, and two suppliants, the three dogs representing those kept at the shrine of the god.

## SPOROTRICHOSIS.

THE first account of a disease due to a sporothrix was given by Schenck in 1898, who had found it in a patient with multiple subcutaneous abscesses along the course of the lymphatics of the arm. Since then many other cases have been described, chiefly in France and America, but so far as we are aware no certain cases of the disease have hitherto been described in England. In the present issue of THE LANCET Dr. E. von Ofenheim has reported a case which was under his care; the patient suffered from a number of enlarged lymphatic glands in the neck and a swelling over the tibia. The cultures taken from the fluid withdrawn by an aspirator from the swelling

on the tibia grew an organism somewhat like a yeast, but differing from it in several points, and Dr. Ofenheim is inclined to believe that the organism is a sporothrix. So far as can be judged from the data supplied it appears to us that his diagnosis is probably correct. Dr. Ofenheim in his report does not mention whether potassium iodide had been administered to his patient. This drug has a remarkably active effect on sporotrichosis, and it might be well to see whether it has any effect on the case recorded here. It is difficult in these cases to make a diagnosis merely from an examination of the pus withdrawn, but by the cultures it should be possible. Until comparatively recently the fact that a lesion was removed under the influence of potassium iodide was considered to be sufficient to make certain a diagnosis of syphilis, but it is now fully recognised that several other conditions, such as actinomycosis, blastomycosis, and sporotrichosis, also respond readily to this drug.

## PLAGUE AND RODENTS IN CALIFORNIA.

WHILE we are considering how to deal, if in the unfortunate event it should become necessary, with the dissemination of plague in East Anglia, the very same problem is facing our cousins in California, where the ground squirrels have long been known to be seriously infected. Details are given in an interesting paper in the *Military Surgeon* for January, from the pen of Passed Assistant Surgeon W. C. Rucker of the United States Public Health and Marine Hospital Service, from whose account we quote. Plague came to San Francisco in 1900, brought by sugar-ships from Hawaii; they unload in Costa County, 20 miles north of San Francisco, where it was noted in 1901 that a deadly epidemic raged among the ground squirrels (Citellus Beecheyi), "the most prevalent small mammals in that county." No plague infection was found among them at that time. The epidemic almost exterminated them, and they did not again become numerous until 1908. Plague lasted four years in San Francisco, killing 225 people. After 1904 only scattered cases occurred, and these, it was noted, in people who had no chance of infection by rats, but who had shot, or trapped, or eaten ground squirrels. In 1907 plague again broke out, the squirrels were suspected, and in 1908 a large number were examined and four were found to be plague-infected. In 1909 the Public Health and Marine Hospital Service, "which had charge of the plague situation" in California, took the matter in hand, and found infected squirrels in almost all parts of Costa County, also beyond it. Ground squirrels are infected over an area of miles one-seventh of the State of California. They are not themselves very widely distributed, but the wood rat (Neotoma fuscipes), which is found nearly all over the United States, has also been known to be plague-infected, which makes the problem more troublesome. The ground squirrel's flea (Ceratophyllus acutus) transmits plague to rats, and the rat's flea (C. fasciatus) will infect the ground squirrel, and those who catch or cook ground squirrels risk contracting plague from their fleas. The Public Health and Marine Hospital Service are studying the life-history and distribution of the squirrels most carefully, with a view to their eradication by poisons, by encouragement of their natural enemies, and by the use of noxious and explosive gases. A ground squirrel is supposed to eat food to the value of 4*s.* yearly, and this financial loss and the desire to avoid plague are uniting the State and county authorities, the farmers' clubs, and the individual landholders in a combined attack upon the squirrels. The United States has a favourable position for this contest, supported as it is by the permanent Federal organisation and the well-trained officers of the Public Health and Marine Hospital Service, whose efforts will, we trust, achieve success. Passed Assistant Surgeon Rucker's paper should be widely read—perhaps the Society for the Destruction of Vermin might ask his permission to republish it here.

## THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE UNIVERSITY OF LONDON.

AT a recent Comitia of the Royal College of Physicians of London the report of a committee of the College appointed to consider the report dated Feb. 15th, 1910, of the delegates appointed by the Royal Colleges in 1908, was received. The report of Feb. 15th of the joint delegates had reference to the establishment of a system of conjoint examination between the Royal Colleges and the University of London in accordance with Statute 123 of the University.[1] The report suggested that the Royal Colleges should jointly give evidence before the Royal Commission, now sitting to inquire into the working of the reconstructed University, on the present disabilities of the London student; and on the desirability of an association between the Royal Colleges and the University in a scheme for granting, on terms, the medical degrees of the University with the diplomas of the Colleges to the students who have completed at least four years at a London medical school. A scheme as a basis of such negotiation was set out in the report, which concluded with general expressions as to the desirability of the Royal Colleges preserving their autonomy in every other respect. This report was, on March 14th, 1910, referred to a large committee of the College for report to a future meeting of the College on the whole subject, and the large committee has now advised the College that it is, in its opinion, inadvisable that the College should take any steps to promote the scheme of conjoint examinations outlined in the report of the joint delegates. The report of the large committee was adopted, whereby, in our opinion, an excellent opportunity was lost for improving the professional status of the London student.

## MEDICAL OFFICERS' FEES IN INDIA.

THE following revised rules have been issued by the Government of India, applicable to British India and native States, regarding the receipt by medical officers of the Government of fees (including honoraria or presents) which may be offered for services rendered or for professional services in certain cases:—

1. Whenever attendance, whether for an ordinary visit, a consultation, a confinement, or a surgical operation on a ruling chief or his family or dependents, or on an Indian of position who holds a hereditary title conferred or recognised by the Government of a rank not below that of Raja or Nawab, or his family or dependents, involves the absence of a medical officer from his station, he shall be permitted to demand or receive such fees as may be arranged between himself and the person employing him, provided that he does not, without the special permission of the local government, obtained as provided below, demand or receive, in addition to his travelling expenses, a higher fee than Rs.500 (£33 6*s.* 8*d.*) a day for the first three days, and Rs.250 (£16 13*s.* 4*d.*) a day thereafter; the full daily fee being given for every complete period of 24 hours' absence with a proportionate fee for periods of less than 24 hours.

2. For similar attendance not involving absence from his headquarters a medical officer may demand or receive fees in accordance with the scale which he has fixed for his patients generally, and in the case of operations and confinements he may accept fees equal in amount to those current in similar circumstances in the profession in the United Kingdom.

3. Before accepting or demanding for a ruling chief or Indians of position, as referred to in Rule 1, a fee in excess of the rates laid down in the Rules 1 and 2 above, a medical officer must report the case confidentially to the local administrative medical officer, who will obtain unofficially and communicate to him the orders of the local government. When taking the orders of Government administrative medical officers will be careful not to disclose any of the medical particulars of the case.

4. Local governments and administrations shall have full power to dispose of all cases so reported to them, but shall be at liberty to consult the Director-General, Indian Medical Service, or to refer any particular case for the orders of the Government of India.

Granted the necessity for any regulations at all in these

[1] THE LANCET, March 19th, 1910, p. 814.

matters, the Government of India appears to have been advised wisely. Ridiculous restrictions to legitimate practice have been withdrawn, while adherence is assured to a proper scale of charges in the matters of operations and confinements.

## CRIMINAL STATISTICS AND PENAL REFORM.

THE monthly record of the Penal Reform League for March, which has been forwarded to us by the honorary secretary of the league, Captain Arthur J. St. John, takes occasion, in referring to the recently published Blue Book on Criminal Statistics,[1] to discuss the cause of the alleged relaxation in public sentiment with regard to crime, and suggests that one reason for this feeling, so far as it exists, may be found in the somewhat meagre results hitherto attained by our penal methods. In this connexion the high rate of recidivism is instanced as a proof that punishment does not seem to be either deterrent or reformative, and it is asked whether failure may not be due, as has been recently maintained by Mr. Thomas Holmes, secretary of the Howard Association, to the fact that a considerable proportion of recidivists are mentally defective and are quite unamenable to ordinary penal treatment. It is very satisfactory to find that intelligent lay opinion is awakening to this serious failing in our machinery for dealing with the criminal; and it is still more gratifying to observe that the consideration of this point is leading to the further inference that no penal methods can be satisfactory which are not based on an adequate knowledge of the individuality of the criminal. In impressing this view on the public the Penal Reform League should do extremely useful work, and as the league apparently includes in its membership several persons of distinction in the political world, it may perhaps be able to exercise some propagandist influence on our legislators, who, if we may judge from various incidents in the last few years, are in no hurry to recognise the rôle of science in the treatment of the criminal.

## A NEW SIGN OF PLEURITIC EFFUSION.

IN the *Progrès Médical* M. Félix Ramond has called attention to a new sign of pleuritic effusion which he terms "the sign of the spinal muscles." He has found that on the affected side the erector spinæ is in a state of reflex permanent contraction. On inspection of the lumbar region the muscular mass appears more prominent and broader than on the sound side. On palpation the muscles give a sensation of hardness and resistance which may be compared to that of a cord of indiarubber slightly stretched, very different from the softer sensation given by the muscles on the sound side. If the upper attachments of the longissimus at the level of the sixth and seventh dorsal vertebræ be struck with a percussion hammer at a distance of two or three finger-breadths from the middle line the sensation given by palpation of the lumbar region is still more characteristic; the muscles vibrate under the finger and sometimes the contraction is so strong as to be visible. However, this last phenomenon is not so characteristic as the others, for it may be found in patients with exaggerated muscular irritability, particularly cachectic, alcoholic, and neurasthenic persons. These three phenomena, which are obtained by inspection, palpation, and percussion respectively, may all be present together or only the enlargement of the muscular mass may be evident. If the other phenomena seem absent or ill-marked they may be evoked by telling the patient to bend slightly alternately to one side and the other. Normally the spinal muscles on the side to which the body is bent become completely relaxed and soft, while those on the opposite side become tense and hard. In pleuritic effusion, when the body is bent towards the affected side, the muscles on that side do not completely lose their tone, and when the body is bent to the opposite side their hardness increases. In certain cases of pleuritic effusion M. Ramond has found to his surprise that the sign was present in slight degree on the sound side. With this there was marked dulness in Grocco's triangle. In three out of seven such cases he found on paracentesis a little fluid in the pleura which was supposed to be normal. He does not claim that this explains all the cases in which Grocco's sign is present, but he concludes that when the sign of the spinal muscles is present in slight degree on the side supposed to be sound a little effusion on this side may be suspected. The sign persists for three or four weeks after recovery from the pleurisy and may therefore be used for retrospective diagnosis. In some cases it persisted much longer—six months, nine months, and in one case three years. Its persistence is of bad significance and indicates that the inflammatory process has outlasted the effusion, and that recovery is only apparent. M. Ramond has found the sign constant in "primary" pleurisy and present in 94 per cent. of cases of pleurisy complicating old pulmonary tuberculosis. It was present in 3 cases of pleurisy in Bright's disease, but was absent in 3 out of 8 cases of hydrothorax of cardiac origin. It was present in 4 out of 7 cases of empyema. The following case is of particular interest. A youth, aged 19 years, had pain in the side and effusion three weeks after a severe contusion of the thorax. The sign of the spinal muscles was present. Puncture yielded slightly turbid fluid. Subsequently the effusion became purulent and the sign disappeared. It seems, therefore, that the sign has a tendency to disappear as the effusion becomes purulent. The sign seems to be peculiar to pleurisy with effusion and absent in other thoracic affections, though observations on this point are not yet sufficiently numerous. Thus, it was absent in 3 cases of pneumothorax without effusion and in 3 out of 5 cases of pneumonia. In the other 2 cases of pneumonia there was probably some inflammation of the pleura. The value of this new sign is increased by the fact that, excepting dulness, all the signs of pleuritic effusion are more or less inconstant.

## PIONEER MEDICAL WORK IN AUSTRALIA.

IN an address to the members of the Women's Institute last week Miss Amy Hughes, general superintendent of the Queen Victoria's Jubilee Institute for Nurses, gave an interesting sketch of the difficulties of getting and of rendering medical assistance in the outlying townships and scattered hamlets of Australia. Often one farm may be 20 or 30 miles from the next habitation and 130 miles from the railway. Ordinary practice under such conditions is impossible, and Miss Hughes explained that one of the first acts of a medical man after settling in a new township is to open a small hospital. News of this soon spreads to the outlying farms and hamlets, and patients come in either for accidents or illness, glad to avail themselves of the only possible means of receiving medical treatment. Of course symptoms are often aggravated and complications set up by the long journeys over rough roads; but these miniature hospitals are fitted in a remarkably up-to-date manner with modern appliances, while surgery, owing to the prevalence of accidents in the mining and smelting districts, is extensively practised. When the demand exceeds the supply of the four or five beds with which the hospitals commence the State comes to the rescue, and for every £1 raised by the inhabitants of the township

[1] THE LANCET, Feb. 25th, 1911, p. 519.

gives another £1 for expenses of building and maintenance. The medical man can be communicated with by means of the telephone, which is carried to most of the hamlets and settlements, and further to facilitate matters the Government has placed receivers on the line at various points; into these messages may be placed from houses on or near the line, and are collected by the "boundary rider" on his rounds and taken to the nearest call-office. To certain districts a train goes once a fortnight, and even then to reach the settlements beyond the journey has to be finished on camel-back, a circumstance which will surprise many of our readers.

## CAMPING OUT IN TUNISIA.

A CIRCULAR that has reached us from Tunis opens up a pleasant vista of a new form of "rest cure"—viz., camping out in the desert. The season is stated to last from October to May, but personal experience leads us to infer that mid-winter is a by no means agreeable season even in the desert, seeing that though the sun be warm the northern blasts are piercing and the nights are extremely cold. Assuming favourable climatic conditions, we can well imagine that a properly organised excursion would afford a delightful and restful holiday for persons whose vitality has been sapped by social or professional excesses. There remains the question of congenial companions, a risk which it is almost necessary to incur on account of the greatly increased expense when only one or two persons are catered for. The tariff, which for more than three persons is fixed at 40 francs per head per day (rather over 30*s.*), is 80 francs for a single person, 70 francs for each when there are two, and 65 francs when there are three—not exorbitant sums in view of the multiple preparations that have to be made. Tunisia is out of the beaten track, but is perfectly safe for travellers within prescribed limits, and it affords a wide range of objects of interest. There are venerable ruins in abundance, remarkable hot springs, and, above all, the "wide quietness" of the illimitable desert with its ever strange, wandering inhabitants, and its numerous oases. The dry, invigorating air, the marvellous contrasts of sky and sun, the brilliant nights, the trackless sands, the thousand and one incidents of a nomad life, freed as far as may be from the disadvantages inherent thereto, and life absolutely in the open air where the silence is at times almost tangible—these are features which, in conjunction with the total absence of disturbing influences from work-bound climes, constitute a rest-cure in the largest and best sense of the term. From inquiries we have made there is every reason to believe that the scheme is perfectly practicable, and those of our readers to whom a prolonged holiday under these conditions appeals can place themselves in communication with Messrs. Pernull and Myddleton, 39, Avenue Jules Ferry, Tunis.

THE King has approved of the nomination of Mr. J. Pringle, M.B. Aberd., C.M.G., and Mr. J. E. Ker, L.R.C.P. Lond., M.R.C.S. Eng., as members of the Legislative Council of the Island of Jamaica.

IN our list of New Year's honours we omitted to note that Major R. J. Blackham, R.A.M.C., sanitary officer of the First Division, Indian Army, received the Kaiser-i-Hind medal of the Second Class.

COLONIAL MEDICAL SERVICE.—*West African Medical Staff:* Mr. H. C. Jeffreys, medical officer, Sierra Leone, has been transferred to Northern Nigeria, and Dr. C. S. Thompson has been selected for appointment to the staff and assigned to Southern Nigeria.—*Other Colonies and Protectorates:* Dr. E. N. Darwent, resident surgeon of the Colonial Hospital, Trinidad, has been appointed district medical officer, Arima district, Trinidad.

# A FORGOTTEN PROPHECY OF THE MICROBIC THEORY OF INFECTIOUS DISEASE.

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IN 1877 Louis Pasteur, by a series of brilliant generalisations based on innumerable experiments, was able to state that—

> Anthrax is the disease of the bacteridium as trichinosis is the disease of the trichina, as itch is the disease of its special acarus, with this circumstance, however, that in anthrax the parasite can only be seen through a microscope and very much enlarged.

Although the microbic theory thus set forth by the great investigator was built on the knowledge acquired by himself and his contemporaries, it yet had its roots in a more remote generation. Without going back as far as Fracastor,[1] who already in the fifteenth century had some idea of "the seeds of disease," there was in the early part of the eighteenth century a group of men who made more or less confused efforts to associate the new discoveries of microscopic life with the obscure and mysterious phenomena of infection and with the occurrence of epidemics. The clearness and definiteness of the views of one of these writers is, however, very remarkable, and it is strange that a man who foresaw with such distinctness some of the most important modern biological discoveries should have been so completely forgotten.

In the year 1720 there saw the light in London a small volume bearing the title, "A new Theory of Consumptions: more especially of a *Phthisis*, or *Consumption* of the *Lungs*, wherein ..... *Enquiry is made* concerning the Prime, Essential and hitherto accounted Inexplicable *Cause* of that Disease, so very *Endemick* to this Nation ....." by one Benjamin Marten, M.D. In the course of this book Marten sets forth the various hypotheses of the ancients as to the nature of infection, together with the views that were current in his day. Dismissing all these as inadequate, he gives his own conclusions, which the reader will recognise as being neither more nor less than the germ theory of disease as we have it to-day, clearly conceived and applied, not only to consumption, but also, it is interesting to note, to such conditions as syphilis, rheumatism, and leprosy, as well as to small-pox, measles, plague, and the common cold.

In what follows Marten's quaint language and spelling have been preserved, and beyond the addition of headings for the guidance of the modern reader and a few small changes in order the matter is exactly as he wrote it.

### *A General Statement of the Theory.*

The *Original* and *Essential Cause* then, which some content themselves to call a vicious Disposition of the Juices, others a salt Acrimony, others a strange Ferment, others a malignant Humour (all which seem to me dark and unintelligible) may possibly be some certain Species of *Animalcula* or wonderfully minute living Creatures, that, by their peculiar Shape, or disagreeable Parts, are inimical to our Nature; but, however, capable of subsisting in our Juices and Vessels, and which being drove to the Lungs by the Circulation of the Blood, or else generated there from their proper *Ova* or Eggs, with which the Juices may abound, or which possibly being carried about by the Air, may be immediately convey'd to the Lungs by that we draw in, and being there deposited as in a proper *Nidus* or Nest, and being produced into Life, coming to Perfection, or increasing in Bigness, may by their spontaneous Motion, and injurious Parts, stimulating and perhaps wounding or gnawing the tender Vessels of the Lungs, cause all the Disorders that have been mentioned, viz., a more than ordinary Afflux of Humours, upon the Part, Obstruction, Inflammation, Exulceration, and all other the *Phenomena* and deplorable Symptoms of this Disease.

### *The Possibility of Intra-uterine Infection.*

Nay it will not be difficult to suppose it possible, that as the Fluids of our Parents might abound with many Species of *Animalcula*, so the *Ova* or Eggs of them may have been communicated to us, or convey'd into our Fluids with the Nourishment we receiv'd through the *Umbilical* Vessels, even whilst we were in the Womb, and may possibly lie latent in us for a longer or shorter Term of Years, till either our vessels are become of a fit largeness to afford 'em a proper *Nidus* or nest, or our Juices of such a Property as is fit to nourish and produce them into Life.

And thus we may possibly account for several Diseases to which we are liable Hereditarily. This may be one way perhaps by which the Small Pox is convey'd from Parents to Children, from Generation to Generation; which Disease I am not only apt to think is primarily caused by inimicable *Animalcula*, or wonderful minute Animals in our Fluids, but also verily believe, it may be certainly prevented, especially

[1] See Fracastorius, by W. Osler, Proceedings of the Charaka Club, vol. ii., 1904.

in Adults or grown Persons, by destroying the very Essence of the Distemper. .....

### *Specific Diseases due to Specific Organisms: Plague, Small-pox, Rheumatism, Phthisis.*

And as it is reasonable to suppose that there are various Species of *Animalcula*, so of Course they are of various Magnitudes, of different Shapes, and have peculiar Parts ..... so various Diseases, more or less sudden and pernicious may be caused (by them).

For how can we better account for the regular types, the Small Pox, Malignant, and all other Continual and Intermitting Fevers, as well as many other Distempers, keep, and the peculiar Attributes and *Crises*, *etc.*, they have, than by concluding they are severally caused by innumerable *Animalcula*, or exceeding minute Animals that variously offend us according as their Species are different, and as their peculiar Shape and Parts are more or less injurious to our Fluids and Solids. .....

By what has been said, I think ..... there is possibly no Ulcer or ulcerated Matter, but what is stock'd with *Animalcula*, and as these are of different Species and more or less capable of injuring the Parts in which they are bred or lodged, so those Ulcerations may be more or less stubborn or Inveterate.

### *Epidemic Disease in General in both Human Beings and Animals considered in the Light of the Theory.*

And as we may reasonably imagine that each Species of such *Animalcula* or exceeding minute Animals, keep together in vast Numbers, as we find the Species of such Living Creatures as are big enough to be seen by the bare Eye, delight to do, as Shoals of small Fish, and swarms of flying Insects, so we may easily conceive, if this Theory be admitted, how it happens that sometimes a pernicious Disease becomes Epidemick or almost general of a sudden, without respect to either Age or Sex.

How Distempers happen to rage in one Year, or Season of the Year, or in one Country or Part of a Country, more than in another, as the Plague, Pestilential and other Fevers, Small Pox, Measles, and several other Diseases, and how they are spread by Degrees, and are communicated from one Person, and from one Country to another, may by this Theory perhaps be more easily explain'd than by any other.

What way can we better account for Coughs, that become at some particular Times *Epidemical* or almost Universal, and that indifferently as to the Season of the Year, than by this Doctrine? As also for several other Distempers that we find at some Times not only to afflict Men but Destroy Beasts.

It is allow'd by all the Learned, that most Nations are infested with Distempers, that in an especial Manner are more peculiar to them, than to others, yet it is certain that some such Diseases may be, and often are transplanted into Distant Countries, and sometimes flourish as much in a new Climate as in that from whence they came; thus it is generally supposed that *Europe* is indebted to *America* for the Venereal Disease, as I am inform'd that is to *Europe* for the Small Pox, of which we made them a present, in return for the *Grand One* they made us.

If it be once allow'd that the Plague, Pestilential and other *Epidemick* Diseases are caused, and carried on by very minute volatile Insects, we may then easily conceive how they are conveyed to and from Distant Countries or Climates, viz.: by such Volatile *Animalcula* or their *Ova* or Eggs being deposited in the bodies or Cloaths or Goods of Travellers, etc,

### *Leprosy.*

The Plague of Leprosy mention'd in *Holy Writ*, to effect not only the *Jews* but their cloathes, and the very walls of their Houses, (known by greenish or reddish Streaks eat into the Walls, &c.) as described in the 14th chapter of *Leviticus*, was perhaps propagated by means of imperceptible volatile animals.

### *Scabies and Syphilis.*

We find some diseases are apparently communicated from one person to another by Contact or Touching only, of which the Itch and the Venereal Distemper are eminent Instances; that the Essential cause of the former disease, is a vast number of Minute Animals, that by their spontaneous Motion and injurious Parts make Furrows under the *Epidermis* or Scarf Skin, may be demonstrated by viewing through a good Microscope a small Portion of the Humour contained in the little Bladders that arise in that Distemper between the Fingers, &c., in which may be perceived abundance of ill shap'd Creatures, that by nestling under the *Cuticula* or Scarf-skin, stimulate the Nervous Fibres and Cause the troublesome sensation of itching *etc.*

Some of these minute Insects contain'd in a very small Part of that Humour, fixing upon a sound Person's Skin, either by shaking Hands with an Itchy Person, or wiping with the same Towel, or drawing on one of his Gloves &c., will soon insinuate into the Pores, and there increase and multiply and quickly act the same Part in that Person, as in the other, from whence the Disease was received, as innumerable Examples convince us.

And I conceive the latter, or Venereal Disease to be communicated after the same Manner; only as we may conjecture the *Animalcula* abounding in the purulent Matter flowing from the small Ulcers in that Distemper are of a different Species, Shape and Magnitude, from those of the Itch, they are not capable of insinuating themselves into the external Pores of many other Parts of the Body, so easily as into those of the secret Parts, which are large, *&c.*

### *Not All Distempers are of Microbic Origin.*

But I would not be understood to advance that all Distempers are caused by them; I would urge only the possibility and likelihood of their being the Essential Cause of the Plague, Pestilential and other malign Fevers, Small Pox, and some other Diseases as well Chronick as Acute, and particularly of that dreadful one a *Phthisis* which is the peculiar Subject of these Papers.

### *Rheums Predispose to Infection with the Organism of Phthisis.*

I have observed, that sometimes Coughs which seem to threaten an immediate Consumption, cease almost of their own Accord without that Consequence, and leave the Patient in perfect Health. ..... Now if what I have advanced may be allow'd the Reason of this is very plain, because if the body be ..... entirely free from such species of *Animalcula* or very minute Animals, that I imagine to be the Essential Cause of a Phthisis, that Disease, though the Cough is very violent or severe, will not happen: but if on the contrary, the Blood and Juices be charged with such noxious *Animalcula* ..... then a slight Cough may be succeeded by that most dangerous Distemper.

### *The Means by which the Organism of Phthisis enters the Body.*

If the Air we breathe, the Food we eat, or Liquor we drink in common with the rest of Mankind, were full of such minute living Creatures, or their Seed, then we might reasonably suppose that all Persons Breathing, Eating, and Drinking of the same, would in like Manner more or less be liable to the same Distemper, which would in that Case become Epidemical and almost Universal, this therefore we may imagine to happen in the Case of Plagues and Pestilential Distempers, that seize upon whole Cities Towns and Countires, at a Time, but not very likely in the Case of the Disease we now treat of (i.e., Phthisis).

It seems much more probable that the minute Animals or their Seed, which we have suppos'd to be the Essential Cause of a *Phthisis* or Consumption of the lungs, are for the most part either convey'd from Parents to their Offspring Hereditarily, or communicated immediately from distemper'd Persons to sound Ones who are very conversant with them; the first way has been already mentioned, when we were speaking of the Small Pox. ..... The last way, which is properly call'd Infection, we may conceive to be the more reasonable, if we consider how quickly and easily some other Distempers are communicated from one Person to another, as the Itch, Venereal Disease etc., which are yet very far from becoming universal.

It may be therefore very likely, that by an habitual lying in the same bed with a Consumptive Patient, constantly Eating and Drinking with him, or by very frequently conversing so nearly, as to draw in part of the Breath he emits from his Lungs, a Consumption may be caught by a sound Person; for it may be reasonable to suppose that if the Blood and Juices of such distemper'd People, be charg'd with vast quantities of *Animalcula*, as I have conjectur'd, then their profuse Sweats, and their Breath also, may be likewise charg'd with them, or their *Ova* or Eggs, which by that means may possibly be convey'd into the Bodies of those who lie, or are most conversant with them.

It may here probably be objected, that if the Disease is communicated after this Manner, few that come near a Consumptive Person would escape having that Distemper; but in Answer to this I imagine that slightly conversing with Consumptive Patients, is seldom or never sufficient to catch the Disease; there being but few if any of those minute living Creatures or their Eggs communicated in slender Conversations, and which, if they are, may not perhaps, be produced into Life, or be nourished or increased, in the new Station they happen to be cast; besides, we may imagine that some Persons are of such an happy Constitution, that if any of the *Ova* of the inimicable minute Animals that cause a Consumption, happen to get into their Bodies, they may likewise be quickly forc'd out again, through some of the *Emunctories*, before they are produc'd into Life; or else be wholly destroy'd.

### *Metastatic Processes Explained.*

I have already hinted, that most Animals, both of the Air and Water, delight to keep in distinct Species, and are found together in Swarms and Sholes; hence it may be suppos'd that the sudden Translation of some Distempers from one Part of the Body to another, may happen, by some Species of *Animalcula*, that I have conjectured to be the Prime Cause, suddenly removing themselves from the Part they first delighted, or chanc'd to fix in, and most injured, (either by some dislike through Remedies directed to that Part particularly, or some other means) to another, that before was perfectly well.

We may imagine that our Fluids, having great Numbers of the Ova or Eggs of very minute Creatures floating in them, may not possibly be injured thereby, or not to any considerable Degree, until in some of our innumerable Vessels, they meet with a proper *Nidus* or Nest, so as to be produc'd into Life probably in the Shape of an exceeding small Worm, and that in this Form swimming or being circled about in our Juices, they may be able, by stimulating the fibrous Parts of the Blood, preying upon the new made Chyle, and obstructing and nestling in some of our small Vessels or slender Canals, to occasion a tickling Cough, Hectick Heat, and other Symptoms of an approaching Consumption.

They may possibly in length of time, cause larger Obstructions, so as to occasion Tubercles to arise in the Lungs, and as those Creatures, are capable of stimulating the Vessels they so obstruct, we may suppose the Tubercles, Knots or Swellings occasioned thereby, will increase in Magnitude proportionably quicker or slower, and be the sooner or later inflamed; according to which, the Consumption proves either Chronic or Acute.

### *The Nature of Secondary Infection in Phthisis.*

Now when these Tubercles come to Suppuration, or break, and become small Ulcers, it may not be unlikely that the minute Animals which Caus'd all the Mischiefs hitherto mentioned, may now in those Ulcerations, as in proper Places, assume a different external Shape from what they before had, and by their now different parts or Weapons, stimulate more fiercely, and inlarge those Ulcerations, wounding or gnawing the Mouths of the small vessels opening into them, and at length be able, in their new shape, to get into the Mass of Blood and other Juices again, there to act a Part different from what they did before, viz.: stimulate all the nervous fibres of our small vessels to a great degree, and occasion all the Rigors and Horrors we feel, in the beginning of the Fits of Putrid Intermitting Fevers; which Rigors etc., are succeeded by a quick Motion of the Blood, and an Intense Fever, being Nature's Effort (if I may be indulged in the Expression) to throw off her enemy, which at last she does. ..... The body then remains tolerably easy, till the Blood and Juices receive a fresh supply of them, from the Ulceration or Ulcerations in the Lungs, and in such large Quantities, as to be able to produce a new Fit.

Not only had Marten a clear conception of the nature of infectious diseases, but he also foresaw many pathological problems to which the development of that theory has given rise. He takes a very fair and balanced view of the hereditary factor in pulmonary consumption, and he makes suggestions for a theory of immunity. It is also remarkable that while he includes in his group of microbic diseases such

conditions as syphilis and rheumatism, he does not commit himself on the subject of cancer, though aware of the existence of organisms in the discharges from cancerous ulcers.

Marten quotes frequently from the writings of the microscopists whose wonders were then attracting all the scientific world, and the suggestion of his theory may be traced to a remarkable passage by Frederick Slare which, having appeared in 1683, antedated the discovery of bacteria by Leeuwenhoeck which is often referred to the year 1687. In the Philosophical Transactions, Vol. XIII., 1683, p. 93, is "An Abstract of a letter from Dr. Winckler, Chief Physitian of the Prince Palatine ..... to Dr. Fred. Slare ..... containing an account of a Murren in Switzerland." In a postscript to this letter Dr. Slare wrote as follows:—

"I lately received an account of Two Ingenious Travellers who assured me the contagion had reached their quarters on the borders of Poland, having Passed quite through Germany. ..... They told me the contagion was observed to make its progress dayly spreading near two German Miles in twenty-four hours ..... that it continually without intermission made progressive voyages and suffered no neighbouring Parish to escape: so that it did not at the same time infect places at great distances. They added that cattle secured at rack and manger were equally infected with those in the Field. *It were worth the considering whether this infection is not carryed by some volatile Insect that is able to make only such short flights as may amount to such computations.* For the account of the Ancients is very little satisfactory to this Age, who derive it from a blind putrefaction, from incantations of ill men, or from conjunctions of inauspicious Planets. *I wish Mr. Leewenhoeck had been present at some of the dissections of these infected animals, I am perswaded he would have discovered some strange Insect or other in them.*" (Italics by Editor.)

Marten's book appeared in 1720, but was dated "From my House in Theobald's Row near Red Lyon Square in Holbourn, Sep. 1st, 1719," and although a second edition, or rather reprint, appeared in 1722, the book seems to have attracted very little attention from the medical profession of the day, and there are certain indications that the demand which called for a second issue may have been a popular rather than a scientific one.

It is interesting to note how Marten (exactly like Pasteur many years later) used epizootics and the phenomena presented by scabies as an illustration of the parallel nature of the infectious fevers in man.

Information as to the life and personal character of Benjamin Marten is almost wholly lacking. He was not a Member of the Royal College of Physicians, nor does he seem to have been a graduate of either of the English universities. His Latinity was not of a high order, while all, or nearly all, the works from which he quotes were either in English or French, or were available in translations into those languages. He writes, however, a witty and racy English style, and had evidently read carefully the recent scientific literature which had appeared in the vulgar tongues.

I have been unable to find any other works of Benjamin Marten, though there were several contemporary authors bearing the same name. Information concerning so suggestive an author and one of such exceptional foresight would be very welcome, and may, perhaps, be elicited by this short account of his work.[2]

[2] A fuller account of Marten's book has been given by me in the issue of "Janus" for February, 1911.

WORKING-CLASS ORGANISATIONS AND SCHOOL CLINICS.—On March 4th Mr. George Lansbury, M.P., presided at a conference held at Caxton Hall, Westminster, of delegates representing 177 trade unions, independent labour branches, and other working-class organisations to consider the method adopted by the London County Council for dealing with the medical treatment of school children. On the motion of Mr. Pearce of the Hampstead Trades Council, seconded by Miss Benton, a resolution protesting against the present system adopted by the County Council of subsidising London hospitals for the medical treatment of school children was adopted. The resolution included a demand for the establishment of special centres supported by grants from the Imperial Exchequer and adequately staffed with medical men, including dentists and nurses. On the motion of Mr. T. W. Kelly, seconded by Miss MacMillan, it was proposed that all working-class organisations should withdraw their financial support from voluntary hospitals as a protest against this use of the hospitals by the London County Council. This proposition was, however, at the suggestion of the chairman, amended so that it should apply only to hospitals which had made contracts with the London County Council. The motion was then carried.

# THE QUESTION OF COMPULSORY STATE INSURANCE OF EMPLOYERS' LIABILITY UNDER THE WORKMEN'S COMPENSATION ACT, 1906.

BY ALBERT BENTHALL, F.R.C.P. EDIN.

THIS question is in the air, at present in a nebulous condition, without form, and void, but, as it will be of the greatest possible moment to the medical profession, it should be considered in all its bearings before condensation takes place, and it becomes tangible in the form of a Draft Act of Parliament.

For the proper consideration of the question the working of the present Act must be borne in mind, with its admitted faults and difficulties, so that the experience gained in the last 3½ years may be used to advantage in the formation of a scheme, certain to come sooner or later, and perhaps sooner than many expect. Compulsory insurance must take one of two forms: (1) that all employers shall be compelled to insure with a department of the State; (2) or only those who do not insure with an insurance company which has complied with the regulations of the Board of Trade, and which is therefore approved and accredited by the State.

To anyone conversant with the working of the Workmen's Compensation Acts of 1897 and 1906, and the losses which have been incurred by various insurance companies, who have in the past insured employers against liability under these Acts, there would appear to be many difficulties in the way of insurance by the State, unless the State is willing to sustain the immense loss heretofore made by insurers, and a large additional loss also. It is clear that the State could not exercise the intimate individual and personal attention to claims which has been applied by the various offices, also it could not attempt to select business or decline unprofitable risks. Here a large question arises. If every one has to insure with the State, the State will fix its own rates, and these might be absolutely prohibitory if there were no competition. On the other hand, if the present insurance offices of undoubted standing are allowed to continue their business they should be placed on all fours with the State, and the regulations applying to State insurance should be applied to them. I should like to point out some of the prominent defects of the present Act which entail unavoidable but perfectly useless loss to every one concerned—employers, those who insure them, and the workmen.

1. Notice of injury: (*a*) At present a medical certificate is not required. (*b*) Need not be sent in reasonable time. *Note.*—1. Any person claiming on a club has to provide a medical certificate, and any workman unable to work in consequence of accidental injury must require medical treatment. It would therefore be no hardship to require a short medical certificate on a form to be obtained at any post-office, to be sent with the notice of accident. 2. Notice of accident should be given at once if possible, but certainly within 14 days.

2. There is no power to insist in proper medical treatment being obtained. *Note.*—If a man is sufficiently injured to be able to claim under the Act he should be compelled to seek the advice and submit himself to the treatment of a qualified medical practitioner or attend at some hospital.

3. There is no method of determining whether a workman is fit or unfit for work, nor can the workman obtain his half pay if it is withheld except by expensive litigation, entailing heavy costs. *Note.*—Employers are therefore severely hit, and many *bonâ fide* injured workmen suffer.

4. There is no power of reference to a medical referee except by a judge's order or consent of *both* parties. *Note.*—It is a well-known fact that if one side has a doubtful case a medical reference is objected to, as it is considered better to threaten expensive proceedings, in the hope of getting a settlement.

5. There is no power of contracting out of the Act with the consent of a registrar by previously injured, diseased, weakly, or aged persons, who are thereby shut out from employment. *Note.*—An increasing number of persons are being thrown out of employment and become a charge on the rates when they are anxious and willing to do such work as is within their power.

6. The registrars have no machinery for obtaining the advice of medical referees when required to register or refuse

registration of settlement. *Note.*—Registrars have to accept or refuse registration of settlements, without any knowledge of the real facts, and they are often hoodwinked by mendacious statements made by one side or the other.

7. There are no uniform rules as to medical assessors sitting with the county court judges either as to their employment or their procedure. *Note.*—There is no obligation for a judge to call an assessor to sit with him, or to act on his advice, as to the medical points, if he has called one. There are no rules as to procedure: some medical assessors examine the man alone, some allow medical men acting on behalf of the employer and workman to be present.

8. There is no provision of consulting-rooms and appliances for the proper examination of workmen at county courts. *Note.*—It is impossible for any medical assessor to properly examine a workman in a bare room, without even a couch in many cases, without any appliances for making any test, and without authority to administer an anæsthetic for the relaxation of muscles.

9. There is no appeal from the decisions of medical referees, which are "final and conclusive." *Note.*—Various suggestions have been made as to an appeal, but the views are so discordant, and many impracticable, that I prefer to deal with the matter later, under the essentials of State insurance.

If the foregoing and other defects of the present Act were remedied, so that the *bôna-fide* workman could be sure of his half wages being paid immediately after notifying the accident, and the employers, and those who insure them, could be protected against fraudulent and exaggerated claims and heavy costs, compulsory insurance would be unnecessary except for those who decline to insure. If compulsory State insurance should be enacted I venture to submit that the following points would be essential in the interest of the public, the profession, employers, and workmen.

1. That the State must not be allowed to fix its own rates of insurance. It should be in healthy competition with accredited insurance offices of standing, otherwise employers would be heavily hit with no redress.

2. The State or registrars must have notice of injury within a fortnight on a simple form to be obtained at any post office, clearly stating the nature of the injury and signed by the medical attendant of the workman.

3. Medical practitioners in every district should be appointed as medical examiners, and they should examine and report on every notified case of accidental injury without delay.

4. If the report of the medical examiner should not be approved and accepted by the workman, acting under the advice of his medical attendant, the matter should be at once referred to a medical referee, whose decision should be final unless appealed from within seven days. This would be on all fours with the procedure as to lead and other industrial poisoning, which are reported on by factory surgeons, and referred to a medical referee when cases are in dispute.

5. The Employers' Liability Act should be repealed, so that the questions of law would be few, the only questions being whether the workman was able to work or not, and what work, if any, he was capable of performing.

6. No settlements should be allowed to be made by the State unless registered by a registrar of a county court acting on the advice of a medical referee.

7. The decisions of medical referees should not be "final and conclusive." It should be possible to appeal from their decisions, and this is a very difficult subject, and various suggestions have been made. (*a*) That three medical referees from neighbouring circuits should form a court of appeal—that is, they should examine the workman and report either in favour of or against the decision of the medical referee. (*b*) That as many more medical referees would be required than there are at present, many of their decisions would be certain to be appealed from, and the appeal should be to a medical board of hospital surgeons, nominated by the Home Office in each district. (*c*) That consulting surgeons should be appointed by the Home Office to examine and report on decisions of medical referees referred to them by county court registrars, whose decision should be "final and conclusive." This latter would be cheaper, as only one fee would have to be paid instead of three or more.

8. Lay inspectors would have to be appointed in every district, so that the State should be in touch with injured workmen to insure their having proper medical treatment and the obtaining of work as soon as they are able to do it.

9. Stringent penal clauses should be inserted, dealing with those workmen who malinger or exaggerate.

As there are many thousands of small employers who do not insure, and who have not the means of paying compensation if a claim is made on them, some kind of compulsory insurance is necessary, but if by the State, the State must be protected. Many other points will have to be considered, especially those relating to legal questions, which do not come within my province, but the above points closely affect the medical profession, which must in the near future be more largely employed in safeguarding the interests of their patients, or of employers, than even now; while when compulsory State insurance does come in one form or another the State will have to rely upon the medical profession for its protection against loss.

## THE SMALL-POX EPIDEMIC IN LONDON.

THE following is a brief account of the epidemic of small-pox in the east of London since its outbreak.

On Feb. 5th a girl named Annie L——, 12 years old, of Key-street, Mile End, was admitted into a general ward in the Mile End Infirmary, where there were some 60 other patients. She was suffering from an eruption with severe indisposition, which was thought to be chicken-pox. Her friends visited her daily. No suspicion of its being small-pox occurred until late at night on Feb. 20th, when the medical superintendent of the infirmary, being suspicious of the condition of two other patients in the ward, called in consultation Dr. A. F. Cameron of the South-Eastern Fever Hospital. These cases were diagnosed as small-pox, and attention was thus drawn to the girl Annie L——, when it was found that her disease also was small-pox. In the early morning of Feb. 21st these three patients were removed to the Joyce Green Small-pox Hospital. On the same day four other cases—an unvaccinated girl, aged 3 (since dead), a probationer nurse, a ward scrubber, and Sarah L——, aged 11, a sister of Annie L——, none of them vaccinated since infancy, were removed to hospital. Two sisters of Annie L——, viz., Leah, aged 15, and Rebecca, aged 8, were then found suffering from small-pox. Rebecca had been to school on Feb. 20th and 21st, so that the school became infected from that date. On Feb. 22nd Felix K——, aged 1 month, unvaccinated (since dead), and Theresa C——, aged 21, a probationer, unvaccinated since infancy, were taken to hospital.

On Feb. 23rd the following 11 cases were removed from the same ward of the Mile End Infirmary: a woman, aged 23, a nurse, vaccinated in infancy only; a woman, aged 35, vaccinated in infancy only; a woman, aged 43, vaccinated in infancy only (since dead); a girl, aged 4, vaccination doubtful; a woman, aged 54, vaccinated in infancy only; a woman, aged 49, vaccinated in infancy only; a woman, aged 22, vaccinated in infancy only; a woman, aged 45, vaccinated in infancy only; a girl, aged 4, vaccination doubtful; a woman, aged 51, vaccinated in infancy only; a woman, aged 46, vaccinated in infancy only; also another member of the L—— family, a man, aged 20, vaccinated in infancy only. There were also two cases, one each from Poplar and Pimlico. On Feb. 24th three cases were removed from the infirmary, viz.: a boy, aged 1¾, not vaccinated; a boy, aged 4, not vaccinated (since dead); and a nurse, aged 24, not vaccinated. On Feb. 25th six cases were removed, five being from the infirmary, viz.: a girl, aged 2¼, not vaccinated (since dead); a woman, aged 65, vaccinated in infancy (since dead); a man, aged 42, vaccinated in infancy; a girl, aged 16, vaccinated in infancy; a girl, aged 15, not vaccinated; and one case from outside the infirmary, viz.: a woman, aged 30, vaccinated in infancy only; also a case from Hackney. On Feb. 26th two cases were removed to the hospital, one from outside and one from the infirmary. The latter, however, was found not to be suffering from small-pox. The other case, a woman, aged 67 years, had previously been a patient in the infirmary and was discharged on Feb. 13th. She was vaccinated in infancy. There was one case from Bethnal Green. On Feb. 27th two cases were removed to the

hospital from the infirmary: a woman, aged 84, not vaccinated (since dead); and a nurse, aged 21, vaccinated in infancy only; also two from Hackney and one from Deptford. On Feb. 28th two cases were removed from the infirmary to hospital—viz., a girl, aged 12 years, not vaccinated; and a woman, aged 40 years, vaccinated in infancy (since dead); also one case from Bethnal Green and one from Leyton. On March 1st there were no fresh cases, but on March 2nd four new ones occurred—viz., one from Paddington, one from Shoreditch, and two from Whitechapel respectively, and another death took place. On March 3rd two fresh cases were received at the small-pox hospital—one from Whitechapel and a doubtful case from Shoreditch—and another death took place. On March 5th one death was reported, and two suspects under observation were discharged as being free from the disease. On March 4th, 5th, and 6th there were no new cases.

At the time at which we write there are 42 cases under treatment, and the boroughs from which cases have been received are Stepney, Poplar, Shoreditch, Bethnal Green, Deptford, Hackney (all in the East End of London), Paddington and Pimlico (in the West End), and Camberwell in the South.

On the notification of the first diagnosis of small-pox, the medical officer of health of Stepney, Mr. D. L. Thomas, traced the early history of the first case. It appeared that the girl Annie L—— was taken ill on or about Jan. 28th. No rash had then appeared, and she attended the receiving-room of the London Hospital. She visited there on Feb. 4th and 5th, and on these occasions she doubtless had a rash, for her case was diagnosed as one of chicken-pox. On Feb. 5th she entered the Mile End Infirmary, and remained in the ward until Feb. 20th, when her case was diagnosed to be one of small-pox. In the meantime patients had been discharged from the ward and many visitors had been. Her family was at once put under observation, with the result that her two sisters and a brother, immediately they developed the disease, were at once sent to the small-pox hospital. Mr. Thomas obtained the addresses of all the friends of each individual member of the L—— family, and investigated their condition of health. In the course of this investigation he found that on Dec. 1st, 1910, a pregnant woman in the neighbourhood of Bell-lane had a rash which the medical man in attendance had diagnosed as chicken-pox. He had called in another practitioner and both had agreed on this diagnosis. This patient miscarried. On Dec. 6th another medical man attended her until Dec. 12th. He observed the rash, but did not think that it resembled small-pox. This patient had several young children, but all of them were vaccinated and had no rash. The mother was ill nearly up to Christmas. A man lodging in the house was taken ill about Dec. 20th, a rash appearing a few days afterwards. He remained away from work until Jan. 16th. For three weeks he was hardly out of his room, and most of the time was in bed. A sister of his, in the same room, about Jan. 17th developed a similar rash, but was less severely ill. Both these patients were attended by a medical man, who regarded the disease as chicken-pox. About Jan. 21st this girl visited the L——'s house in Key-street, when the first notified case, that of Annie L——, occurred. As already noted, Annie L—— became indisposed about Jan. 28th and developed a rash by Feb. 4th or 5th, some 12 days after the visit of the girl from Bell-lane. It is therefore reasonably certain that the disease from which the pregnant woman then suffered was small-pox, and that it in all probability was the cause of her miscarriage. Her recently vaccinated children apparently did not take the disease, but it was communicated to her lodgers, of whom one introduced it into the house in Key-street, whence it ultimately found its way into the Mile End Infirmary. There the true nature of the disease was finally recognised; not, however, until some 60 patients in the wards, several nurses, and many visitors had been exposed to infection, not to mention the possible previous contacts in the receiving-room of the London Hospital.

As to the question of vaccination, Mr. Thomas states that seven children under 8 years of age were attacked, of whom two were said to have been vaccinated. These two had the disease in a very mild form, and hardly seemed deranged in health. Of the other five, who had not been vaccinated, four died. Of 14 cases between 8 and 30 years of age, 3 had never been vaccinated and 11 vaccinated in infancy; none revaccinated. Of 13 cases between 30 and 60 years of age, all had been vaccinated in infancy; none revaccinated. Two have since died. Two of the three patients over 60 years of age have died, making a total of 8 deaths up to March 8th. All had been vaccinated in infancy, but none revaccinated.

It will be seen that owing to the large number of "contacts" the outbreak got a good start. The gradually increasing severity of the cases seems to indicate a mild character of the infection at first, with an increasing infectivity as it passed repeatedly through different hosts. To limit the spread as much as possible, by getting early information regarding its outbreak among contacts, the addresses of all patients discharged from the Mile End Infirmary since Feb. 5th were taken and all have been visited daily, as well as the houses of all outdoor officials of the infirmary. The families of all the 60 patients in the infected ward were treated as contacts, and they also have been visited daily. The addresses of all visitors to the infected wards also have been ascertained and their homes visited daily. The names of the absentees from the three schools attended by the L—— children are furnished every morning by the teachers and their homes are at once visited. All in the infected wards, both patients and nurses, have been revaccinated. Finally, the families of all those who develop the disease after contact as visitors at the infirmary, &c., are taken to the Council's shelters and kept under observation. It is hoped that the outbreak has been successfully brought under control; but owing to the very widespread exposure to infection that occurred prior to the recognition of the disease great vigilance is still necessary. Great credit is due, however, to the intelligent energy and efficiency of the sanitary authorities in tracing the origin so far back and placing all avenues of its further extension at once under constant observation.

## THE TRANSVAAL MINING COMMISSION.

IN 1907 a Commission was appointed by the late Transvaal Government to inquire into mining conditions generally in the Transvaal, and to make recommendations, *inter alia*, for the protection of the health and for the safety of persons working on the mines. The Commission was unable to submit its final report until March last, but this was not accessible to the public until recently. While it is reassuring to find that the Commission generally considers that the health conditions on the mines have vastly improved in recent years, yet there is evidently great need for further improvement, and the long list of recommendations prepared by the commission call generally for immediate attention.

### *Mortality amongst White Miners.*

The death-rates from all causes for the three years 1905, 1906, and 1907 per 1000 white mining employees are returned as approximately 20·425, 16·953, and 18·869 respectively. These at first sight would appear satisfactorily low when compared with the figures for other countries, but unfortunately the general low death-rates conceal a very high mortality amongst a limited class (13 per cent.)—namely, rock-drillers. The general low death-rates are explained by the fact that the figures include surface-workers, who constitute from 54 to 58 per cent. of all employees and are an exceptionally healthy class; also because at least one-third of the disabled rand miners leave the country and die elsewhere; and, lastly, because during the war there was a practical cessation of mining operations and 50 per cent. of the present rock-drillers have never worked machine drills except on the Rand and since the war, and in their case sufficient time has not elapsed for full manifestation of the effects of occupational disease. These death-rates, however, when corrected for age-constitution, are greatly in excess (approximately 60 per cent.) of those amongst white non-mining males of 20 and over. The death-rate from phthisis, including miners' phthisis, at ages of 20 and over, which in 1905, 1906, and 1907 was 5·7, 5·09, and 6·13 per 1000 respectively, was more than six times greater amongst white mining males than amongst white non-mining males, whilst this proportion by no means represents the condition in the case of rock-drillers, from which class most of the white miners, who die locally from phthisis, are drawn. The death-rate from respiratory diseases other than phthisis amongst white mining males at ages of 20 and over

was 70 per cent. greater than amongst similar white non-mining males. Excluding all respiratory diseases, there appears to be an appreciably lower mortality "from all other diseases" amongst white mining males of 20 and over than amongst white non-mining males of the same age period, which is explained by the Commissioners as likely to be in part due to the fact that the white miners' high death-rate from respiratory diseases tends in a limited degree to decrease the numbers liable to other complaints, and to the further fact that when a person with chronic respiratory disease succumbs to an acute intercurrent non-respiratory ailment the older standing disease will usually appear in statistical returns as the cause of death.

*Mortality amongst Native Labourers on the Mines.*

In regard to natives the Commission records its opinion that in the case of those from the temperate regions of British South Africa, excepting Basutoland, there is a consistently low mortality quite comparable to that of white underground workers; those from the subtropical and malarial areas of Portuguese East Africa, south of latitude 22°, as well as from the Northern Transvaal, Rhodesia, and Basutoland, show much higher, but still comparatively moderate death-rates, while those from the purely tropical districts, Northern Rhodesia, British Central Africa, Quilimane, and Mozambique, show very high death-rates. In view of the importance of this subject little evidence appears to have been received, and as will be seen later the conclusions and statistics of the Commission cannot be accepted altogether without reservation. Two medical witnesses gave evidence to show that the death-rate amongst native mine workers, which was alarmingly high in 1902–1903, differs from that amongst white miners in being due much more to climatic than to occupational causes; it is pointed out, however, by the Commission that since 1903 very great improvements have been effected, not only in respect to methods and seasons of recruiting, but also in medical inspection, supervision, housing, diet, working conditions, and hospital accommodation, with the result that there has been a marked and steady decline in the native mortality. This decline in the native death-rate from disease, as well as the apparent influence of the climatic factor, is well illustrated in the following table taken from the report of the Commission:—

*Average Death-rate per 1000.*

| — | — | 1903-04 | 1904-05 | 1905-06 | 1906-07 |
|---|---|---|---|---|---|
| 1 | "Tropical natives." | — | 130·1 | 99·5 | 70·5 |
| 2 | All natives. | 54·9 | 44·1 | 40·3 | 30·8 |
| 3 | "Non-tropical natives" (south of latitude 22°). | — | 35·3 | 33·4 | 27·7 |
| 4 | Quilimane natives. | — | 163·9 | 71·6 | 96·5 |
| 5 | Mozambique natives. | — | 128·2 | 65·8 | 67·5 |
| 6 | British Central Africa natives. | 115·5 | 118·3 | 166·3 | 62·9 |
| 7 | Rhodesia natives. | — | 118·6 | 79·8 | 46·2 |
| 8 | East coast natives (south of latitude 22°). | — | 39·9 | 35·8 | 33·7 |
| 9 | Transvaal natives. | 24·7 | 38·6 | 36·0 | 22·8 |
| 10 | Cape Colony. | 15·3 | 17·2 | 19·8 | 14·2 |
| 11 | Natal and Zululand. | 19·0 | 12·8 | 14·9 | 11·6 |

The Commission remarks that compared with European standards the death-rate is still high, but little is known of the normal death-rates of many of the native tribes in their own homes, and, again, the migratory tendency of native labour has to be borne in mind. The report says:—

> Each batch remains a comparatively short time; this, of course, minimises the effect of unhealthy underground working conditions, but, on the other hand, it means that almost as soon as such a batch becomes inured to the climate of the Rand, it is replaced by raw boys on whom falls by far the heaviest incidence of sickness and mortality. ..... Fortunately the natives from tropical areas constitute only 7·3 per cent. of the total number, as against 12·15 per cent. from Cape Colony, 3·5 per cent. from Natal and Zululand, 9·10 per cent. from the Transvaal, and upwards of 60 per cent. from the east coast, south of latitude 22°. Moreover, investigation has shown that the high susceptibility of these tropical and sub-tropical natives is not a permanent condition, and that after a few months' acclimatisation and familiarity with mining work there is a marked decline in sickness and mortality. This process of acclimatisation is comparatively short in the case of east coast boys, but, as might be expected, it is less complete, slower, and accompanied by so great a wastage amongst boys from British Central Africa and North-eastern Rhodesia that recruiting from these areas is no longer allowed by the Imperial Government. From the Portuguese tropical districts of Quilimane and Mozambique recruits are drawn under the following very salutary precautions—viz., (1) selection with special care under medical supervision; (2) arrival on the Rand during the summer months only; and (3) no underground employment within one month of arrival. In practice these natives remain under medical observation in the compounds of the Witwatersrand Labour Association until, in the opinion of the medical officer, they are fit to be drafted to the mines. The outstanding feature of these figures and facts is the advisability of recruiting mine natives as far as possible from the temperate regions of British South Africa and of minimising the number drawn from tropical districts.

Whilst racial and climatic conditions undoubtedly appear to have exercised great influence on the mortality rates amongst the different classes of native mine labourers, it is a pity that these rates were not separated by the Commission to show the difference according to race in the case of underground and surface workers respectively, as it is well known that many native tribes in Natal, the Transvaal, and Cape Colony are generally averse to working underground, and it would seem likely that a relatively large proportion of workers from these areas may have been employed mainly on the surface. Moreover, it is notorious that in native areas in these territories "boys" are constantly returning ill, particularly with phthisis, from the Rand to die in their homes, whereas it would seem probable that the sick from other and more inaccessible areas would not be able to obtain the same facilities to travel owing to lack of railway communication, and would therefore be likely to die or to recover locally on the Rand. There is nothing to show whether the Commission considered these factors, but even accepting the death-rates as given in the report they are generally, notwithstanding the pronouncement of the Commission, appalling, for it must be remembered that the "boys" recruited are selected natives in the prime of life, and passed as medically sound before actually employed, and that signing on for only short periods they are consequently not so likely to die from miners' phthisis as Europeans employed continuously underground. About 80 per cent. of the total deaths amongst native mine workers are, according to the Commission, in the order of their importance, due to pneumonia, phthisis, tuberculosis, cerebro-spinal meningitis, enteric fever, and dysentery, whilst operating as indirect and predisposing causes are malaria, notably scurvy to a less extent, and perhaps ankylostomiasis to a limited extent, especially amongst East Coast natives. The pneumonia death-rate is about 40 per cent. of that from all causes, whilst tuberculosis of the lungs comes next with about 18 per cent. The death-rate from the latter disease would doubtless be higher but for the fact already alluded to, that in certain areas a large number of infected "boys" return to die in their own homes. At the present time the Rand is undoubtedly responsible for the increasing prevalence of tuberculosis in the kraals of many native tribes, a matter to which the Commission does not refer, though it is admitted in the report that the disease in native mine labourers is almost invariably found to have been contracted on the Rand.

*Recommendations of the Commission.*

Into the causes of the unsatisfactory death-rates, both amongst European and native workers, the Commission enters at some length, and it submits a long list of recommendations for the betterment of existing conditions. With these recommendations we can cordially agree, particularly that workers infected with tuberculosis should be excluded from further underground employment; that the provision of a constant supply of clean water for the purpose of preventing the inhalation of dust in connexion with rock-drilling, blasting, and lashing, should be rigorously insisted upon whenever and wherever developmental work is carried on, where the natural strata are not wet, and in every dry and dusty stope, and that with equal rigour miners should be compelled to make use of the water thus provided; that the floor and sides of the working place to a distance of 10 feet from the face, where rock-drilling is being carried on, be kept sufficiently damped to prevent dust being raised by the escape of exhaust air, and that the damping of dry and dusty rock be carried out, not only before lashing commences, but be repeated as often as necessary while lashing proceeds; that proper shelters for the use of native underground workers should be erected near the shaft heads; that in future the erection of back-to-back dwellings should be prohibited; that a specified standard quality of air should be insisted upon throughout mine workings; and that lastly, a

Government medical inspector of mines should be appointed.

*Insufficient Air-space in Native Compounds.*

The Commission apparently agrees with the provisions of the Coloured Labourers' Health Regulations Ordinance of 1905, and appears to be fairly satisfied with the accommodation provided for natives. It is on this point that the views of the Commission cannot be wholly endorsed. If we remember rightly, this was a matter which brought Dr. G. A. Turner, when medical officer of health for the Transvaal, into conflict with the mining interests. The air-space required under the Ordinance consists of 200 cubic feet only for each labourer occupying the premises when the full complement for the accommodation of which the premises are provided is present. Surely it would not be unreasonable to expect further improvement in the health of labourers if a more liberal scale of air-space was provided. The Commission apparently contemplates that the medical inspector of mines should be an officer of the Mines Department. If, however, a proper department is organised, it would seem preferable for the medical inspector to be attached to the latter department as a subordinate of the chief medical officer. Moreover, the supervision of the health of mine workers generally should be entrusted to the latter officer.

Jan. 30th.

# THE HEALTH OF THE ARMY IN 1909.

## III.[1]

*South Africa.*

THE force in South Africa was reduced from an average strength of 14,075 in 1908 to 11,784 in 1909. The health statistics show a marked improvement as compared with the previous year, and one that is still more satisfactory when compared with the quinquennial average; both the admission and constantly sick ratios were lower than for the troops serving at home. The admissions to hospital were 331·2 compared with 458·9 in 1904–08, the constantly sick were 19·29 compared with 30·17, and the deaths were 3·73 compared with 5·66 per 1000. It is noted that the numbers treated in barracks were larger than in the previous year, owing to a relatively large number of minor injuries and inflammation of connective tissue cases among the mounted troops, and of convalescent cases of malaria in men arrived from India. The chief military stations are Pretoria, Bloemfontein, Potchefstroom, and Wynberg (Cape Colony). Wynberg shows the highest ratio of admissions to hospital, due chiefly (as heretofore) to venereal disease. Enteric fever caused 91 admissions to hospital, being in a ratio of 7·7 per 1000, a satisfactory reduction on the quinquennial ratio of 18; of these cases 49 occurred at Pretoria. This is an improvement on the previous year, when there were 65 admissions from approximately the same number of troops. As has been the case in the last few years, the disease has been of a very mild character, and there was only one death. The sanitary officer states that during October and November a number of mild cases were admitted from Roberts' Heights, "characterised by a sudden onset, early appearance of a profuse and atypical rash, intense headache, injected conjunctivæ, and early defervescence, occasionally by crisis. A number of these cases failed to give an agglutination reaction with B. typhosus or B. paratyphosus A and B. Blood cultures proved sterile even when 5 c.c. of blood were taken from a vein." The report says that in former years this type of disease would, in all probability, have been returned as simple continued fever or influenza. The diagnosis of enteric fever would appear to be doubtful. At Middelburg, Cape Colony, there were 15 admissions between February and May; eight of these were men whose duties led them into special contact with the town where enteric fever was rampant. When introduced into cantonments the disease appeared to spread by contact infection, either in the barrack rooms or latrines. Flies were unusually prevalent and "a veritable plague. As Middelburg is served by a dry earth system of conservancy, the influence of the fly in transmitting infection where enteric fever is rife cannot be overlooked. There is no evidence to incriminate water- or milk-supplies." In another part of the report it is stated that "wherever the pail system is in use great attention is paid to the cleanliness of the latrines. Disinfection is systematically carried out, which among other results has a marked effect in keeping down the number of flies." It would appear that Middleburg, for some reason or other, did not experience this benefit of latrine disinfection, the reason not being given. The occurrence of a number of very mild or doubtful cases naturally tends to a decrease in anxiety in regard to their importance, but an exacerbation of the type must always be considered possible. Malaria caused 133 admissions, of which 102 were recurrent attacks of disease contracted elsewhere; of the primary attacks 27 occurred at Pretoria. There was an unusually heavy rainfall early in the year, and, we are told, "water remained in pools and old quarries in the vicinity of the barracks well into the winter months. Mosquitoes increased in numbers, and anopheles became distributed over a wide area, including the whole of Pretoria, artillery barracks, and the cantonments, Roberts' Heights. Several cases of malaria occurred among the civil population in the town, and in March the municipal authorities took stringent measures to lessen the prevalence of mosquitoes. Early in April mosquito brigades were formed, who drained the pools, if reasonably feasible, and paraffined the water in all other instances. The result was an almost immediate cessation of the disease." Another good instance of effective prophylaxis was afforded on the arrival of troops from India. In anticipation of malarial incidence arrangements were ready in advance for their systematic treatment, frequent medical inspections were made, and quinine administered. Pyrexia of uncertain origin caused only 13 admissions, compared with 118 in 1908; the average number constantly sick was only 1·30; that is, one quarter of the sickness (or, in the phraseology of the writer of this report, "four times less than") in 1908. The decrease is principally due to careful bacteriological investigation carried out in all atypical cases of fever. Of the pneumonia cases nearly half (17) occurred at Bloemfontein, where rheumatic fever was also more prevalent than elsewhere; it is stated that no reason can be assigned for this. Sore-throat and tonsillitis have been much less frequent than usual during the past year. For venereal diseases, taken as a whole, there is a very slight decrease in the admission ratio, compared with the quinquennial period, though the figures are rather higher than those for 1908. Syphilis shows some improvement. Wynberg, Cape Colony, still has the highest incidence, owing to its proximity to Cape Town, though there is a reduction on the previous year's figures.

Sanitation continues to receive considerable attention, and we quite believe that "in barracks, on the march, in camp, and at manœuvres, every reasonable effort was made to attain the best results." Inoculation against enteric fever was extensively carried out, especially in regiments recently arrived from India. No extensive sanitary works were put forward during the year, it being felt that the political changes involved in the closer union that now exists between the South African provinces would have some effect on the distribution and strength of the garrisons. During the year the troops were removed from Middelburg, Cape Colony, a few details only now remaining. The water-supplies are generally noted as satisfactory, except at Pretoria and Potchefstroom, where they are boiled. At Roberts' Heights and the Artillery Barracks, Pretoria, B. coli is occasionally present even in one cubic centimetre of the water. "As noted in previous reports the health statistics show no relationship between the incidence of enteric fever and the pail system of conservancy. Where the water system is in most extensive use—Roberts' Heights and Artillery Barracks, Pretoria—the prevalence of enteric fever is much greater than in any other station in the command." This statement, however, as to absence of connexion between methods of excretal disposal and enteric prevalence is not consistent with the evidence of the report itself. As just mentioned, at Roberts' Heights and the Artillery Barracks the water is bacteriologically very impure (it is true that it is "boiled"); it is at least possible that the high enteric incidence in these barracks is due to the use of infected water for drinking, in which case it would have no connexion with the water-carriage method of sewage disposal. Moreover, on a previous page had been mentioned the coexistence of an enteric fever outbreak at Middelburg with

[1] No. I. and No. II. were published in THE LANCET of Feb. 25th (p. 534) and March 4th (p. 607), 1911, respectively.

employment of the dry-earth system and great prevalence of flies. The use of khaki drill, which was substituted for serge in 1908, is stated to have, so far, proved suitable and satisfactory.

*India.*

The average strength of the European force serving in India was 71,556, an increase of some 5000 troops over the garrison of the year preceding. The health statistics show a marked improvement on those for the previous year, and on the quinquennial averages. The admissions were 716·9, the constantly sick 40·26, and the deaths 6 37 per 1000; the corresponding figures for 1904–08 having been 839·1, 50·68, and 10·07. The returns for 1909 are the best that have ever been recorded, and the improvement has been noticeable under all heads. The invaliding ratio has come down to 9·06 per 1000, that for the preceding quinquennium having been 25·31. The more important causes that have conduced to these results are considered to have been (1) the steady improvement in the sanitary condition of cantonments; (2) the greater interest taken by commanding officers and others in the sanitary condition of latrines and barracks; (3) an increased appreciation on the part of the men of the value of a rational mode of life, and an intelligent perception of the elementary principles of hygiene; (4) the provision of steam disinfectors in various large garrisons, and a greater attention to the details of prompt and adequate disinfection of bedding and clothing; and (5) an enhanced appreciation of the benefits of anti-enteric inoculation, together with increased efforts by medical officers to detect mild or ambulant cases of enteric fever that formerly escaped notice.

The enteric fever statistics are most satisfactory: the admissions were 8·9, compared with 15·8 in the preceding quinquennium; and the deaths, 1 58, compared with 3·10; the number constantly sick was 2·06 as against 3·11; in all respects therefore, frequency of infection, fatality, and severity of attack, the improvement is most notable. The stations that suffered most were Meerut (26·1 admissions per 1000), Lahore (26), Kirkee (26), Lucknow (23·2), Sialkot (20 7), Multan (20·3), Jullundur and Dinapore (20). At Lahore, Kirkee, Lucknow, and Dinapore there were considerable increases in the number of cases over the preceding year, though all of these stations have a bad reputation for enteric fever; at Meerut and Sialkot and Multan, there was some decrease in prevalence. At some stations that had been severely attacked in 1908—e.g., Peshawar, Rawal Pindi, Jhansi, Jubbulpore, and Secunderabad—there was very slight incidence in 1909. Some stations, formerly notorious for enteric fever, had no cases at all; such were Kasauli and Cawnpore. Some notes are furnished as to causation: at Lahore 23 cases occurred, the earlier ones traceable to drinking polluted water on the march from Ranikhet, the later ones due to contact infection. Similar infection on the march accounted for an outbreak in the Royal Field Artillery at Lucknow. At Peshawar infected latrines were thought to be the cause; the disease died out soon after the introduction of the wet system with the use of cresol solution. Milk is not thought to have been a cause of any importance. The scattered distribution of most of the cases militates against the carrier theory as regards the troops themselves; but it is suggested that carrier infection may take place in the bazaars, and it is pointed out that "although only 22 per cent. of all enteric cases are women, the proportion of females amongst chronic carriers is at least 82 per cent." Three cases of infection are recorded in nursing orderlies, one of whom had refused to be inoculated; and one in the person of a medical officer attending on enteric patients. Six cases of isolation of paratyphoid bacillus A are recorded. At Cliffden, near Murree, an outbreak of 11 cases among women and 12 among children occurred during June and July. Excellent work is being done at the two convalescent depôts for enteric fever patients. At Naini Tal, where the depôt was established in 1908, during the year 360 men were under observation; the urine and fæces were examined twelve times in each case, and in seven instances carriers of typhoid bacilli were detected—i.e., just under 2 per cent., which conforms to European experience. The Wellington depôt for Southern India was opened in June, 1909; 64 men have been fully examined and discharged. Ten men were discharged time-expired before a complete examination could be made; 49 men remained under examination at the end of the year. Three carriers were detected. These depôts are of great benefit to the patients themselves, and are doing immense good by the protection they afford to the army as a whole.

Reviewing the question of enteric prevention in India, it appears to us that the present position is very encouraging. Infection by polluted water is now comparatively rare; the instances noted of such infection on the march to Lahore and to Lucknow are regrettable, but will perhaps lead to increased care in the future; such occurrences are now very exceptional, and should be considered, we think, as in every case requiring strict investigation. Infection by latrines is now also quite exceptional, and presumably the dry-earth system has by this time entirely disappeared. Infection of nursing orderlies is also a thing of the past, now that inoculation is so widely practised; we suppose an orderly who refuses inoculation will no longer be employed to attend on an enteric fever case. The carrier problem is being dealt with effectually in barracks; the bazaar source of infection by female carriers certainly does present difficulties, but happily the venereal admission rate has fallen from 126·9 in the quinquennium 1904–08 to 67·9 in 1909; this reduction, together with the encouraging growth of temperance in alcohol throughout India, leads us to hope that carrier infection from this source will also diminish. Lastly, of the total force of 71,556, no less than 43,556 men have been inoculated; the figures, so far, indicate that the attack rate in the inoculated is about one-third, and the case mortality one-half, of the rates in uninoculated men.

Malaria admissions were at the rate of 202·8 per 1000, being more numerous than in the preceding quinquennium (171·9), but less than in 1908 (244 6). Preventive measures have been carried out zealously, both for extirpation of mosquitoes and by prophylactic administration of quinine; this latter was carried out in practically all stations during the malarial season. Opinions seem to differ as to the results.

*Smaller Stations.*

One or two points only will be alluded to in this last section of the report. A diminution of sickness in comparison with the preceding quinquennium occurred in each of the smaller stations; in the Straits Settlements the admission ratio was practically the same, and, compared with 1908, showed an increase. Malaria accounted for 394 admissions per 1000, compared with a quinquennial average of 299; it is attributed to excessive growth of jungle in proximity to barracks and presence of infected natives. The former is a removeable cause; no explanation is given why such an obviously insanitary condition was allowed to exist. In Jamaica malaria was prevalent among the Royal Garrison Artillery at Fort Nugent; they were mounting heavy guns in November, when the rainfall was excessive and the troops were mostly under canvas in the bush, where anopheles mosquitoes abound, and a malignant tertian fever prevails. "The work," we learn, "was considered of such importance to the safety of the island that it could not be discontinued." We were not aware that Jamaica was in any immediate peril, except from earthquake, and the mounting of heavy artillery would hardly have been an effective safeguard against this danger. In West Africa there has been a considerable decrease in malarial fevers as a result of the labour devoted to anti-malarial operations, and an improvement in health generally. Tower Hill and Mount Aureol are now practically free from fever. There were no deaths in the command; the quinquennial average mortality (1904–08) had been 14·91 per 1000. In contrast to the Jamaica experience it may be noted that in Mauritius there were only 99 admissions per 1000 for malaria, compared with a quinquennial average of 283; extensive drainage works had been carried out on land bordering on barracks at Curepipe, night marches were discontinued, and no camps were formed during mobilisation, the men being housed in barracks; as a result, no admissions for fever followed on the manœuvres.

A study of this admirable report shows with what diligence and skill the health of the British army is being cared for under every variety of condition, the facts and figures are very clearly arranged, and the report in every way is one of great interest and value.

THE death is announced of Dr. Friedrich Ernst, formerly director of the Medical Clinic of Zürich University, at the age of 82.

# MEDICINE IN THE ENCYCLOPÆDIA BRITANNICA.[1]

## III.—*Surgery.*

THE volumes A to J treat of many subjects of no little importance connected with surgery. Under Surgery we may include Anæsthetics, for anæsthesia is ancillary to surgery, and an interesting though brief account is given of the history of the subject. The chief anæsthetics are described, while the modernity of the section is shown by the fact that in the account of spinal analgesia the attitude taken by the writer represents very fairly the present position—namely, that the method has undoubtedly its uses and will take its due place in surgery, but what place that is has not yet been settled. All the objections that have been urged against it are described.

In the article on Aneurysm we are told that the old method of Antyllus with modern aseptic conditions is now sometimes employed. It is somewhat doubtful whether Antyllus excised the aneurysm; apparently he only tied the artery above and below. In the modern method the aneurysm is excised after ligature of the artery on each side of the aneurysm. Other articles are on Disease of the Bladder and Prostate, and on Diseases and Injuries of Bone. Here it was hardly necessary to refer to Barker's method of wiring a fractured patella, for it is now out of date, and we believe it is never used now even by Barker himself. Burns and Scalds are well described, and what may be called the home treatment is carefully given. We can hardly agree that skin-grafting probably does not hasten healing. The article on Cancer describes the various theories which have been put forward to account for morbid growths, and preserves a judicious impartiality between them. Naturally, it says that operation is at present the only treatment. Other articles of a surgical nature are on Carbuncle, Hæmophilia, Hæmorrhage, Hæmorrhoids, Hernia, Hydrocele, and Hydrocephalus, and they need no special mention. They are sound summaries of their subjects.

Perhaps the most important, so far as the lay public is concerned, of the surgical articles is that on Appendicitis; for, on the one hand, there are many who are unnecessarily frightened with the fear of suffering from this affection, and, on the other hand, there are even more who fail to recognise the vast importance of the early treatment of appendicitis. The writer in the Encyclopædia considers that there can be no doubt that the disease is more common than it used to be, though he adds that the explanation of the increased frequency is not yet forthcoming. We are told that in some families there is a strange predisposition towards it. This is often stated in the text-books, but we should like to have some definite evidence in support of it. Of course, cases do run in families sometimes, but the theory of probabilities will account for this. After the etiology the article goes on to describe the anatomy of the appendix, and a description of the chief symptoms of the disease follows. Then a very typical and graphic account is given of an attack of acute appendicitis affecting a school-boy, and the course which it probably followed is also described; and this will give a clearer idea to the mind of the non-medical reader than could have been produced in any other way. The previous mild attacks of "indigestion" passing away under the influence of an aperient, the sudden onset of the disease after the boy gets wet through or sits on cold ground when heated at play, the localisation of the pain in the right side of the abdomen, the flushed face, the rise of temperature, the quickened pulse,—all these are well described. The writer proceeds to discuss the question of treatment. He presents the arguments in favour of waiting for the interval and those in favour of immediate operation, and comes to the conclusion that the safest method is immediate operation in all cases, for, says he, "It is highly probable that if every available hospital surgeon were asked if he had ever had cause to regret having advised early operation in the case of appendicitis the answer would be 'No'; on the other hand, every surgeon would be able to record cases in which delay had been probably disastrous, which an early resort to operation would in all probability have prevented." This is a highly practical way of answering a difficult question. Catarrhal or relapsing appendicitis, we are told, may be due to the presence of "bolted," unchewed, or undigested food in the cæcum, and that these mild recurrent attacks may sometimes be got rid of altogether by attention to the teeth and care in eating. In the chronic forms of the disease the need for operation has been well put: "To carry about a diseased appendix is to run the constant risk of being laid up at a time most inconvenient, as when travelling or when staying in some place where skilled assistance is far distant or absolutely unobtainable." The difficulty in many cases of recognising the exact severity of an attack is well described: "The most serious cases are those in which the aspect, the pulse, and the temperature of the patient fail to give warning of a very advanced state of the disease. These are, indeed, the serious cases, and at present it must be confessed that we have no certain method of recognising them. These are the cases which offer the most powerful argument in favour of immediate operation." A good description is given of what may happen when an attack of acute appendicitis is allowed to take its course. The possibilities of perforation are described, the chance of limitation by adhesions is referred to, and the reader is made to understand how the pus may either burst into the general peritoneal cavity with a fatal issue, or may slowly make its way into one of the hollow viscera, or to the surface of the body. Many authorities will agree with the writer in the Encyclopædia that when an appendicitic abscess has been opened, and the diseased appendix presents itself, it should be removed, while if it does not present itself it is safer for the surgeon to abstain from making a determined search for it at the time. With this view, on the other hand, many authorities do not agree, our own opinion coincides with the writer's on the whole, that for the moment at least drainage is sufficient. The possible errors in diagnosis are mentioned, and it is pointed out that diagnosis is sometimes impossible without recourse to operation, and generally the other morbid condition which has been mistaken for it may be relieved instead. Perhaps the most important paragraph in the article is that which deals with the treatment that should be employed in the case of appendicitis if, for one reason or another, operation has to be delayed, for these instructions may very reasonably be followed by the friends of the patient if they are at a distance from medical aid and they wish to employ to the best advantage the time that must elapse before a doctor can see the patient. The instructions are simple: "The patient should be put to bed with his knees resting over a pillow and a large fomentation under oil-silk should be laid over the lower part of the abdomen. No food should be given beyond an occasional sip of hot water. Purgatives should not be administered, as this would be to set in movement an inflamed piece of bowel. If the case be not acute a large enema of soap-and-water with turpentine may be given or possibly a dose of castor-oil by the mouth. As a rule, however, it is unwise to set the bowels in vigorous action until the diseased appendix has been removed. No opium should be given." Here we see in this single paragraph all the essentials of what may be called the non-professional treatment of appendicitis. The rest in bed, the raising of the legs, the warmth locally, the absence of all food with the exception of a sip of hot water, the risk of purgatives, the utility of an enema, and, lastly, the danger of opiates, but we cannot help thinking that a little more stress might be laid on the danger in these cases of giving any sedative at all. As the words stand the friends might feel justified in giving chlorodyne, for instance, or some other patent preparation containing morphia or some similar substance, and the value of the directions might have been increased if the explanation had been given that to administer an opiate to such a patient before he had been seen and examined by a medical man would be to obscure greatly the signs of the case, and so to interfere possibly with the diagnosis. We have quoted fairly fully from this article, and we think it is more likely to be studied by the general reader of the Encyclopædia than any other surgical article in all the volumes, so we may express the opinion that the writer, who is, we believe, Mr. Edmund Owen, has very happily struck the mean between the treatise for professional readers and the ordinary article on health subjects intended for lay readers.

[1] Articles I. and II. were published in THE LANCET of Feb. 25th (p. 530), and March 4th (p. 609), 1911, respectively.

It is by no means an easy thing to present professional facts to non-medical readers; it is very easy to cause unnecessary fear and disquiet amongst those who have no real knowledge of medical subjects, and, on the other hand, to fail to give what can really be called an accurate picture of a disease and its treatment.

We think the publishers of the Encyclopædia are to be congratulated on the high standard of the purely surgical articles. The article on Gynæcology occupies some seven columns, and, so far as is possible within that space, gives such a presentation of the subject as may reasonably be put before lay readers. The accounts are necessarily extremely brief. Sufficient of the history of this branch of medicine is given to show the general progress that it has undergone, and the various diseases of the female generative organs are shortly described. Our present recognition of the fact that many general diseases are caused by dental affections has greatly increased our idea of the importance of due care of the teeth, and we are glad to see that the article on Dentistry is adequate and very suitable for its position in this work. The section on the filling of teeth describes the various methods that have been employed, and reference is made to porcelain restorations. We are told that if successfully made porcelain fillings are scarcely noticeable, but that their durability remains to be tested. The general principles of dentures are described and the modern methods are also mentioned. We agree with the writer that moveable bridge work, though more difficult to construct, is preferable to fixed work as it may be more easily cleansed.

## MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

*Opening of Meeting.*

THE provincial meeting of this association was held on Feb. 23rd at the Cardiff City Mental Hospital, by the courtesy of Dr. Edwin Goodall and the committee of visitors, under the presidency of Dr. John Macpherson. There was a good attendance of members and visitors. The serious business of the sitting was preceded by a luncheon in the large hall of the hospital, at the invitation of the Lord Mayor (Alderman Charles H. Bird), and among those present at the repast were the President (in the chair), the Lord Mayor, Alderman Morgan Thomas, J.P., Dr. G. H. Savage, Dr. Charles A. Mercier, Mr. E. Tenison Collins, Mr. H. F. Hayes Newington (treasurer), Dr. C. Hubert Bond (general secretary), Dr. R. Percy Smith, Dr. Alfred Miller (registrar), and Dr. T. Drapes (President-elect).

After the toast of "The King," the LORD MAYOR proposed that of "The Medico-Psychological Association of Great Britain and Ireland," coupled with the name of the President. He pointed out that the membership of the association was 700, and that its organ, the *Journal of Mental Science*, constituted a reflex of the most recent researches bearing on the specialty. An important part of the activities of the association consisted in awarding special prizes to assistant medical officers, granting certificates to mental nurses—of both sexes—and in other ways raising the status of all who were connected with the care and treatment of the insane. He concluded by extending a cordial welcome to the association in the name of the citizens of Cardiff.—The PRESIDENT, replying on behalf of the association, expressed gratitude for the city's kind hospitality, and remarked that, the function of the members being the care and treatment of the insane, it was necessary continually to educate themselves, and it was in pursuance of that aim that the opportunity of the visit to the Cardiff Mental Hospital was welcomed.

The PRESIDENT proposed the toast of "The Lord Mayor and Corporation," and expressed a high opinion of the new Mental Hospital, which was well worthy of emulation.—The LORD MAYOR, in replying, said that in constructing the hospital the aim had been to have an institution which should be worthy of the city and of the cause, one in which patients could be properly housed and cared for, and yield a fair proportion of cures. That fair degree of success he could claim had been achieved. A further aim had been to make the hospital, by means of an efficient staff and adequate laboratory accommodation, a centre of investigation, and already distinct scientific advances had been made. He hoped one result of the visit of the association would be to encourage the workers at the hospital and to show the ratepayers of Cardiff the wisdom of the course which had been pursued.

Alderman MORGAN THOMAS (chairman of the Cardiff Mental Hospital Committee) proposed the toast of "The Visitors," coupled with the names of Dr. George H. Savage, Dr. Charles A. Mercier, and Mr. E. Tenison Collins. He pointed with great satisfaction to the fact that the cures at the hospital had been 46·7 per cent. of the admissions. There was also much wisdom in using the word "hospital," for, as Dr. Goodall said when the matter was discussed, the aim was not merely to detain mental cases, but to cure them.—Dr. SAVAGE, Dr. MERCIER, and Mr. TENISON COLLINS each replied.

*Papers Read.*

At the scientific meeting in the afternoon, the first paper was a report of an exhaustive research by Dr. H. A. SCHÖLBERG and Dr. EDWIN GOODALL, both of the Mental Hospital. It was entitled "On the Wassermann Reaction in 172 Cases of Mental Disorder (Cardiff Mental Hospital) and 55 Other Cases (Cardiff Infirmary, &c.), with Historical Survey." The authors dealt with the work of Bordet and Gengou on complement-fixation and its application to the diagnosis of syphilis by Wassermann, and then reviewed the published statements on the subject since 1906. The paper set out in detail the results in general paralysis and other kinds of mental disorder, including dementia præcox, epilepsy, idiocy or imbecility with epilepsy, idiocy and imbecility, and various other kinds of mental disorders. The results were also given in the case of controls from syphilitic non-mental cases, for purposes of comparison. In addition, they set out the results obtained by the dilution and concentration of the human amboceptor. An important point dealt with in the communication concerned the absolute and relative frequency of the reaction in serum and cerebro-spinal fluid, and its variability in individual cases. They found that the reaction became negative during a remission of the symptoms in general paralysis of the insane in several cases, but considered that there was need for a more detailed investigation on that point. Other points brought out were the necessity for repeated examination, the diagnostic value of a positive reaction in the cerebro-spinal fluid, the value of the Noure-Apelt test, and the desirability of ascertaining the relative frequency of the reaction in cases of general paralysis with known syphilitic history as compared with all cases of that disease.—Dr. PARKER, in discussing the paper, said that in 10 cases in which "606" had been used there was no alteration in the reaction after treatment.—Dr. SAVAGE regarded the contribution as an epoch-marking one. The fact that one case in which the reaction was negative proved to be one of injury and not syphilis reminded him of a claim which had been made for compensation for injury, and in which the defence was that it was a disability due to the specific disease and not to injury. If it could be definitely established that the positive reaction to the Wassermann test meant the disease in question, such cases could soon be disposed of.—Dr. PERCY SMITH heartily congratulated the authors on their work. He had not the opportunity of laboratory work, and as his work was mainly clinical, he was glad to hear Dr. Schölberg say that there were cases in which reliance must be placed chiefly on the clinical aspect. He understood that there were cases of general paralysis in which, even late in the disease, there was a negative reaction, and also some in which in the early stage the Wassermann test was negative, although the physical signs might point to the disease, but in which a positive reaction only developed as the disease progressed. There could be no doubt that the test was a most valuable aid to diagnosis. He related a case in which there appeared to be all the typical symptoms of general paralysis, but in whom the Wassermann test was negative. There was no history of specific disease, but there had been a severe injury to the head. It was probably traumatic general paralysis. One case, which seemed to be general paralysis and in which there was specific disease, was given "606," and following that he had increased excitement and exaltation. But his physical signs still remained in abeyance. At the Berlin Congress on the Care of the Insane a paper was read showing that the Wassermann reaction was positive in

many cases of malaria, presumably those in which there was no syphilis.—Mr. E. FAULKS asked whether the authors had compared their results with the cell-counts in the cerebro-spinal fluid, and whether they would describe the details of the precipitation test.—Dr. SCHÖLBERG replied that cytological counts were not done.—Dr. GOODALL replied that the observers who made the test and the cytological count found that the results did not necessarily coincide.

Dr. R. V. STANFORD read a paper on the Production of Indigo in the Human Organism.—Dr. SAVAGE remarked that it was going rather far to say that there was no parallel to be traced between the presence of indican and the mental symptoms in a stuporose case.—Dr. GOODALL said he had been watching the work, and was of opinion that the whole matter was in a state of flux; there was no exact knowledge on the subject of the production of indigo in the urine. Indigo occurred in the urine in other states than constipation and obstruction in the bowel, in such state as marasmus, cachexia from carcinoma, phthisis, &c. The paper showed the need of the subject being taken up by skilled workers, qualified chemists, because those medical men who had made statements on the matter up to the present were not competent chemists nor physiologists. That applied especially to certain Italian workers. They said one could associate the presence of indigo in the urine with clinical conditions. But this research did not warrant that statement. A method of quantitative estimation did not exist, and Dr. Stanford was endeavouring to produce one.

Mr. TENISON COLLINS, gynæcologist to Cardiff Infirmary, read a paper entitled "Notes on Gynæcological Conditions coincident with Mental Disturbances," in which he showed the close connexion subsisting between the nervous and generative systems. The disorders of the latter in females were often accompanied by headache, epilepsy, insomnia, hallucinations, the cure of which was followed by disappearance of the disturbances. If abnormalities of the pelvic organs in the insane were treated, there was generally improvement in the state of health, and if the abnormalities were present before the onset of the insanity the mind would also improve in some of the cases. But operations upon the reproductive organs were inadvisable for the amelioration of the insanity alone. The selection of the proper cases for this must be done by the medical staff.

The concluding paper was read by Mr. R. L. MACKENZIE-WALLIS on Metabolism in the Insane. His investigation showed that there was but little difference in the metabolism of the insane in comparison with that of normal people; but there were differences in the products derived from cellular activity, especially in some forms of insanity. In this it was suggested that the ductless glands played a large part, as the effects of disease of those glands on the metabolism were well known.

*Account of Dinner.*

At the dinner in the evening at the Royal Hotel, Cardiff, Dr. MACPHERSON proposed the toast of "The City and Port of Cardiff," and spoke highly of the vigour and wealth of the city and its progressive and enlightened policy. Nowadays people were not so much asking how rich the rich were, but what they were doing with their riches. If there were slums in Cardiff their parks and open spaces formed an excellent set-off to them. The Mental Hospital was unique in its efficiency and in the work it was doing.—The LORD MAYOR, in his reply, said the thanks of all Cardiffians were due to Dr. Macpherson for his kind words; they were proud of their city and of its trade, which was a very large one. They felt great pride in having had a visit from such an association.

Dr. SAVAGE proposed the toast of "The Mental Hospital Committee," coupled with the names of Dr. Goodall and Alderman Morgan Thomas, and spoke of the high quality of the work being done at the hospital in the attempts to advance the knowledge of mental disease.—Mr. Alderman MORGAN THOMAS, in responding, spoke of the excellent work being done at the Mental Hospital by Dr. Goodall and his staff, and said he believed that general hospitals ought to be supported out of the rates. The old idea in regard to diseases of the mind was that when once a person went into an asylum he or she was doomed, as far as this life was concerned. But better ideas now prevailed, and the old heathenish idea of mere detention had long been discarded. He saw no reason why diseases of the mind, provided they were not chronic, should not be as curable as those of the body.—Dr. GOODALL also responded, and expressed his belief in the German system of cliniques, whereby a patient was investigated from the standpoint of all the specialties—that of the mind included—and treated as his case was found to require. The staff and the board of management would feel in the visit of the association an incentive to continue their work with even increased enthusiasm, so as to add their quota to the sum of scientific knowledge.

Dr. MERCIER proposed the toast of "The Visitors," coupled with the name of Dr. Maclean; and that gentleman replied.

The toast of "The Medico-Psychological Association" was submitted by Mr. W. SHEEN, and he specially mentioned the welcome of local members of the medical profession.

The PRESIDENT of the Association, Dr. MACPHERSON, replied in a graceful speech, in which he bestowed high praise on the work being done at the Mental Hospital, and voiced the gratitude of the visitors for the reception they had enjoyed.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8121 births and 5040 deaths were registered during the week ending March 4th. The annual rate of mortality in these towns, which had been equal to 17·6, 17·2, and 16·2 per 1000 in the three preceding weeks, further declined to 15·3 in the week under notice. During the first nine weeks of the current quarter the death-rate in these 77 towns averaged 16·1 per 1000, and the mean recorded rate in London during the same period was 16·0. The annual death-rates during last week ranged from 5·6 in Handsworth, 6·2 in Hornsey and West Hartlepool, and 6·3 in Warrington, to 21·5 in Huddersfield, 23·9 in Sheffield, and 24·4 in Middlesbrough. The 5040 deaths from all causes in the 77 towns showed a further decline of 305 from the numbers returned in recent weeks, and included 663 which were referred to the principal epidemic diseases, against numbers increasing from 477 to 601 in the four preceding weeks; of these 663 deaths, 397 resulted from measles, 108 from whooping-cough, 64 from diphtheria, 53 (of infants under two years of age) from diarrhœa, 25 from scarlet fever, 15 from enteric fever, and 1 from small-pox. The fatal cases of measles, which had steadily increased from 160 to 359 in the first eight weeks of the current quarter, further rose last week to 397, they caused the highest annual death-rates of 3·2 in St. Helens, 3·8 in Coventry, 4·2 in Leyton, and 9·1 in Sheffield. The deaths from whooping-cough, which had been 132 and 91 in the two preceding weeks, rose again last week to 108; the highest death-rates from this disease last week were 1·6 in Norwich, 1·9 in Coventry, and in Stockton-on-Tees, and 2·4 in Middlesbrough. The 64 fatal cases of diphtheria also showed an increase upon recent weekly numbers, and included 25 in London and its suburban districts, 6 in Bradford, 4 both in Leeds and in Sheffield, and 3 in Cardiff. The 53 deaths of infants attributed to diarrhœa corresponded with the number in the previous week, and showed proportional excess in Smethwick and in Middlesbrough. The 25 fatal cases of scarlet fever were fewer by 8 than the number in the previous week; 6 occurred in London and its suburban districts, and 2 each in Handsworth, Leeds, Newcastle-on-Tyne, and Rhondda. The deaths referred to enteric fever, which had been 19, 16, and 14 in the three preceding weeks, were 15 last week, of which 2 each were recorded in Bristol, Birmingham, and Bradford. The fatal case of small-pox occurred in London. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had 1276 and 1242 in the two preceding weeks, had further declined to 1197 on Saturday last; 129 new cases of this disease were admitted to these hospitals during last week, against 147, 166, and 138 in the three preceding weeks. These metropolitan hospitals also contained on Saturday last 918 cases of diphtheria, 682 of measles, 223 of whooping-cough, and 37 of enteric fever. The Metropolitan Asylums Hospitals contained 45 cases of small-pox on Saturday last, of which 16 new cases had been admitted during the week. The 1394 deaths from all causes in London last week, showing a further decline of 146 from the numbers in recent weeks, included 318 which

were referred to diseases of the respiratory system, against 421 and 395 in the two preceding weeks. In the 77 towns 153 deaths resulted from different forms of violence, against 163 and 173 in the two preceding weeks, and 381 inquest cases were registered. The causes of 47, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Leicester, Stoke-on-Trent, Salford, and in 45 other smaller towns; the 47 uncertified causes of death in the 77 towns last week included 7 in Liverpool, 4 in Gateshead, and 3 each in Rochdale, Blackburn, Preston, Sheffield, and Hull.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 898 births and 621 deaths were registered during the week ending March 4th. The annual rate of mortality in these towns, which had been equal to 19·8, 19·0, and 17·4 per 1000 in the three preceding weeks, further declined to 16·9 in the week under notice. During the first nine weeks of the current quarter the death-rate in these towns averaged 17·0 per 1000, and exceeded by 0·9 the mean rate during the same period in the 77 English towns. The annual death-rates last week in the eight Scotch towns ranged from 8·8 in Paisley and 14·0 in Aberdeen to 19·7 in Greenock and 20·1 in Dundee. The 621 deaths from all causes in the eight towns last week showed a further decrease of 20 from the numbers in recent weeks, and included 57 which were referred to the principal epidemic diseases, against 68 and 76 in the two previous weeks; these 57 deaths were equal to an annual rate of 1·6 per 1000, the highest rates from these diseases being 1·9 in Glasgow and 2·1 in Dundee. Of these 57 deaths from the principal epidemic diseases, 32 resulted from whooping-cough, 12 from diarrhœa, 5 from diphtheria, 4 from scarlet fever, 2 from measles, and 2 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 45 and 39 in the two previous weeks, further declined to 32 last week; they included 16 in Glasgow, 5 in Dundee, 3 in Edinburgh and in Paisley, and 2 in Aberdeen. Of the 12 deaths attributed to diarrhœa, including 10 of infants under two years of age, 9 were recorded in Glasgow. Four of the 5 deaths from diphtheria, and 3 of the 4 from scarlet fever also occurred in Glasgow. Both the fatal cases of measles were returned in Edinburgh; and of the 2 deaths referred to enteric fever 1 each occurred in Glasgow and in Greenock. The deaths referred to diseases of the respiratory system in the eight towns, which had been 181 and 139 in the two preceding weeks, further declined to 118 last week, exceeding by 5 the number returned in the corresponding week of last year. The deaths resulting from different forms of violence, which had been 22 and 21 in the two preceding weeks, were but 15 last week. Of the 621 deaths from all causes in the eight towns, 190, or 31 per cent., occurred in public institutions. The causes of 21, or 3·4 per cent., of the deaths registered during the week were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·9 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 656 births and 455 deaths were registered during the week ending March 4th. The annual rate of mortality in these towns, which had been 24·1, 22·7, and 20·9 per 1000 in the three preceding weeks, further declined to 20·4, in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these 22 towns averaged 20·8 per 1000, while during the same period the death-rate did not exceed 16·1 in the 77 English towns and in the eight Scotch towns 17·0 per 1000. The annual death-rate last week was equal to 21·6 in Dublin (against 14·8 in London), 17·4 in Belfast, 17·8 in Cork, 28·5 in Londonderry, 30·1 in Limerick, and 33·1 in Waterford; in the 16 smallest of the Irish town districts the mean annual death-rate last week averaged 19·3 per 1000. The 455 deaths from all causes in the 22 town districts last week showed a further decrease of 10 from the numbers returned in recent weeks, and included 41 which were referred to the principal epidemic diseases, against 29 and 25 in the two preceding weeks; these 41 deaths were equal to an annual rate of 1·7 per 1000, the highest rates from these diseases being 6·6 in Queenstown, 7·1 in Londonderry, and 9·6 in Sligo. Of these 41 deaths from the principal epidemic diseases, 22 resulted from whooping-cough, 8 from measles, 5 from diarrhœa, 4 from enteric fever, and 2 from scarlet fever, but not one either from diphtheria or from small-pox. The fatal cases of whooping-cough, which had been 11 and 10 in the two previous weeks, rose to 22 last week, of which 11 occurred in Dublin, 6 in Londonderry, and 2 in Sligo. Seven of the 8 fatal cases of measles, all the 4 deaths from enteric fever, the 2 from scarlet fever, and 3 of the 5 deaths attributed to diarrhœa occurred in Dublin. The deaths in the 22 towns referred to diseases of the respiratory system, which had been 141, 137, and 110 in the three preceding weeks, further declined last week to 108. Of the 455 deaths from all causes registered during the week under notice, 141, or 31 per cent., were recorded in public institutions. The causes of 23, or 5·1 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death last week did not exceed 0·9 per cent. in the 77 English towns, and 3·4 per cent. in the eight principal Scotch towns.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeon: W. N. L. Cherry to Portland Hospital. Surgeons: H. M. Braithwaite to the *Vivid*, additional; C. D. Bell to the *Research*, on recommissioning; and A. Fairplay to the *Vivid*, additional, for disposal on the *Invincible* reducing.

### ROYAL ARMY MEDICAL CORPS.

Colonel G. W. Robinson has arrived home on leave from India. Lieutenant-Colonel M. L. Hearn has taken over the duties of Medical Inspector of Recruits in the Irish Command. Lieutenant-Colonel B. M. Skinner, M.V.O., has been appointed to the command of the Station Hospital at Rawal Pindi, in succession to Lieutenant-Colonel M. O'D. Braddell, transferred to Ahmednagar. Lieutenant-Colonel A. E. Morris has taken over charge of the Military Hospital at Cork. Lieutenant-Colonel H. D. Rowan, at present serving at Aldershot, has been selected to succeed Lieutenant-Colonel W. W. Pike, D.S.O., as Officer in charge of the Military Hospital at Tidworth Park. Lieutenant-Colonel R. G. Hanley, Dublin, has been placed under orders to embark for duty in South Africa. Lieutenant-Colonel W. A. Morris, commanding the Station Hospital at Cawnpore, has been granted six months' general leave in India with effect from April 17th. Major G. T. Rawnsley has been selected for appointment as Staff Officer to the Administrative Medical Officer of the East Lancashire Division at Manchester. Major R. F. E. Austin has been appointed a Specialist in Laryngology to the Third (Lahore) Division. Major G. St. C. Thom has been granted general leave for five months. Major C. H. Hale, from Stensall, has arrived in India for a tour of service. Major A. E. Smithson has been transferred from Wynburg to Pietermaritzburg. Major E. C. Anderson, D.S.O., from Kuldanna, has taken up duty at Rawal Pindi. Major G. F. E. Stammers has, on arrival in India, been appointed Sanitary Officer to the Fourth (Quetta) Division. Major E. B. Steel has been granted six months' general leave in India with effect from March 24th. Captain J. du P. Langrishe has been transferred from Poona to the Military Hospital at Kirkee. Captain F. H. M. Chapman, from Darjeeling, has taken up duty at the Station Hospital, Calcutta. Captain H. M. Morton, from Potchefstroom, has been posted for duty at Pretoria. Captain A. Dawson has been granted general leave for six months in India. Captain S. M. Adye-Curran has taken up duty as Specialist in the Prevention of Disease at Sialkot. Captain A. B. Smallman, on expiration of his tour of service in India, has been appointed to the Eastern Command and posted to Colchester. Captains W. C. Croly, J. T. Johnson, F. W. Lambelle, and J. E. H. Gatt have arrived in India. Captain M. H. Babington has arrived home on leave from Malta. Captain William G. Aviss resigns his commission (dated March 8th, 1911).

Lieutenant A. M. Pollard, on arrival in India, has been posted to the Second (Rawal Pindi) Division. Lieutenant V. P. Hutchinson has left the London District for duty in the Southern Command. Lieutenant W. R. O'Farrell has been transferred from Cairo to Khartoum for duty. Lieutenant A. D. Stirling, from Edinburgh, has joined at Piershill.

### INDIAN MEDICAL SERVICE.

His Excellency the Viceroy and Governor-General of India has selected Colonel G. W. P. Dennys, principal medical officer of the Derajat and Bannu Brigades, for the appointment of Inspector-General of Civil Hospitals in the Central Provinces, in succession to Colonel J. A. Cunningham, deceased. Lieutenant-Colonel H. H. B. Robinson has been appointed Residency Surgeon and Chief Medical Officer of Rajputana by the Foreign Department of the Government of India. Lieutenant-Colonel H. B. Melville, civil surgeon of Simla East, has been granted leave for one month and 15 days. Lieutenant-Colonel R. H. Castor, on return from leave, has been appointed to the Civil Medical Charge of the Shwebo District in succession to Lieutenant-Colonel F. J. Dewes, proceeding on leave. Major A. Leventon has been appointed Civil Surgeon of Lakhimpur during the absence on deputation of Lieutenant-Colonel E. R W. C. Carroll. Major H. J. Walton, civil surgeon of Bulandshahr, has been placed on Special Duty in connexion with the United Provinces Exhibition at Allahabad. Major G. Lamb, Bengal, has received an extension of his leave of absence from India for two months on medical certificate. Major J. Bowle Evans has been appointed Medical Officer of Health at Peshawar. Major R. G. Turner, civil surgeon at Saharanpur, has taken over duty as Civil Surgeon at Gonda. The Secretary of State for India has approved the grant of four months' study leave to Major F. A. L. Hammond. Captain C. Dykes has been appointed Civil Surgeon at Jaunpur, on return from leave. Captain E. J. C. McDonald has been posted to Jhelum, in succession to Captain S. B. Mehta, transferred. Captain L. Hirsch has taken over duty as Surgeon at the General Hospital, Madras. The services of Captain F. C. Rogers have been placed permanently at the disposal of the Government of Madras. Captain A. E. Grisewood has been appointed District Plague Medical Officer at Hoshiarpur, in succession to Captain H. Watts, proceeding on leave. Captain S. R. Godkin has taken over duty as Specialist in Advanced Operative Surgery to the Sixth (Poona) Division of the Southern Army. Captain R. McCarrison has been confirmed in his appointment of Agency Surgeon (Second Class) by the Foreign Department of the Government of India. Lieutenant M. D. A. Kureishi has been transferred from the Lahore Division to Rawal Pindi and appointed to the officiating medical charge of the 32nd Sikh Pioneers and the 28th Punjabis.

### SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

Laurence Melville Routh to be Lieutenant (on probation) (dated Feb. 6th, 1911).

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

South Wales Mounted Brigade Field Ambulance, Royal Army Medical Corps: Major John R. I. Raywood to be Lieutenant-Colonel (dated Dec. 8th, 1910).

Welsh Border Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant George Jubb resigns his commission (dated March 4th, 1911).

1st Lowland Field Ambulance, Royal Army Medical Corps: William Ferguson Mackenzie to be Lieutenant (dated Feb. 18th, 1911).

2nd Lowland Field Ambulance, Royal Army Medical Corps: Dugald Henry MacPhail to be Lieutenant (dated Jan. 4th, 1911).

*Attached to Units other than Medical Units.*—Major George Williamson resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated March 8th, 1911). Lieutenant Alfred H. Godwin resigns his commission (dated March 8th, 1911).

*For attachment to Units other than Medical Units.*—Norman Mello Fergusson to be Lieutenant (dated Jan. 15th, 1911).

### CLEAN DRINKING CUPS ON BOARD SHIPS.

We have formerly (THE LANCET, vol. ii., 1909, p. 1761) noted the attention which is directed in the German and American navies to mouth disinfection and to the prevention of the spread of disease on board ships by drinking cups which are used in common. The *Archives de Médecine et Pharmacie Navales* for February (an old friend which has this year taken to itself a new name) tells us that this use of a common drinking cup by the men is in the French navy thought to spread diphtheria, tubercle, cerebro-spinal meningitis, influenza, and other infectious diseases, as well as syphilis. To avoid these risks Dr. Bonain (Médecin Principal de la Marine) has devised a mechanism which offers a clean, sterilised drinking cup to every man. The drinking cups are conical and fit into one another very closely. They are held ready in one of two cylinders which are arranged in pairs on the walls or water-tank near the taps. From one cylinder, which is locked, cups can be withdrawn by a pull; they cannot be returned here, but each man, after he has filled his cup and had his drink, returns the cup to the other cylinder, where it is held till the man in charge comes round, unlocks that cylinder, removes, washes, and sterilises the used cups by boiling. He then puts them back in the first cylinder again and locks it up. We welcome this device, which will do good if the men will use it, and use it they will if they are taught thoroughly to understand its importance.

### DEATH OF ADMIRAL SIR ASSHETON CURZON-HOWE.

By the sudden death of Admiral Sir Assheton Gore Curzon-Howe, G.C.V.O., K.C.B., C.M.G., Commander-in-Chief at Portsmouth, many naval medical officers have lost a friend they can with difficulty expect to replace. He manifested towards his subordinates an unusual politeness and consideration which made him beloved. From many medical officers we have heard of him, and have learned the impression that he conveyed to them at his official entertainments that he was himself glad to meet them, of his personal support to them in their work, and of the trouble that he and Lady Curzon-Howe took, when he was Commander-in-Chief at Malta, to see that the wives and families of medical officers whose ships were away cruising should not be forgotten. He is deeply mourned in the navy.

### OFFICERS TRAINING CORPS OF LONDON.

We have received the report of the Military Education Committee to the Senate of the University for the year 1910, which gives details of the strength and efficiency of the Officers Training Corps Contingent. Since its formation in January, 1909, the objects of this corps have been to provide students at schools and universities with a standardised measure of elementary military training with a view to their eventually applying for commissions in the Special Reserve of Officers or the Territorial Force. The full advantages of the training do not accrue until cadets have taken Certificate B, for which at least two years' service in the corps is required. Already 11 cadets have proceeded to commissions in the Army, five in the Special Reserve and six in the Territorial Force. The general administration of the contingent has been entrusted by the Senate of the University of London to a Military Education Committee, which hopes that in future a much larger number of cadets will proceed to commissions. A fourth section has been added to the medical unit owing to the large number of medical cadets at the Middlesex Hospital. The officers of the medical unit comprise Major W. P. Herringham, Major H. H. Tooth, Captain A. M. H. Gray, Captain R. Davies-Colley, Captain A. E. Johnson, Lieutenant J. C. Briscoe, Lieutenant T. B. Layton, Lieutenant G. C. Mathison, and Lieutenant W. V. Corbett.

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A NEW HOSPITAL AT PUTNEY.—Sir William Lancaster, the chairman of the new Putney Hospital committee, points out in a recent issue of the *Times* that the late Mr. Chester bequeathed a sum of money which it is estimated will eventually amount to about £80,000 to provide the income for a general hospital to be built at Putney within 20 years of his death. Mr. Chester died about 10 years ago. The money required for building the hospital has been subscribed almost entirely locally, and the site has been given by a Putney resident. Sir William Lancaster hopes that the hospital will be ready for the reception of patients by the end of the summer. There will be 20 beds and a ward for children.

# Correspondence.

"Audi alteram partem."

## CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

*To the Editor of* THE LANCET.

SIR,—In regard to the somewhat ancient dispute whether Bell or Magendie discovered the motor and sensory functions of the anterior and posterior roots of the spinal nerves, it may be of interest to recall the courteous and generous manner in which Magendie dealt with Bell's claim to priority. In his second article, entitled "Expériences sur les Fonctions des Racines des Nerfs qui naissent de la Moelle épinière," Journal de Physiologie Expérimentale et Pathologique, 4e Numéro, Octobre, 1822 (the first article appeared in the same journal in August, 1822), he says:—

Avant de terminer cet article, je dois donner quelques éclaircissements sur la nouveauté des résultats que j'ai annoncés.

Quand j'ai écrit la note contenue dans le numéro précédent, je croyais être le premier qui eût songé à couper les racines des nerfs spinaux; mais je fus bientôt détrompé par un petit écrit de M. Schaw (Shaw) que ce jeune et laborieux médecin eut la complaisance de m'envoyer dès qu'il eut reçu le numéro de mon journal. Il est dit dans cet écrit que M. Ch. Bell avait fait cette section il y a treize ans, et qu'il avait reconnu que la section des racines postérieures n'empêchait pas les mouvements de continuer. M. Schaw ajoute que M. Ch. Bell avait consigné ce résultat dans une petite brochure imprimée seulement pour ses amis, mais non pour la publication. J'ai aussitôt demandé à M. Schaw qu'il voulût bien m'envoyer, s'il était possible, la brochure de M. Ch. Bell, afin que je lui rendisse toute la justice qui lui serait due. Peu de jours après je l'ai reçue de M. Schaw.

Cette brochure a pour titre:

"Idea of a New Anatomy of the Brain, submitted for the Observation of his Friends, by Ch. Bell, F.R.S.E."

Magendie goes on to say:—

Elle est très-curieuse en ce qu'on y remarque le germe des récentes découvertes de l'auteur sur le système nerveux.

He then quotes in full the passage ending:—

On laying bare the roots of the spinal nerves, I found that I could cut across the fasciculus of nerves, which took its origin from the posterior portion of the spinal marrow without convulsing the muscles of the back; but on touching the anterior fasciculus with the point of a knife the muscles of the back were immediately convulsed.

His comment on this is:—

On voit par cette citation d'un ouvrage que je ne pouvais connaître, puisqu'il n'a point été publié, que M. Bell, conduit par ses ingénieuses idées sur le système nerveux, a été bien près de découvrir les fonctions des racines spinales; toutefois le fait que les antérieures sont destinées au mouvement, tandis que les postérieures appartiennent plus particulièrement au sentiment, parait lui avoir échappé: c'est donc à avoir établi ce fait d'une manière positive que je dois borner mes prétentions.

It is clear from this quotation that Magendie admitted that Bell had anticipated him in the crucial method of dividing the spinal nerve-roots, but justly claimed that he, not Bell, established the fact that the function of the anterior roots is motor, and that of the posterior roots, sensory.

With all desire to give credit to Bell's masterly investigation of the functions of the cranial nerves, it must be admitted that Magendie rightly said that he was only "very near discovering the functions of the spinal roots."

I am, Sir, yours faithfully,

LEONARD GUTHRIE.

Upper Berkeley-street, W., March 3rd, 1911.

## THE MEDICAL BRANCH OF THE NAVY LEAGUE.

*To the Editor of* THE LANCET.

SIR,—May I ask for the hospitality of your journal again to draw the attention of the profession to the Medical Branch of the Navy League.

The object of the League is to enlist the interest of medical men throughout the country and to ask their help by their example and influence in keeping the country alive to the necessity of a strong navy. Without the absolute command of the sea our freedom and our national interests are in peril. Still less can we regard the imperial and colonial portions of the British Empire as secure. Twelve years ago we were able to transmit more than 100,000 troops and all the transport for an extensive campaign 6000 miles to the base of our operations without the mobilisation of a single extra warship, and this in face of the scarcely veiled hostility of two, if not three, first-rate Powers. Such at that time was our naval prestige that the millions necessary for such mobilisation were spared. Would it be so to-day?

Each medical man has much influence in his own locality, and can do much by himself joining and inducing his friends to join in the League, which is a strictly non-political body and has for its object the advocacy of a strong navy to safeguard that security which forms an essential background to all advance in commerce, science, and the social conditions of the people. I would point out that to be a member of the League a five shillings' annual subscription is all that is necessary; it is the influence and advocacy that is wanted much more than money.

I am, Sir, yours faithfully,

R. DOUGLAS POWELL,

March 5th, 1911. President of the Branch.

PS.—All who desire to respond to this invitation to join should send their names to the secretary, Medical Branch of the Navy League, 54, Welbeck-street, W.

## THE TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS, WITH ESPECIAL REFERENCE TO INTUBATION AND TO RADIUM.

*To the Editor of* THE LANCET.

SIR,—On Feb. 13th, Dr. W. Hill read a paper at the Medical Society on the above subject, and in the discussion which followed I ventured to give some of my own experiences which the author of the paper criticised in your issue of March 4th. May I briefly reply to these and answer his last criticism first of all?

It must have been quite obvious to all present that Mr. Bellamy Gardner's anæsthetic tube could only be used with the bronchoscope, and that I was thinking of this and unintentionally wandering from the subject (œsophagoscopy) under discussion. I am, however, much obliged to Dr. Hill for pointing out this mental slip, if only because it affords another opportunity of bringing to notice Mr. Gardner's excellent little device for administering chloroform during bronchoscopy in such a way that the surgeon's view through the tube is not obstructed. I am quite sure with Dr. Hill that, in spite of all the advances made in the administration of anæsthetics, rectal and otherwise, neither "Mr. Bellamy Gardner nor any other anæsthetist in his senses would dream of administering a general anæsthetic *through the œsophagoscope*, not even in those cases where there is a communication between the gullet and the air passages." The anxious author of the paper may rest well assured that I do not propose casting any burden on the gullet beyond those it already has to bear.

Dr. Hill strongly dissents from my view that chloroform is the best anæsthetic when general narcosis is considered desirable in direct œsophagoscopy. I believe, Sir, that the whole object of such discussions as he introduced is to elicit the opinions, based upon experience, of those who may have worked at the subject-matter of the debate. That being so, I have only to say that if a patient be carefully prepared (including, if it be thought desirable, the previous injection of morphia and atropine), and the services of an expert anæsthetist can be obtained, my experience has led *me* to prefer chloroform, and so far the record of a considerable experience has not been sullied by the "occasional disaster" which Dr. Hill warns us may "be not unlikely" if that drug be alone used. On the other hand, I am quite willing to believe that Dr. Hill's anæsthetists can get equally good results and satisfy his requirements when ether alone or chloroform and ether are used—obviously this has been *his* experience and is shared by some others.

I am sure Dr. Hill will agree with me that the best anæsthetic is that which gives to the individual worker the best results, and the choice will largely depend on those subtle and varying factors which go to the making of individual experience.

I am, Sir, yours faithfully,

Harley-street, W., March 6th, 1911. HERBERT TILLEY.

## THE SPHYGMOMANOMETER AND THE SPHYGMOGRAPH IN RELATION TO THE MEASUREMENT OF ARTERIAL BLOOD PRESSURES.

*To the Editor of* THE LANCET.

SIR,—Dr. C. O. Hawthorne has, I think, done good service to sphygmometry in publishing his address in your columns on "The Sphygmomanometer and the Sphygmograph in Relation to the Measurement of Arterial Blood Pressures."[1] I quite agree with him that the "time" element in the cycle of arterial pressure is lacking in the sphygmometer employed *à la* Riva-Rocci; and in fact any one-point observation of that cycle, whether indicated by the criterion of maximum oscillation of the mercurial column, or that of reappearance of the pulse after its obliteration, must be less or more misleading. The result of all my observations on the measurement of arterial pressure points to the conclusion that the pressure cycle should be read at no less than two points. But my recent studies on the auditory method of determining the arterial pressure[2] show that by its aid the entire cycle can be measured; therefore we must regard the adoption of this method as an important step in the evolution of the sphygmometer.

I am, Sir, yours faithfully,

Farnham, Feb. 25th, 1911. GEORGE OLIVER.

## THE LANTERN TEST FOR COLOUR BLINDNESS.

*To the Editor of* THE LANCET.

SIR,—I should be very sorry if anything in my letter was unfair to Dr. Edridge-Green, but in justice to myself I must point out that I began my experiments with my lantern as far back as three years after my appointment to the Western Ophthalmic Hospital, which was in 1884. So that I certainly did not crib my idea from Dr. Edridge-Green. I did not know that his lantern was now in use at the Admiralty, but I had a visit some little time back from Fleet-Surgeon Collingwood—then in charge of the recruiting station in Whitehall—and he told me he was just getting another of my telechromes fitted up similarly to the one in use in Victoria-street.

I find no difficuity in using wools and the telechrome if a sheet of some opaque material is hung across the room or passage where the lantern is placed. There is a hole in the sheet, and the candidate looks through the hole at the lantern, while he himself remains in daylight with the wools on a table before him. The colours in my telechrome may not satisfy Dr. Edridge-Green, but I have found them quite sufficiently good to detect numerous cases of colour blindness, some of which had passed the Holmgren wool test alone quite easily; and I do not believe that any man who can pass my combination test as described in my previous letter would be a source of danger either in a ship or on a train. In conclusion, I must say I still prefer my own method of varying the illumination. I think, with all due respect, that increasing or decreasing the illuminant by moving a lever is simpler and better than the introduction of neutral-tint glasses. However, "chacun à son gout!"

I am, Sir, yours faithfully,

A. ST. CLAIR BUXTON.

Mansfield-street, W., March 6th, 1911.

## EYE-STRAIN IN RELATION TO GENERAL HEALTH.

*To the Editor of* THE LANCET.

SIR,—Mr. Kenneth Campbell in THE LANCET of Feb. 25th, p. 541, criticises Dr. James Hinshelwood's explanation of the reason for the discomfort to which small degrees of astigmatism give rise. In my opinion, the true explanation is that the discomfort arises because the error is so slight; the patient makes no effort to correct it, and therefore the brain pictures are blurred and their mental interpretation requires the employment of more nerve force. If it were a pure case of muscle fatigue compensatory hypertrophy ought to counterbalance it, and the rule of the smaller the error the greater the discomfort would be exactly the reverse of what we know is really the case.

Refractive errors give rise to brain-fag and eye-strain. The latter is really much the rarer and is associated with efforts made to balance mal-adjustments of the eyes in binocular vision and long sight when of *medium* amount. Brain-fag arises from congestion of the high visual centres owing to the difficulty of interpreting "slightly fogged" pictures and unequal visual representations, and leads to anæmia of other centres and the various organs which demand a good blood-supply. One has only to recall the effect of mental concentration on the hearing centre, on digestion, and on the circulation of the hands and feet, to understand how effects can be brought about by a "mental circulatory congestion of the visual centres." High errors of refraction do not produce the same effects because the sensitive portions of the retino-cerebral tract are less finely developed. They produce an effect only when one meridian is emmetropic—viz., a doubly sensitive visual centre—and its results become manifest in the next generation who inherit a hypersensitive nervous system. These theories can be confirmed by careful observation and show the great need which exists for correcting all errors of the eyes at the earliest possible age in life. Their influence in these days of education accounts for a large number of the so-called cases of neurasthenia. The subject is one too large for the space of a letter to discuss at any length, but one I hope to treat of at length on some other occasion.

I am, Sir, yours faithfully,

Manchester, March 2nd, 1911. A. A. BRADBURNE.

## THE MEDICAL SERVICE IN FRENCH THEATRES.

(FROM A CORRESPONDENT.)

IN France they manage some things better than we do in this country: "Le Service Médical dans les Théâtres" proves this, but not in a very convincing way, for, as we shall see, we have here a very good idea but one indifferently carried out. If any mishap occurs in a London house of entertainment and a medical man happens to be among the audience the sufferer receives immediate attention of a kind. The medical man who is present can render first-aid and give instructions as to the removal of the patient, but there is no obligation, statutory or otherwise, on the part of the management of a house of entertainment to make provision for any unforeseen event which may arise. Things are different in France, where theatres, cafés-concerts, and other public amusements are directly under the supervision of the police under powers dating from 1790. The last police ordinance is dated August 10th, 1908, and by it the supervision of the Prefecture of the Police starts before the building is erected. Of the various provisions laid down for the safety of the public those with which I am now concerned are the *service médical*. Article 227 enacts that every establishment of the first category (that is, theatres) and every establishment of the other categories (circuses, hippodromes, velodromes, cafés-concerts, and other analogous establishments capable of showing scenes and other accessories of the stage), constructed to accommodate 800 persons or more, shall provide a medical service. *Le médecin de service* at the first requisition must be upon the spot to render professional assistance not only to the spectators but to the *personnel* of the establishment. A room suitably furnished shall be arranged *pour le service médical*. By Article 228 it is enacted that the medical men chosen by the management shall be approved by the Prefecture of Police, save the medical men of the *théâtres nationaux*, who are appointed by the Ministry of Public Instruction and Fine Arts. Article 229 requires the management to notify to the *Préfecture de Police* the manner in which the *service médical* will be assured and regulated. The service by Article 230 must be organised in a manner so as to have a medical man always present in the establishment from the commencement of the performance until the end thereof, as well as at all rehearsals. To ensure the attendance of a qualified practitioner Article 231 declares that if *le médecin de service* is

[1] THE LANCET, Feb. 18th, 1911, p. 424.

[2] See Proceedings of the Royal Society of Medicine, November, 1910, and a paper now appearing in Professor Schäfer's Journal of Experimental Physiology.

prevented by any reason whatsoever from attending the performance, he shall immediately notify the management of the establishment that he will take the steps necessary to ensure the attendance of another medical man as a substitute. It is provided by Article 232 that every medical man who shall be shown to have been neglectful or unskilful in his service shall be struck off the list of doctors of the establishment, and his services replaced by the management in the conditions provided in Article 229. As to the furnishing of the surgery, Article 233 provides that a box of remedies shall be provided in the *cabinet du médecin*. This box of remedies shall contain things likely to meet the most urgent needs, and shall carry upon the inside of the cover the names of the medicaments and objects which are contained therein. *Le médecin de service* shall see that the instruments are always in a good state and that the medicaments have not deteriorated. He must transmit to the prefecture the result of his observations from time to time.

The police order from which the foregoing is taken supplements an ordinance of May 12th, 1852, and although that of August 10th, 1908, says little about the equipment of the medical man's room, yet we learn something of it from the discussions at the last Congrès International de Sauvetage which met at Brussels. The place for the reception of patients must have a bed, or a couch with pillows, chairs, a table, a wash-jug and basin, a water-bottle and glasses, napkins, a *couverture* of wool, some flannels, and a chandelier. The latter is explained from the fact that in 1852 there was no electric light. The medicaments, instruments, &c., are also scheduled. In effect, the ordinance stipulates that there shall be kept in the *cabinet du médecin* court plaster, amadou, lint, a dozen compresses, bandages, artery forceps, surgical needles, and splints and pads of different dimensions. For circuses and hippodromes there must be provided gouttières (wire-gauze splints) for the thigh, leg, arm, and forearm. The medicaments are, *inter alia*, distilled mint water, eau de Cologne, camphorated spirit, acetate of ammonia, sulphuric ether, packets of emetics of 5 centigrammes each, flour of mustard, and sugar.

The foregoing provisions apparently are satisfactory, but this is not exactly the case. Although Paris possesses a *conseil de salubrité* it seems, as was stated at the Brussels Congress, an anomaly that the duty of supervision should be vested in the prefecture of police. Article 233 of the last ordinance providing that the instruments, medicaments, &c., shall be in good state ends, "*Il devra Nous transmettre ses observations.*" The *Conseil de Salubrité* consists of doctor, pharmaciens, and others well qualified to have the supervision in general, yet it has not that power direct. It is the Prefect of Police who has to see that the theatre has a surgery, that it is properly furnished, that the box of medicaments does not want any of the medicaments that the *Conseil de Salubrité* considers of importance, and that its contents shall represent modern pharmaceutical knowledge and be in good condition.

The *Gaulois*, by no means satisfied with existing arrangements, goes so far as to say that if peradventure a person with a curious turn of mind went into the *cabinet du médecin* in some of the theatres and saw the box of medicaments, if it were not for its shape he would be pardoned for assuming that it was a case of Burgundy, for the dust upon it is sufficient to rejoice the heart of any butler. The writer in the *Gaulois*, generally well informed, proceeds: "A lady or gentleman in the audience may be taken ill, she suffering from the heat, and he, if he be waiting for a friend, from the crush. They are at once taken to the *cabinet du médecin*, and the doctor invariably orders the patient to the balcony. If the fresh air is inefficacious the doctor orders the patient's removal to the nearest pharmacy." The *Syndicat des Medecins des Théâtres*, consisting of 450 members, demand that the present state of things should be reformed, and in view of their mission and their responsibility they sent to the Brussels Congress Dr. Saqui. The doctor has already caused some commotion in managerial circles by the action he has taken, and at the congress he called for the strict observance of Articles 227 to 233 of the ordinance which I have discussed above. Dr. Saqui's resolution was carried unanimously. The *Gaulois* further points out that a place of entertainment may accommodate only 799 persons, and thus not come under M. Lepine's ordinance, and it calls for the extension of Article 227, so as to bring the smaller houses of entertainment within its operations.

It should be added there is no particular statutory obligation for theatres to have a medical practitioner in attendance during the performances, but the power of imposing such an obligation belongs to the municipal authority, represented in each commune by the mayor, except in Paris, where such power is vested in the Prefect of Police. The national theatres referred to in Article 228 of the ordinance are the Opéra, the Comédie Française, the Opéra Comique, and the Odéon. From the construction of Article 228 of the ordinance it seems clear that the management pay the practitioners for their services, but in regard to the State theatres the ordinance gives no indication as to whether the doctors are paid out of the public funds or by each individual theatre.

## LEEDS.

(FROM OUR OWN CORRESPONDENT.)

### *Leeds Sewage Works.*

IT may be remembered that some three years ago the West Riding Rivers Board took action against the Corporation of Leeds in connexion with the inadequate treatment of the sewage of the city, and that an order was made that "the defendants do forthwith commence and diligently proceed to carry out the necessary works to enable them to treat and deal with the whole of the dry-weather flow of liquid falling or flowing into the river Aire through the sewers and sewage disposal works of the defendants." Following on this the corporation has acquired a large area of land at Temple Newsom, and work has been going on actively. For many years there is no doubt the purification of the sewage, prior to its being turned into the river, has been most inadequate. For the present, however, Leeds is doing all it can to meet the demands of the rivers board. A complete sludge pressing plant has been put down to deal with the sludge after precipitation in the tanks, and now about 1000 tons are dealt with daily by being pressed into cakes which are used as manure. With the purchase of the land, however, there will follow the supplementary part of the scheme—namely, the provision of bacteria beds to which the effluent from the tanks after sedimentation will be pumped a distance of some two miles. The power required for the pumping will be provided from the electricity works of the corporation. However quickly the work goes on, and no time is to be lost in getting out specifications as soon as the consent of the corporation is obtained to the scheme, it will of necessity be at least two years before the new beds at Temple Newsom can be in actual use. It will also be necessary to construct two new large sewers, and in all it is understood that the scheme will involve an expenditure of £1,277,000. The ratepayers must console themselves with the knowledge that the expenditure is absolutely necessary, that the expense will be spread over ten years, and with the comforting reflection that Leeds may in the future have a river running through it which is not an offence to the eyes and to the nose.

### *The Leeds Association for the Prevention and Cure of Tuberculosis.*

The annual meeting of this association was held lately under the chairmanship of the Lord Mayor, Mr. W. Middlebrook, M.P., and was well attended. The hospital for acute cases is housed at Armley in the old family house of the Gotts, and a pleasing feature at the meeting was the announcement that Mr. Frank Gott, the representative in Leeds of that family, had as a coronation gift remitted the rent for the current year. The committee, in presenting its eleventh annual report, mentioned that the association now possesses 90 beds—35 at Gateforth and 55 at Armley—which is an increase of five on last year. At Gateforth 134 patients were treated as against 125 last year, while at Armley the numbers were 217 as against 207. In the out-patient department there has been a considerable increase of work, and this has involved the extension of the premises in Great George-street. During the past year the association has had the services of a visiting nurse, who has followed the patients to their homes and advised them in their efforts to carry out the advice of the medical officers of the institution. At Gateforth it is intended, when the increased accommodation for children is provided, to arrange for the presence of a skilled teacher who will carry on educational methods in the same way as is now being done in the open-air schools in

various parts of the country. The children in this department will be those with the mildest manifestations of tuberculosis and those who, though not consumptive, come from homes in which they are clearly exposed to infection. It was pointed out that the number of deaths from consumption in Leeds last year was 510 and from other forms of tuberculosis 241. The number of cases voluntarily notified last year was 1942, as against 934 for the previous year. It is clear that the association is doing excellent work and that it deserves every encouragement and support.

*Leeds Association for Nursing the Sick Poor.*

The annual meeting of this Leeds charity was held recently under the chairmanship of the Lord Mayor, when the record of the work of the past year was laid before the subscribers. This charity, supported entirely by voluntary subscriptions, is regarded as one of the most useful and possibly the least liable to abuse of all the charitable institutions of Leeds. The two special features by which it is characterised are that no case is undertaken by the association which is not under the care of a medical man, and that its main object is the nursing of the necessitous poor in their own homes. Patients are brought under the notice of the society in various ways; thus last year 2147 cases were recommended by private medical men and by club doctors, 315 by the officers of the Public Dispensary, 193 were patients who had been in the infirmary, 19 were former patients of the Hospital for Women and Children, while 371 were attended at the request of neighbours, 62 at that of clergymen and visitors, and 36 at that of inspectors, Poor-law medical men, and the Charity Organisation Society. There were on the books at the end of the year 283 patients, so that the total number of patients attended during the year 1910 was 3426, and on these the number of visits amounted to 87,806. An arrangement has been in operation with the Public Dispensary by which the attendance of a nurse has been secured for a certain number of hours daily, and this has been found of the utmost use. There are now four centres, and as soon as funds will allow other centres, for which there is a continual demand, will be organised. All who have worked, as your correspondent has done, with the assistance of these nurses will appreciate the excellence of the work which is being done, and bear testimony to the necessity of an extension of the scope of its activities. During the last year an experiment has been made in the provision of a special nurse who, on the payment of a small sum, will visit patients at their own homes, and in this way those whose circumstances do not permit of their securing the undivided services of a trained nurse, but who can afford a small sum, have privileges at their command which experience has shown that they are not slow to avail themselves of. It is hoped that this part of the work may increase, and care is being taken by a scrutiny of the applicants that abuse does not creep in on the part of those who could afford nurses from any of the private institutions of the city.

March 7th.

## WALES.

(FROM OUR OWN CORRESPONDENT.)

*Death of Dr. William Williams.*

THROUGH the death at Bournemouth on Feb. 16th of Dr. William Williams, medical officer of health of the county of Glamorgan, the county council has lost a loyal and efficient official and the public health service one of its most prominent members. He had been ailing for some months, and at the beginning of the year was given leave of absence for three months in the hope that a period of complete rest would restore him to health, but the anticipation unhappily was not fulfilled. Dr. Williams was born near Dolgelly in 1857 and was educated at the Dolgelly Grammar School, later proceeding to the Aberystwith College of the University of Wales and to Oxford, of which University he was M.A. and M.D. He also held the D.P.H. of Oxford. In 1892 he was appointed the first medical officer of health of Glamorgan and at once set about making a sanitary survey of the whole county, the record of which placed him at once in the front rank of sanitarians. He displayed great industry and much painstaking research in the collection of statistics relating to the incidence of puerperal fever and elaborated his original observations in the Milroy lectures in 1904. His most important work in later years was an elaborate report upon the water-supplies of the county of Glamorgan, which led the county council to decide to ask Parliament, though unsuccessfully, to sanction the formation of a water board for the county. The establishment of the Cardiff City and County Public Health Laboratory was largely due to his advocacy, and the good results which were anticipated from its formation have been more than justified. Dr. Williams was rarely, if ever, at cross purposes with the local authorities with whom he was brought officially in contact, and although of a somewhat retiring, almost shy, disposition he could hold his own in any of the controversies in which he was engaged, though his strength lay rather in the thoroughness with which he mastered his subject in the study than in his ability as a debater. The county council had come to regard him as a competent and safe adviser in the many problems with which it is beset in a rapidly growing industrial district, and the district councils accepted his recommendations, even though they sometimes acted upon them somewhat tardily. His death at the comparatively early age of 54 years is a source of great regret to all those with whom he was brought in contact, and the sincerest sympathy is felt with his widow and her three children in the loss which they have sustained.

*Swansea General and Eye Hospital.*

The Swansea Hospital was established in the year 1817, though the principal portion of the present building was not erected until the year 1869. Since that date extensions have been made, including a circular operating theatre, and there is now accommodation for 140 patients. During last year 1836 patients were treated in the wards and 9032 out-patients were dealt with. The finances of the institution appear to be in a satisfactory condition, for the expenditure of £9816 was more than met by the income to the extent of £800. It has been realised by the board of management for some time that the resources of the institution were being overtaxed, and a scheme has now been proposed by which 80 beds will be added to the hospital, a new dispensary will be erected, and a separate nurses' home provided. The scheme also includes a new waiting lobby, a covered way over the main entrance, additional bedrooms for the staff, rearrangement of the kitchen, and operating theatres for the eye hospital and for the out-patient department. The estimated cost of these alterations is about £30,000, towards which sum nearly one-fourth has already been promised.

March 7th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Royal Edinburgh Asylum.*

THE annual meeting of the Royal Edinburgh Asylum for the Insane was held on the afternoon of Feb. 27th in the City Chambers, Edinburgh, Lord Provost Brown presiding. The managers' report states that during the year the number of patients under treatment at Craig House reached its maximum, there being at one time 226 patients paying the higher rates of board. In the West House also the numbers had increased. The financial position of the asylum was satisfactory and the managers had embarked on the renovation of West House. The physician-superintendent, Dr. G. M. Robertson, read his report, which stated that the total number of patients on the register on Dec. 31st was 758, of whom 12 were absent on probation. There came under treatment during the year 947; cases discharged recovered numbered 70; discharged unrecovered 59; died 60. As causes of insanity alcoholic excess continued to hold the premier place. There seem to be indications that among men this cause was tending to diminish, but among women there was a decided increase. Influenza took the next place as an exciting cause. Political excitement had not furnished any cases of insanity during the year. Two cases were quoted in which cure was rapid after the administration of thyroid gland, and one of the insanity of exophthalmic goitre where cure resulted from treatment by the serum of a goat from which the thyroid

had been removed. In view of the interest aroused at present in the question of divorce for insanity the length of residence before cure becomes a matter of interest. Three patients recovered who had been respectively 6, 7, and 15 years in the asylum, and in another case insanity had lasted for over five years. These cases were all cases of melancholia, so that if ever incurable insanity of five years' duration be made a legal cause for divorce cases of true melancholia could hardly be included. The total number of deaths was 60, a proportion of 8 per cent. of the average number resident and the lowest death-rate for over 20 years. There were only five deaths due to consumption and in only one of these phthisis was not present on admission. The most important event of the year was the meeting of the Medico-Psychological Association at Craig House. At that meeting several papers were contributed by members of the Craig House staff. On the laboratory of the asylum the managers were spending £600 a year in salaries and working expenses, including therein a contribution towards the laboratory of the Scottish asylums of £175. The public might be assured that the gift of £100 or £150 towards the support of a research scholar would be money well expended at the present time. Salvarsan had been used in the treatment of general paralysis of the insane. In a good many cases there was no apparent benefit, but one case, one of the first to be treated, made almost at once the best apparent recovery of any case of undoubted general paralysis that Dr. Robertson had yet seen. He believed there was a defect in the links of the chain of reactions in the treatment of general paralysis by salvarsan. He was remedying this fault by injecting at the same time human serum from patients treated by salvarsan for another disease. The combined method gave more hope in combating the disease. With regard to the nursing, he had endeavoured to convert the asylum into a true hospital for the treatment of a special disease, administered on the lines of a general hospital, with female officials.

*Workmen's Compensation and Medical Examination.*

The Lord Justice Clerk in an important arbitration case under the Workmen's Compensation Act last week stated that where the employer intimated that he was prepared to pay compensation under the Act, and called upon the workman to submit himself to medical examination, any unnecessary delay on the part of the workman in submitting himself to examination would cut him off from compensation during the delay.

*Aberdeen Sick Children's Hospital: Annual Meeting.*

The annual meeting of the Royal Aberdeen Hospital for Sick Children was held in the Music Hall, Aberdeen, on March 1st. The financial statement showed that the ordinary income for the year 1910 came short of meeting the ordinary expenditure by £1192 10*s.* 10½*d.* Fortunately, however, during the year £2750 2*s.* 2*d.* were received in legacies, and £1150 2*s.* 2*d.* of this sum were transferred to the revenue account, thus reducing the deficit to £42 8*s.* 8½*d.* The sum of £600 was received during the year for the permanent endowment of a cot to be named "Stewart Wilson Cot, in memory of Betty Gow." As a result of the appeal for subscriptions for the new hospital fund £10,555 7*s.* 1½*d.* have already been received. The annual report showed that the number of in-patients for the year has been 954 and the number of out-patients 1892. The cost has been about 2*s.* 3*d.* per child per day. The report was unanimously adopted

*Carnegie Trust and Medical Inspection of Children.*

The report of the Carnegie Dunfermline Trustees on the medical inspection of school children which is undertaken by them has just been issued. When so much discussion has taken place regarding the various methods of carrying out this work, and so many different ways have been adopted by the numerous authorities for inspecting the children under their control, it is interesting to hear what measures have been taken by a burgh where in this matter expense is no object, and where an organisation is already in existence which should be able to give to the scheme its fullest development. The system in Dunfermline, which is carried out at the expense of the Trust, is much more elaborate and thorough than that adopted by any other town in Great Britain. In most other places public authorities could not afford to burden the rates with the expense which is borne by the trustees in making the system so efficient. The report, which is the work of Mr. John C. Bridge, is a volume of about 90 pages of charts and letterpress. At the outset it is stated that the inspection has been carried out on the following lines: Complete examination of the children at the four school periods, inspection of every child, and a complete examination of those children who have special defects, or who on inspection are deemed to require a special examination. In that way 4454 children have been examined and inspected during the year. Dealing with the school buildings, Mr. Bridge points out that two are not well situated from the health standpoint. Regarding nutrition, the report says that each year has shown that the children of Dunfermline fall below the general standard. Two factors contributing to the lack of proper nutrition are the want of sufficient sleep and the work as messengers done by school children after hours. Dr. Bridge expresses the opinion that one hour for dinner is too short, and adds that in 102 badly nourished children he found no trace of organic disease, their condition being due rather to want of proper feeding. In regard to cleanliness the standard is being raised, but he suggests that every house now built should have a bath, which he looks upon as being as necessary to the house as a kitchen.

*Another Gift to Dundee by Mr. J. K. Caird.*

Mr. J. K. Caird, LL.D., has purchased and given to the city of Dundee Spring Grove mansion house with an acre of garden to serve as a resting-place and reading-room for the aged and infirm; also £1000 to provide for repairs.

March 7th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Dinner of the Dublin University Biological Association.*

THE annual dinner of the Dublin University Biological Association was held last Saturday, some 80 covers being laid. Mr. W. I. de C. Wheeler, the President, was in the chair, and among the speakers were Sir Thomas Myles, Professor W. H. Thompson, Mr. W. Kennedy, Mr. E. H. Alton, Mr. Frazer, and Mr. Culverwell. Mr. C. Arthur K. Ball has been elected President for next session.

*A Compliment to Sir Charles Cameron.*

The members of his staff in the public health office of Dublin have presented to Sir Charles Cameron a replica in Irish walnut of the Speaker's chair in the Irish House of Commons.

*Death of Dr. Patrick O'Keeffe.*

Dr. Patrick O'Keeffe, who died last Sunday, was for many years senior medical officer to the Mountjoy Prison in Dublin. He began his career in the prison service in the old convict prison on Spike Island in Cork Harbour, where he had many of the Fenian prisoners of the '67 rising in his care. On the closing of that prison he was transferred to Mountjoy. Dr. O'Keeffe had an unerring memory for faces, so that he knew by sight an appreciable proportion of the habitual criminals in Ireland. Though a man of great humanity he never lapsed into sentimentality.

*Increased Accommodation at the Royal Hospital for Incurables.*

Plans for the new consumptive wing of this institution have been accepted and building is to commence shortly. The hospital now accommodates some 30 consumptives, but the new building is to afford beds for 100.

*Convalescent Home, Stillorgan.*

During the year 1241 patients were admitted to the Convalescent Home, Stillorgan, Co. Dublin, 933 to the free wing and 308 to the pay wing. Preference is given to those likely to be able to return to work after a short stay in the country, and particularly to patients from the Dublin hospitals. No fewer than 600 patients had to be refused admission for want of space, so the committee has decided to build an annexe capable of holding 12 beds.

*The Belfast Maternity Hospital.*

At the 117th annual meeting of this, one of the very oldest charities in the North of Ireland on Feb. 28th the medical report submitted showed that during 1910 there had been in all 1065 deliveries—viz., 546 in the

hospital and 519 in the extern district—with only four deaths, a mortality of only 0·37 per cent. In the gynæcological department there were 400 patients treated. Financially, the year was wound up with a balance in hand of £221 12*s.* 10*d.* The balance at the end of the previous year was £235 13*s.* 5*d.* An interesting feature of the meeting was the fact that one of the principal speakers was Mrs. Crozier, wife of Most Rev. Dr. J. B. Crozier, Archbishop of Armagh and Primate of All Ireland, whose great-great-grandfather, Dr. Bartholomew Mosse, founded the Rotunda Hospital in Dublin. At his own expense Dr. Mosse opened as a hospital a house in George's-lane, Dublin. This was the first maternity hospital established in the British dominions. Two years later application was made by some well-disposed persons in London to the directors of that hospital for plans, scheme, and regulations, and a year later a hospital was established in London. The hospital in St. George's-lane became too small, and eventually Dr. Mosse, in 1748, with his own restricted means, purchased the ground on which the present Rotunda stands. Dr. Mosse died in 1759, a comparatively young man, at the age of 47 years.

*Belfast Corporation Medical Officials' Salaries.*

The Belfast corporation decided on March 1st to advance the salary of the medical superintendent officer of health (Mr. H. W. Bailie) from £600 to £800, subject to the approval of the Local Government Board, and of the visiting physician to Purdysburn Fever Hospital (Dr. A. G. Robb) from £480 to £580.

*Ulster Medical Society.*

At the meeting of the Ulster Medical Society held on March 2nd in the Medical Institute, Belfast, Mr. A. B. Mitchell read a paper on 110 Consecutive Operations for Gastric or Duodenal Ulcer, done between September, 1908, and February, 1911, in all of which gastro-jejunostomy was performed, with or without some additional operation. The following of the paper was helped by the fact that the audience had in their hands a printed synopsis of the cases. In the discussion Dr. W. Calwell, Dr. J. Rusk, Mr. J. B. Moore, Mr. J. O'Doherty, and Mr. H. Stevenson took part.

*Irish Medical Association.*

The annual meeting of the Irish Medical Association is to be held in Cork, for the first time in 12 years, on June 13th. The meeting will be held in University College. The Lord Mayor and the High Sheriff will entertain the guests. Interesting excursions are being arranged.

*Royal National Hospital for Consumption for Ireland.*

This hospital reports year by year an increase of work. Its operation is confined as far as possible to early or incipient cases of the disease, where permanent alleviation or cure might be expected. In 1910 the number of cases treated was 440, of whom 86 were in hospital at the end of the year. The medical report classifies 59 as "very much improved," a term defined as meaning "apparent arrest of the disease, i.e., general health is completely restored; and there are either no physical signs in the lungs, or only those signs which are compatible with a completely healed lesion"; 85 patients are classed as "much improved," i.e., with "complete restoration of general health, physical signs still present but very much diminished"; 90 were "improved"; 60 cases remained "stationary"; 31 became "worse"; and 10 died. The average stay in hospital was about 11 weeks, the maximum being 46 weeks.

March 7th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Potatoes in the Dietary of Diabetic Patients.*

AT a meeting of the Société Médicale des Hôpitaux held on Feb. 17th M. Rathery said that it was an error to suppose that potatoes were an article of diet permissible to diabetic patients; he considered, on the contrary, that they ought never to be freely permitted in such cases. He quoted a number of clinical observations showing, on the one hand, that even such very small quantities of potatoes as 50 grammes might suffice to cause a reappearance of sugar in the urine, and, on the other hand, that diabetic patients did not by any means always assimilate the carbohydrates of potatoes more easily than those of other starchy foods; they sometimes even assimilated them less easily. Speaking generally, it might be said that in the majority of cases of diabetes potatoes were to be considered as an article of food similar to other dietetic substances rich in carbohydrates. In some cases, however, potatoes seemed to possess special properties of assimilation which might be either greater or less than those of other starchy foods. This was in fact a particular example of the law discovered by Bouchardat, according to which each diabetic patient had a personal coefficient for the quantitative and qualitative utilisation of carbohydrates.

*Hæmoglobinuric Bilious Fever in the Island of Réunion.*

Speaking on the subject of hæmoglobinuric fever at a meeting of the Société de Pathologie Exotique M. Ozoux said that an experience of 54 cases had led him to believe that no reliance could be placed on any of the orthodox remedies whether general or local; the jaundice, the pyrexia, and the hæmolysis usually resisted all forms of medication, and the disease came to an end without the clinical history supplying reasons for attributing the patient's recovery to any particular detail of the treatment. The best method seemed to M. Ozoux to be the administration of large doses of alkalies just as in yellow fever. Subcutaneous injection of fresh white of egg appeared to him to have a favourable effect on the hæmolysis and on the progress of the disease. The malarial origin of the disease and the influence of treatment by quinine were not proved. The mortality was 27 per cent. of the cases. Severe forms of the illness with hæmorrhage, uræmia, well-marked jaundice, and speedy death were frequent.

*Plague in Manchuria.*

At a meeting of the Academy of Medicine held on Feb. 21st M. Chantemesse made an interesting communication on the subject of the present severe epidemic of plague in Manchuria. He said that the marmots of Lake Baikal were very susceptible to the microbe of plague, and that the first persons attacked were six hunters in October, 1910, their symptoms consisting of spasmodic cough and profuse expectoration soon followed by death. The bacillus causing pneumonic plague, which was the prevailing type of the present epidemic, was allied to the bacillus which had been isolated in the bubonic form of the disease. Persons between 20 and 40 years of age were peculiarly liable to be attacked. The disease was spread principally by means of the railways on which germ-carriers were crowded together in the third- and fourth-class carriages. As the period of incubation was from eight to nine days, the distance to which germ-carriers were capable of conveying the infection might be imagined. The return of fine weather checked the progress of the disease, but did not arrest it. Prophylactic measures of vaccination had rendered great service in Manchuria.

*Bequests to Scientific Institutions in Paris.*

M. Loutreuil, a Frenchman of humble origin, who possessed little if any education at the time of leaving his native village, subsequently acquired an amount of scientific knowledge which he applied profitably in various industrial enterprises. Having made an immense fortune by his industry and ability during a 50 years' residence in Moscow, he resolved that the greater part of it should on his death be available for the benefit of science. He has accordingly bequeathed 100,000 francs to the Pasteur Institute, 1,000,000 francs for scientific research, 2,500,000 francs to the University of Paris, and 3,500,000 francs to the Academy of Sciences.

March 13th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*The Hygienic Exhibition in Dresden.*

THE preparations for the great International Hygienic Exhibition to be held in Dresden are almost finished, and it is expected that this one will present a contrast to some other exhibitions by being ready on the day appointed for the opening in May. The principal roadway traversing the exhibition ground will be 40 metres broad and 700 metres long, and will extend in front of the pavilions officially assigned to the different nations represented. The pavilions

of Austria-Hungary, Russia, Japan, China, Switzerland, Brazil, Spain, and Mexico will be very fine, but the handsomest and best provided of all will be that of the French Republic, for which the French Parliament has allowed not less than 340,000 francs. It is much to be regretted that Great Britain will not be officially represented, although the committee, of which H.R.H. Prince Christian is patron, did everything that was possible in the hope of inducing the British Government to reconsider its decision. The German Empire, the individual German States, and the leading cities and great corporations of the Empire will, of course, do their best to make the exhibition a success. It will be divided into a scientific section and a general section. The scientific section will provide professional hygienists with opportunities of becoming acquainted with all the recent advances that have been made in the different branches of hygiene, subjects which are presumed to be well known to experts being excluded. The general section is intended for the public at large, and will give a complete view of the arrangements of hygienic institutions. The various subjects of exhibition, illustration, or discussion will be divided into 12 groups. The first group will include questions relative to air, light, soil, and water. The second group, which will deal with the hygiene of towns and dwelling-houses, will probably be one of the principal attractions of the exhibition; the methods of planning towns and cities, the hygienic features of public and private buildings, their ventilation, heating, lighting, and sanitary arrangements, and the multiplicity of contrivances essential to modern home comforts will be shown. A sub-group will include questions relative to cemeteries and crematoria. The third and fourth groups will be occupied with food, clothing, and physical culture. In the third group rational systems of feeding will be explained, specimens of food, both of good quality and spoiled, will be shown, and the influence of unwholesome food on health will be pointed out. An exhibition of artificial food preparations will be connected with that department. In the group which includes physical culture the advantage of cleanliness for the general health will be shown. In the fifth group will be shown the influence of work on the health of the individual, together with an outline of the arrangements made for protecting the health of those who are employed in factories and workshops. The sixth group will be devoted to infectious diseases, their prophylaxis and treatment; the seventh group to hospitals, sanatoriums, nursing, and first aid; and the eighth group to whatever concerns the health and well-being of children and young persons, including the care of infants and school children. The ninth group will have for its subject the hygiene of travel, illustrated by the arrangements made for the preservation of health on railways and on board ship; a great number of models will be shown in explanation of the methods and procedures described. The next two groups will take up military, naval, and tropical hygiene, whilst the twelfth and last will consider statistical questions. In addition to these 12 principal groups there will be an historical department, including models and documents concerning hygiene in former times; a special section on the hygiene of sport and athletics of every description will be connected with the exhibition, and an extensive athletic ground will be provided for the holding of great international competitions. There will also be a "sports laboratory," in which scientific observations may be made on athletes before, during, and after their various feats and exercises. From the above outline of the programme it may be seen that the International Hygienic Exhibition at Dresden promises to be one of the most remarkable events in the history of exhibitions.

### *Poisoning by Margarine.*

During the month of November, 1910, a considerable number of mysterious cases of poisoning occurred in various parts of Germany, some of them terminating fatally. It was, however, eventually ascertained that the cause of the poisoning was a certain kind of margarine made at a well-known margarine factory at Hamburg. Until Dec. 5th, 1910, there were 200 of these cases in Hamburg alone, together with a similar number in various other towns of Germany. It often happened that all the members of a family became ill after having eaten food prepared with this margarine. After the above date, however, only a few cases occurred because the sale of the preparation was stopped. Dr. Dunbar, chief medical officer to the hygienic institute of the State of Hamburg, has given in the *Deutsche Medizinische Wochenschrift* a description of the investigations that were made, as well as the results obtained. Margarine is very extensively used in Germany, the annual production being estimated at 100 millions of kilogrammes, having a value of 100 millions of marks = £5,000,000. It is manufactured by the chemical treatment of beef suet, to which some oil is added. A special Imperial law concerning the production of margarine stipulates, among other provisions, that it must contain at least 10 per cent. of sesame oil, and the sale of margarine is under strict control, great care being taken to prevent it from being mistaken for or sold as genuine butter. The boxes in which margarine is stocked in the shops have the word margarine printed on them. No undesirable results have been connected with the manufacture and sale of margarine until the cases of poisoning now under consideration. On inquiry at the margarine factory it was found that the poisonous product had been prepared with an oil which had been imported from India into England under the name of "cardamum oil," a specimen of which was supplied to the laboratory. It had a consistence similar to that of butter and a disagreeable aromatic smell. Administered to dogs 1·5 grammes of the refined oil produced vomiting within half an hour and contraction of the abdominal muscles, the dogs being to all appearance very ill. It was, therefore, obvious that the cardamum oil was the starting-point of the poisoning. To ascertain whether the poisoning was due to the oil itself or to some negligence in the process of refining, a quantity of the oil was refined in the laboratory itself, so that all the soluble toxic substances were removed. The result was that the action of the refined product on dogs was the same as that of the raw product. Dr. Dunbar tried to investigate the nature of the cardamum oil, but the inquiries which he made in that direction from chemists and commercial agents were completely without result, cardamum oil being totally unknown to them. The nature and the chemical constitution of the cardamum oil led Dr. Dunbar to suppose that it was identical with chaulmugra oil, especially because an examination of its optical properties showed that it produced a specific rotation of 50·4°. The high price of chaulmugra oil, which costs 9.50 marks per kilogramme, made it, however, unlikely that this oil was used in the manufacture of margarine. The cardamum oil, on the other hand, cost the factory only 21 marks (= £1 1*s.*) per 100 kilogrammes. Dr. Dunbar then made inquiries as to whether a similar low-priced fat could be obtained from some other euphorbiaceous plant, and he succeeded in ascertaining that the so-called "maratti" fat was identical in consistence, colour, smell, and chemical constitution with the cardamum oil, and that 2 grammes of "maratti" fat given to dogs produced vomiting after the same time as the same quantity of cardamum oil. He further succeeded in obtaining from the seed of hydnocarpus an oil having the same optical properties as "maratti" fat and cardamum oil, and producing in dogs the same symptoms. It thus became clear that the so-called cardamum oil used in the margarine factory was either "maratti" fat or a product derived from hydnocarpus. Three grammes of this margarine actually produced the same symptoms in dogs as 2 grammes of "maratti" fat. Margarine from other factories given to dogs was harmless. It is obvious from this incident that some control is needed over the use of the oils which are admixed with the real margarine.

March 6th.

## ITALY.

(FROM OUR OWN CORRESPONDENT.)

### *Mania Errabunda.*

THE press has been recording an unusual number of cases in which individuals, male and female, have left their homes and accustomed associations and, though traced to several points of their route, are still baffling the efforts of interested search parties. Descriptions of their personal appearance, of their dress, of every detail in fact which can lead to their discovery and reclamation, are accompanied by surmises as to the cause of their wayward obsession, "loss of memory" being the most common of these. In more than one case it has been made out that epilepsy has been not unknown in their family, while their demeanour for some time

before their abandonment of house and home has been suggestive of melancholia, incipient, if not confirmed. "Mania errabunda," according to a well-known medico-psychologist, is characteristic of the "dégeneré" in the social order, the "tramp," for instance, so familiar to rural life, illustrating in the individual what in racial or tribal grouping appears as the gipsy. Apart from the prominence lately given to three or more dramatic disappearances in the Italian press, and to at least as many in that of transalpine countries, the "wandering disease" is a subject of special interest to the profession in these days when neurasthenia, in its protean forms, is apt to culminate in psychoses hitherto but little encountered, associated as two of the Italian cases undoubtedly are with the artistic temperament and the emotional, not to say sensuous, life!

*"Physiognomic Diagnosis."*

Among the clinical teachers and consultants of the mid-Victorian era in Great Britain Professor Laycock of Edinburgh used to insist on the value of this as a guide to the nature, as well as the presence and prognosis, of disease. Set forth with much ingenuity and illustrative detail in his work on "Mind and Brain," his doctrine found acceptance abroad, particularly in Italy, where it numbered its most authoritative exponents in physicians who made a special study of infantile ailments. Physiognomic diagnosis indeed they maintained to be an indispensable resource in the case of inarticulate little subjects who could not explain or indicate their feelings, and the experience acquired in the children's ward served them in good stead even in the case of the adult or the elderly when oral utterance or explanation was difficult or defective. An interesting illustration of this was lately witnessed, according to report, in the case of Professor Mya, the leading Italian consultant in diseases of infancy, with which he combined a large experience in practice among the grown-up. He had himself been struggling against the infective malady prevalent in Florence, and though feeling ill continued to make his professional rounds. When sitting with his family at dinner he suddenly felt a sinking sensation. "Give me the hand-mirror" (*dammi lo specchio*), he said. A moment's glance seemed to satisfy him as to everything that facial expression could reveal. He recognised the first indications of the "facies Hippocratica" and had no longer the "will to live" any more than the power. He soon passed away knowing that his hour had come.

March 4th.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*Vital Statistics in New York City.*

THE New York records for 1910 show a decrease in the annual deaths of 13,066 persons, due to the increased sanitary control over disease. Tuberculosis claimed 1840 fewer victims, pneumonia 2203, and nephritis 1317. The lives of over 6000 infants were saved and of 6600 persons between the ages of 5 and 65 years; of those over 65 a little less than 500. A somewhat increased list of deaths from appendicitis is believed to show merely improved diagnosis, many such cases having been formerly attributed to acute indigestion. The Health Department has determined to prosecute physicians and midwives neglecting to register births; 35 cases have already been settled, mainly out of court, and some 50 are pending. During the month of January last there were registered 12,057 births, an increase over January, 1910, of 457. An amusing disclosure in connexion with births is the estimate of a telephone company that each birth causes on an average 300 telephone calls.

*Cocaine and its Derivatives and Morphine.*

The Health Department of New York has found it necessary to increase the stringency of its regulation of the sale of cocaine as well as of opium. Its latest ruling demands that:—

No cocaine or salts of cocaine, eucaine, stovaine, alpha or beta eucaine, either alone or in combination, or any substance under any other name giving a similar chemical test of cocaine, and no opium or official preparations of opium, and no morphine or salts of morphine, or the derivatives of either or any of them, shall be sold at retail by any person in the city of New York except upon the written prescription of a physician duly authorised to practise as such, or other person duly authorised by law to practise medicine and administer drugs or perform surgery with the use of instruments. Any such prescription shall not be refilled.

Exceptions are made in favour of official preparations of which the maximum dose is not greater than one-half grain of opium or its equivalent, and of liniments plainly marked as poisonous.

*Annual Report of the New York State Commission of Prisons.*

The annual report of the New York State Commission of Prisons has been recently issued. The report states that the prisons of New York State are greatly overcrowded. With a cell capacity for 1200, an average of 1850 men are confined in the old prison of Sing Sing on the Hudson. Some of these are housed in one of the chapels and in the loft of one of the workshops. Moreover, the cells themselves are small and insanitary.

*Milk Depôts in New York.*

New York is preparing to open 12 depôts for the free distribution of pure milk under the auspices of the Health Department. It is estimated that the cost will be about £8000 annually. They will dispense milk exclusively for the use of infants, thus avoiding conflict with two large private charities which distribute milk to all properly accredited applicants, and will pasteurise at a nominal charge all milk that is brought to them by those who prefer to avoid the appearance of mendicancy by purchasing their own supplies, but who cannot afford to install the apparatus for efficient sterilisation.

*An Attack on St. Luke's Hospital, New York.*

St. Luke's Hospital, a wealthy and influential institution, was recently the subject of a sensational attack by a man whose mother died in the institution; he brought charges of neglect, cruelty, favouritism, of forcing charity patients to do menial work, and others of similar tenour. The immense number of persons, quacks, followers of the "New Thought," "Christian Scientists," patent medicine manufacturers, and the like, who have grudges against the medical profession, quickly seized upon this incident to flood the papers with corroborative stories. As might have been expected, the subsequent investigation completely disproved the charges, but it furthermore brought out the fact that probably nowhere in the world is there such friendly coddling of patients as in St. Luke's. The staff is numerically very strong, which allows unusual time to be given to the needs, real or fancied, of each patient, and the nurses are recruited with discrimination. As an example of the generosity, if not the wisdom, of the institution it was learned that there is an unlimited supply of milk to be had night and day to which patients may help themselves. In the particular case concerning which the charges were brought it was found that the patient was irrational and that her hallucinations were quite misunderstood by the relatives.

*Dinner to Dr. Stephen Smith.*

Dr. Stephen Smith, the Nestor of the medical profession of New York, was entertained at dinner by the medical profession at the Plaza Hotel on the occasion of his eighty-eighth birthday on Feb. 18th. About two hundred medical men were present. Dr. Smith, in responding for himself, dealt chiefly with his reminiscences. He proposed a detailed State policy with regard to defectives. He would put criminals into training-schools. A large class of the insane—such as suffer from disturbance, not from disease, of the brain centres—he would place under skilled care. The others might be made useful by colonising large areas of farm lands with diversified industries. Dr. Smith has had a distinguished public career. He was one of the first heads of the New York Board of Health, and was also at the head of the New York department of charities.

*Death of Edward Gamaliel Janeway, M.D., LL.D.*

Dr. E. M. Janeway, one of the best known physicians of America, died at Summit, New Jersey, on Feb. 10th. He was born in August, 1841. Since 1864 he had practised continuously in New York city. He held many hospital appointments and had been professor of pathological anatomy, professor of medicine, and dean of the medical college of Bellevue Hospital. He was for many years Health Commissioner of New York city. Dr. Janeway was a quiet reserved man, not a prolific writer or speaker, but one who commanded the

entire confidence of the profession as a clinician, and was particularly noted for his skill in diagnosis.

*Investigations in Regard to Poliomyelitis.*

The Rochester, N.Y., Academy of Medicine has adopted resolutions asking the State Department of Health to make investigations into epidemic poliomyelitis, and petitioning the legislature to make an appropriation for the suppression of the disease. In the resolutions it is stated that "the attention of the State Commissioner of Health is called to the facts that poliomyelitis is prevalent in Canada along the Niagara frontier, and that there is constant intercourse during the summer between Canada and New York State, and that therefore interchange of information and an agreement as to quarantine regarding poliomyelitis between Ontario and New York State would be most desirable."[1]

*Philadelphia Census of Defective Children.*

A census of defective children in the schools of Philadelphia shows that there are therein 11,543 mentally defective pupils. Three kinds of deficiencies are mentioned in the report: (1) the "physically deficient," embracing the blind, deaf, speech defective, crippled, and epileptics; (2) the "mentally deficient," backward, feeble-minded, and imbecile; and (3) the "morally deficient," truants and incorrigibles. The first class, those who require instruction by special methods in small classes, number 1857 boys and 1063 girls; dull children who would be benefited by special instruction number 3362 boys and 3241 girls. Class 2. Feeble-minded children, who should really be in an institution, number 287 boys and 155 girls. Class 3. Truant, incorrigible, and vicious children of defective mentality, who should be segregated in special schools, 387 boys and 607 girls; truant, incorrigible, and vicious children of fair mentality, who should be segregated in special schools, 1082 boys and 40 girls.

*Bill Forbidding the Marriage of the Unfit.*

It is stated that a Bill has been introduced into the Pennsylvania Legislature forbidding the marriage of imbeciles, epileptics, and persons of unsound mind, of male paupers, of persons suffering from transmissible disease, or under the influence of alcohol or narcotic drugs. The definition of what is a transmissible disease may give some trouble.

*Singular Case of Aphasia.*

At the time of the tremendous dynamite explosion of Feb. 1st at Jersey City, immediately opposite New York, where the shock was plainly felt and thousands of square feet of window-glass were shattered, a young female stenographer was riding on a New York tram-car and sustained a shock which deprived her of speech and memory. She was found in this condition two days later, wandering about the streets of Poughkeepsie, 100 miles from New York, quite unable to give an account of herself. She was taken to the Hudson River State Hospital at Poughkeepsie and there hypnotised. On recovering consciousness the girl was able to recall everything up to the time of the shock, but nothing subsequent thereto.

*Straus Milk Plant in Washington.*

On Feb. 6th the United States Senate passed a Bill authorising the Secretary of the Treasury to accept the milk depôt and laboratory maintained until now in Washington by Mr. Nathan Straus. The depôt will be worked by the Public Health and Marine Hospital Service.

*Responsibility of a Municipality for Disease.*

The Supreme Court of Minnesota has recently decided that if the plaintiffs in a recent suit against the town of Mankato in that State can prove their plea, that deaths from typhoid fever were caused by the negligence of the town authorities, they may recover damages. This decision will probably be of wide-reaching importance. Hitherto such cases have been dismissed as "acts of God": now the owners of town water-supplies, municipal or private, will be stirred into unprecedented activity. There have been in various parts of the country disquieting instances of stifled inquiry into the causes of similar epidemics, particularly where private capital was involved.

*Reported Cure of Lock-jaw.*

An uncorroborated report comes from Minnesota of the cure of a case of tetanus by the intraspinal injection of a solution of Epsom salts. The case is said to have followed the loss of the patient's finger in a corn-shredder.

Feb. 28th.

[1] THE LANCET, March 4th, 1911, p. 626.

# NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

*The Malaria Committee of Bengal Presidency.*

A RESOLUTION by the Government of Bengal, sanctioning the appointment of a Provincial Malaria Committee, has been promulgated:

With a view to the systematic examination of problems connected with the prevalence of malaria, the Government of India have appointed a Central Scientific Committee, in consultation with whom the provincial organisations should in future work, and the recommendation on this point of the conference which assembled at Simla in October, 1909, to consider the whole subject of the prevention of malaria is quoted below:—"The Conference having learnt that the Government of India will appoint a Central Scientific Committee to direct and coördinate investigations, and that they will also appoint at the request of local governments, or on the recommendation of the Central Committee, officers to carry out investigations, recommends that a local organisation to work in consultation with this Central Committee be constituted in each province. The nature of each organisation should be settled by the local government and may take the form of the sanitary board. A conference consisting of the members of the Central Committee and a delegate from such local organisation should be held annually at such place as may be convenient for the purpose of reviewing the work done and preparing a programme of future work."

With the approval of the Government of India, and with the consent of the gentlemen named below, the Lieutenant-Governor in Council has decided to appoint a Provincial Malaria Committee in Bengal, which shall comprise the following members:—The Members of the Executive Council of the Government of Bengal in the Municipal (Medical) Department, President; the Secretary to the Local Government in the Public Works Department (Roads and Buildings Branch); the Secretary to the Local Government in the Public Works Department (Irrigation Branch); Major L. Rogers, I.M.S., M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng., Professor of Pathology, Medical College, Calcutta; Assistant Surgeon Upendra Nath Brahmachari, M.A., M.D., Ph.D. Calcutta, Teacher of Medicine, Campbell Medical School, Calcutta; Mr. Nil Ratan Sircar, M.A., M.D. Calcutta; and the Sanitary Commissioner Bengal, secretary. Questions relating to the prevention of malaria frequently present problems which have both a medical and an engineering aspect, and expert knowledge in either branch will be represented upon the committee thus constituted. The superior staff, which will be placed for the time being at the disposal of the committee, will comprise one deputy sanitary commissioner and one assistant surgeon. These officers will work under the direction of the committee, whose duty it will be, subject to the control of the local government, to supervise the direction and method of the inquiries to be undertaken, to scrutinise the results ascertained from time to time, and to assist with their advice all action taken to cope with the problem of malaria in Bengal. In other administrative matters connected with the subject, such as the distribution of quinine, the committee will be consulted by the local government as occasion may arise, while the sanitary board will be directed to seek their assistance in the consideration of the bearing upon the question of malaria prevention of any drainage projects which may be brought before them. A delegate from the provincial committee will attend annually at the Central Conference which the Government of India will convene. By the agency of the committee, the Lieutenant-Governor in Council trusts that the inquiries connected with this most important question will be conducted upon more systematic lines than has hitherto been the case, while as the result of their labours it is hoped that knowledge may in time be accumulated which will permit of the adoption of remedial measures calculated to effect a substantial diminution in the mortality and suffering at present caused by malaria in this province.

*The St John Ambulance Association.*

Colonel L. E. Anderson, R.A.M.C., Principal Medical Officer, Allahabad and Fyzabad Brigades, has kindly consented to act as moderator at the competitions for the Indian Railways and Indian Volunteers' challenge shields and the St. John Ambulance Brigade Challenge Cup, to be held on Feb. 24th and 25th in the Exhibition Buildings at Allahabad.

*Vital Statistics of the United Provinces for 1909.*

As was to be expected in a healthy year following a period in which malaria prevailed in severe epidemic form, both births and deaths decreased in number, the total births being

102,772, as against 108,360, and deaths 123,463, as against 148,447. The excess of deaths over births, which has been a marked feature of the United Provinces statistics for some years, continued, though it amounted to only 6·68 per 1000 of the population. Special reference is not generally made by commissioners in their divisional reviews to the infantile mortality in the towns. The Sanitary Commissioner states in his report that the provincial mortality in municipalities declined from 352·93 in the year 1908 to 281·68. Forty-two municipalities returned death-rates above the municipal average, Balrampur taking the lead with a rate of 463·51. Other conspicuous figures were Sitapur (457·83), Tilhar (410·17), Khairabad (393·60), and Farrukhabad (379·94).

*Appointment of Health Officer of the Bombay Municipality.*

The municipal corporation of Bombay has reappointed Dr. J. A. Turner to be executive health officer of the Bombay municipality for a further term of five years from Feb. 1st, 1911. The appointment was confirmed by the Governor of Bombay in Council, who endorsed the high praise that Dr. Turner's work has earned in all quarters, "noting with satisfaction the immense improvement in the sanitation of the city that has been effected during his term of office."

Feb. 11th.

## NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

*Plague in North China.*

SINCE my last report the epidemic has continued to rage up to Feb. 3rd, causing in Harbin alone an average of 200 deaths per diem. After this it dropped to 120, and has not risen during the past week, while every day sees a slight diminution. At the same time involution forms of B. pestis have been observed in the blood. It has been the rule rather than the exception to find the bacillus in the blood of pneumonic cases. After the epidemic had been almost stamped out at Tsitsihar (north-east of Harbin) it recurred among a regiment of Chinese soldiers sent there. Coming southward it has been found at every station on the line and in the neighbouring villages. At Changchun it has been particularly virulent. The official efforts were not strong enough to prevent the people concealing corpses in their houses with lamentable results, but the work is now better organised, being under a prefect who is also a medical man (Dr. Huang). At Mukden it still persists without diminution, and there is no town of any importance (except the port of Niuchwang) which has escaped. Roughly 80 per cent. of the cases are pneumonic, 15 per cent. septicæmic, and 5 per cent. intestinal. In the province of Shantung many villages have been affected, no doubt due to the returned labourers. A most curious feature has been the comparative freedom of the huge overcrowded cities of Peking, 750,000 inhabitants, and Tientsin, with over a million. In the former we have as yet had not more than 13 authentic cases, and in Tientsin there have been about 40. This freedom cannot be put down to sanitary measures, which are by no means ideal, though the Chinese authorities are gradually organising sanitary and preventive measures. Plague has been at the doors of these two cities thrice in the past ten years and has hitherto left them unharmed.

*Inoculation.*

A point of much importance that has been raised is the efficacy of Haffkine's vaccine prepared from bubonic strains as compared with that from local pneumonic bacilli. Hitherto all the vaccination has been done from bubonic strains, and notwithstanding the doubts expressed the evidence is all in favour of this course. Among the Russian staff the following deaths occurred: Two male doctors, not inoculated; one female doctor, partially inoculated, died two days after; one student, not inoculated; four ambulance men, partially inoculated; four sanitary men, not inoculated. Partial inoculation means, according to the Russian method, only half a dose the first time and a full dose the week later. One British doctor (Dr. A. F. Jackson) died 12 days after inoculation. He had become infected during the negative phase, the period of greatest infectivity, and was hard at work all the time among gangs of infected coolies. One Chinese (foreign-trained) doctor died after inoculation, but inquiry showed he had not had any reaction whatever, and it was thought probable from inquiries made that the operator had not shaken up the bottle. One Chinese (foreign-trained) medical student died seven days after inoculation. 1200 cubic centimetres of Yersin's serum prolonged the life of a Russian student to the seventh day of illness, and 140 cubic centimetres prolonged the life of a Russian sanitary man to the fourth day. With regard to the negative phase of inoculation, Dr. Haffkine (nephew of the Indian bacteriologist) confirmed the observations of Dr. J. G. Gibb, and has found at Harbin by clinical and laboratory evidence, as well as by Wassermann reaction, that it lasts five to seven days. He advises no one to come in contact with plague cases for ten days after inoculation. Out of 130 of the Russian sanitary staff of 390 who were successfully inoculated and passed the negative stage, though living all day among highly infectious cases, *not one* has developed plague.

*Clinical Symptoms*

Only one case of bubonic plague has been noted—a Russian sanitary man who had a submaxillary bubo which was followed by secondary pneumonia and death. All the other cases have been primary plague pneumonia, septicæmia, and an intestinal form. Often blood-stained sputum is the first symptom, the patient still declaring himself quite well. Examination generally shows rapid pulse and fever. Often a man can walk to hospital and be dead a few hours after arrival. In other cases feelings of illness with the typical weakness and giddiness come first, and are usually followed later, but by no means always, by bloody expectoration. Intestinal symptoms with abdominal pain and diarrhœa occur, but I have not as yet heard whether there is also blood infection. A man can often be diagnosed in the street as plague-stricken by his bloated face and suffused conjunctivæ. Often in the quarantine hospitals a "contact" has normal pulse and temperature one day with no sign of illness and is dead next day. On the other hand, quite a number of cases are set aside because of fever and fast pulse which turn out to be nothing. The doctors report that every day they feel more and more the difficulty of knowing whether a patient has plague or not, till he or she is within a day of death. Dr. Mesny, the French doctor who died, met his death while examining, uninoculated and unmasked, a pneumonia case who suddenly coughed in his face.

*Medical Staff.*

Dr. J. G. Gibb and Dr. Wu (Gnoh Lean Tuck) have been through the epidemic at Harbin from its early stage. I am indebted to the former for much of the clinical data given. Dr. W. H. Graham Aspland and Dr. J. M. Stenhouse have also been at Harbin doing heroic work amid very infectious surroundings. They have been assisted by Chinese doctors and students. At Changchun Dr. C. W. Young and Dr. G. P. Gordon are in charge; there are also Japanese doctors. Dr. Morikawa and his wife (Japanese) have both died here while on plague duty. At Mukden, Mr. D. Christie and Mr. A. R. Young, of the Scotch Presbyterian Mission, are directing plague work in conjunction with the Chinese authorities. The death of Dr. Jackson is much deplored. A trainload of 450 coolies southward bound was returned to Mukden as plague had broken out among them and deaths occurred. It was in the hard work involved in separating out actual cases and suspects from the other contacts that Dr. Jackson met his death. It remains to be said that all the medical reports made by foreign doctors in Manchuria testify to the way the Chinese officials are *now* backing up the measures advised and the active way they have organised and are carrying out antiplague work.

*Burial of the Dead.*

The greatest difficulty has been experienced in disposing of the dead. 150 grave-diggers took five days to dig a pit large enough to hold 100 coffins, the ground being frozen deeply. The dead, coffined and uncoffined, accumulated in huge stacks, but the local officials absolutely refused to cremate as advised by the foreign doctors. It was not until permission had at last been obtained from the Throne that the dead could be burned. Pits 15 feet deep and 25 feet wide were dug and fires of wood made in the centre of each, then the bodies were soaked in paraffin and poured in. Those in coffins were stacked, paraffin poured over them, and set alight. This was the procedure adopted in Harbin, and has been followed in other places where the dead have been too numerous to bury.

Feb. 12th

# Obituary.

## ARTHUR FRAME JACKSON, B.A., M.B., B.C. CANTAB., D.T.M. LIVERP.

Dr. A. F. Jackson, whose sad death in China from plague has already been chronicled in our columns, was born at Oxton 26 years ago and educated at Merchant Taylors' School, Crosby, Liverpool, and at the University of Cambridge. At the latter place he had a successful career both as a scholar and an athlete and afterwards studied medicine at Liverpool, becoming house surgeon and house physician at the Royal Infirmary there. At the end of September last he went to China as a medical missionary, taking up his appointment as a medical missionary on the staff of the large hospital at Mukden, Manchuria, where Mr. D. Christie carries on so much work on behalf of the Scotch Presbyterian Mission. "He has died," says our correspondent on the spot, "on the very threshold of a life's work which was full of promise. Dr. Jackson was an exceedingly fine young man. When the plague epidemic broke out at Mukden the city was divided into sections and an organised system of dealing with plague cases was instituted. Dr. Jackson at once volunteered to take charge of the seventh section, which included the railway and in which 80 per cent. of the total Mukden deaths have occurred. The inns here were heavily crowded with coolies on their way from the northern infected districts, and naturally the heaviest work fell to him. Early and late he was busy, and that in a temperature 20° below zero. Many a plague-stricken coolie received the strong support of Jackson's arm when being removed to hospital, and many died the easier for his having arranged a pillow for their heads. On Jan. 23rd he was in perfect health and high spirits, as by his own efforts he had established the isolation hospital. On the morning of the 24th he seemed drowsy and was persuaded to return to bed, which he did with reluctance. Mr. Christie was called and soon detected the early symptoms of plague. Along with Mr. A. R. Young (Mr. Christie's chief assistant) injections of Yersin's serum were given and everything that medical science could do was done for him, but on Jan. 25th he died. His short period of work in China was full of usefulness, and the speech made at his burial service by the able Viceroy Hsi Liang, which is appended, has made a great impression not only among foreign residents here but also among the Chinese officials."

The following is a translation of the speech delivered by Viceroy Hsi Liang at Dr. Jackson's memorial service on Feb. 1st:—

We have shown ourselves unworthy of the trust laid upon us by our Emperor; we have allowed a dire pestilence to overrun the sacred capital.

His Majesty the King of Great Britain shows sympathy with every country when calamity overtakes them; his subject, Dr. Jackson, moved by his Sovereign's spirit and with the heart of Christ, who died to save the world, responded nobly when we asked him to help our country in its time of need.

He went forth to help us in our fight; daily where the pest lay thickest, midst the groans of the dying he struggled to cure the stricken, to find medicine to stay the evil.

Worn by his efforts, the pest seized upon him and took him from us, long ere his time. Our sorrow is beyond all measure, our grief too deep for words.

Dr. Jackson was a young man of high education and great natural ability. He came to Manchuria with the intention of spreading medical knowledge, and thus conveying untold blessings upon the Eastern peoples. In pursuit of his ideal he was cut down. The Presbyterian Mission have lost a recruit of great promise, the Chinese Government a man who gave his life in his desire to help them.

Oh, spirit of Dr. Jackson, we pray you intercede for the 20,000,000 people in Manchuria, and ask the Lord of Heaven to take away this pest so we may once more lay our heads in peace upon our pillows.

In life you were brave, now you are a spirit. Noble spirit, who sacrificed your life for us, help us still, and look down in kindness upon us all.

THE report of the committee of management of the City of London and East London Dispensary, which supplies medical and surgical advice and medicines to the necessitous poor gratuitously, and to other poor persons for small weekly payments, states that the number of attendances during the year was 111,262, of which 5073 were free, showing an increase of 2135 over those of the year 1909. The receipts from the subscribing members were £2654 14*s.* 6*d.*, being £53 13*s.* 6*d.* in excess of those for the previous year, and the donations and subscriptions amounted to £100 19*s.*

# Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Cagliari:* Dr. Francesco Putzu has been recognised as *privat-docent* of External Pathology.—*Erlangen:* The Chair of Laryngology having been declined by the Giessen Professor, has been offered to Professor Lange of Greifswald. *Genoa:* Dr. Enzo Bizzozero has been recognised as *privat-docent* of Dermatology.—*Giessen:* As Professor von Eicken has decided to remain at Giessen instead of accepting the offer of a chair at Erlangen, the Hessian Government has decided to build a new clinic for throat and ear diseases.—*Göttingen:* Dr. Walter Fischer has been recognised as *privat-docent* of Pathological Anatomy.—*Greifswald:* The title of Professor has been conferred upon Dr. Guido Fischer, the *docent* of dentistry, who is migrating to Marburg. Dr. Friedrich Hohmeier has been recognised as *privat-docent* of Surgery.—*Kiel:* Dr. F. Klein, *privat-docent* of physiological chemistry, has been appointed Extraordinary Professor.—*Königsberg:* Dr. M. Kirschner has been recognised as *privat-docent* of Surgery, and Dr. K. H. Sattler as *privat-docent* of Ophthalmology.—*Modena:* Dr. Giuseppe Frattin of Padua has been recognised as *privat-docent* of External Pathology.—*Naples:* Dr. Francesco Franceschi has been recognised as *privat-docent* of Neurology and Psychiatry, and Dr. Giuseppe Procopio as *privat-docent* of Midwifery and Gynæcology.—*Padua:* Dr. Italo Simon of Parma has been recognised as *privat-docent* of Materia Medica and Experimental Pharmacology.—*Palermo:* Dr. Emerico Luna has been recognised as *privat-docent* of Anatomy.—*Parma:* Dr. Giacomo Zaccarini has been recognised as *privat-docent* of External Pathology.—*Pavia:* Dr. Livio Losio has been recognised as *privat-docent* of Operative Medicine.—*Philadelphia (Jefferson Medical College):* Dr. John Funke has been appointed Lecturer on Diseases of the Heart.—*Pisa:* Dr. Luigi De Gaetani of Messina has been recognised as *privat-docent* of Anatomy.—*Rome:* Dr. Italo Giuseppe Roses has been recognised as *privat-docent* of Internal Pathology, Dr. Francesco Chidichino as *privat-docent* of Midwifery and Gynæcology, Dr. Domenico Tanturi as *privat-docent* of Otology and Laryngology, and Dr. Cesare Serono as *privat-docent* of Medical Chemistry.—*St. Louis (Washington University):* Dr. David L. Edsall, of the University of Pennsylvania, has been appointed Professor of Preventive Medicine.—*St. Petersburg (Women's Medical Institute):* Dr. V. Rokitski has been recognised as *privat-docent* of Surgery.—*Strasburg:* Dr. Uhlenhuth of Berlin has been appointed Director of the Hygienic Institute.—*Turin:* Dr. Gaetano Samperi has been recognised as *privat-docent* of Ophthalmology, and Dr. Alessandro Vaccari as *privat-docent* of Midwifery and Gynæcology.

LITERARY INTELLIGENCE. — The Cambridge University Press has made arrangements for the appearance of a comprehensive English botany, or "Flora," by Dr. C. E. Moss, the curator of the Cambridge University Herbarium, the author receiving assistance from specialists in several departments of the work. The descriptions of the plants will be new, and taken from living specimens, although older descriptions, as well as herbarium specimens, will be consulted. Engler's system of classification will, generally speaking, be followed; and the first volume to appear will deal with the earlier Dicotyledonous families from the Salicaceæ to the Chenopodiaceæ. The work will be illustrated by pen-and-ink drawings by Mr. E. W. Hunnybun, made from living specimens, each plant being drawn natural size; and in the case of critical species and varieties the name of each specimen is vouched for by some competent authority. In addition to these drawings each volume will contain numerous photographs of plants in their natural habitats, and maps showing the distribution of the more interesting genera and species. The work will probably be completed in ten volumes.—Messrs. Longmans, Green, and Co. are about to publish the Life and Letters of Sir John Hall, M.D., K.C.B., the principal medical officer of the Crimea during the great campaign. This is a biography of a distinguished Englishman written by a well-known Hindu, Mr. S. M. Mitra. Rear-Admiral Sir Massie Blomfield, who served

throughout the Crimean campaign, has written an introduction. The book deals with Sir John Hall's career in Flanders, the West Indies, Spain, South Africa (including the Kaffir War of 1852), India, and the Crimean campaign. It will contain several illustrations, including one of the wounded at Waterloo, Dr. Hall being then a hospital assistant.

UNIVERSITY OF OXFORD.—Mr. Edward Treacher Collins, F.R.C.S., has been appointed an examiner for the Diploma in Ophthalmology for 1911 and 1912.—Mr. R. C. Wingfield has obtained the degree of B.M., B.Ch.—The Board of Faculty of Medicine gives notice that in accordance with the provisions of the statute approved by Convocation on Nov. 15th, 1910, it has added the following clause to its regulations :—

> No candidate, unless he be already a registered medical practitioner, shall be admitted to the examination in medicine, surgery, and midwifery until a period of at least 22 months shall have elapsed from the date of his passing the first examination for those degrees.

THE Nottingham and Notts Association for the Prevention of Consumption has organised a Tuberculosis Exhibition to be held in the Mechanics' Hall, Nottingham, which is to be opened on Monday, March 13th, by the Duke of Devonshire. The exhibits of the National Association for the Prevention of Consumption and the Women's National Health Association of Ireland, together with many items of local interest, will be on view. Dr. Philip Boobbyer, Dr. Marcus S. Paterson, Dr. R. W. Philip, Dr. J. D. Slight, Dr. Jane Walker, Dr. Ralph Williams, and Professor G. Sims Woodhead have consented to give lectures in connexion with the exhibition during the week.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—The annual meeting of governors and subscribers of Queen Charlotte's Hospital was held on Feb. 28th, Mr. Frederick W. Hunt (Vice-President) being in the chair. During the year 1775 women had been admitted to the wards of the hospital, and 2449 others had been attended and nursed in their own homes. The report referred to the very low rate of mortality—namely, 3·3 per 1000 in the case of the in-patients and 0·4 per 1000 in the case of the out-patients. A grant of £1500 had been received from King Edward's Hospital Fund, £500 of which were towards improvements recently carried out, including the installation of electric light and electric sterilisers. The chairman stated that the income had showed some improvement over recent years, and the committee had been able to clear off the deficit of £3287 incurred during the years 1907, 1908, and 1909. There was, however, still a debt of £2130 on the nurses' home which the committee was anxious to pay off. The work done by the hospital in training medical students, midwives, and monthly nurses steadily increased, and the applications received at the hospital for maternity nurses for private cases showed that the establishment of the private nursing staff was greatly appreciated by the public and the medical profession.

SEVENTH INTERNATIONAL CONGRESS AGAINST TUBERCULOSIS, ROME.—As we announced in THE LANCET of Sept. 10th last (p. 844) this congress will be held in Rome from Sept. 24th to 30th, 1911. The president of the congress is Professor Guido Baccelli and the secretary-general Professor Vittorio Ascoli, whose address is 36, Via in Lucina, Rome. The last International Congress against] Tuberculosis, at Washington in 1908, chose Rome as the meeting-place of the Seventh Congress. The work of the congress will be divided into three main sections as follows: (*a*) Etiology and Epidemiology of Tuberculosis; (*b*) Pathology and Therapeutics (Medical and Surgical) of Tuberculosis; (*c*) Social Defence against Tuberculosis. Those who wish to take part in the congress are requested to fill up a form which can be obtained on application, stating therein the section for which they desire to enter their name and enclosing the form together with a visiting card and a fee of 25 francs for a member's ticket. Members' relatives can obtain tickets at 10 francs each. The payment is requested to be made by international postal order payable to the treasurer of the Congress, and addressed to the secretary's office. The members' tickets give their holders the right to obtain reductions in railway fares and admission to various social gatherings. The Congress will be opened in the large amphitheatre of the Augusteo in the presence of the King and Queen of Italy. The meetings of the Congress will be held in the Castle of S. Angelo.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—Sir Arthur Chance has been appointed as the representative of the College on the General Medical Council.

A DINNER of the Irish Medical Schools and Graduates' Association will be held on Thursday, next, March 16th, at 7.15 P.M., in the Indian Room, Hotel Cecil, Strand, W.C. The Duke of Abercorn, Sir Thomas Barlow, and Sir Henry Morris will be present.

LONDON OPHTHALMOLOGICAL EXHIBITION.—The committee of the London Ophthalmological Exhibition and Conference invite attendance at an optical and electromedical exhibition held to-day and to-morrow (Friday and Saturday) at the rooms of the Medical Society, 11, Chandos-street, Cavendish-square, W. The exhibition will be open from noon to 10 P.M. each day.

DONATIONS AND BEQUESTS.—Mr. Richard Murray of Harrogate has given 150 acres of land, £10,000 in cash, and £20,000 in investments for the building and endowment of a hospital in memory of King Edward VII.—The late Mrs. Mary Ann Fitzherbert Fraser bequeathed £5000 to the Seamen's Hospital Society.—Mrs. Jackson, mother of Dr. A. F. Jackson, who died from plague at Mukden on Jan. 26th, has presented to the Medical College of that city the £1000 received from the Chinese Viceroy.—Lord Stanmore has given £500 towards an endowment fund for the Royal Victoria Nursing Home at Ascot.—Mr. W. Graham Vivian, J.P., Clyne Castle, has subscribed £1000 to the Swansea Hospital extension scheme.—The late Rev. H. E. H. Mairis of Bristol has left, among other charitable bequests, £1000 each to the Cancer Hospital, Brompton, the Deaf and Dumb Asylum, Cannon-street, and the Hospital for Sick Children, Great Ormond-street; £500 each to the Home for Blind Children, Kilburn Priory, the Royal Hospital for Incurables, and the Brompton Hospital for Consumption; £100 each to the Throat Hospital, Golden-square, London, the Bristol General Hospital, and the Bristol Royal Infirmary.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*The Nurses' Registration Bill.*

THE text of the Nurses' Registration Bill which was recently introduced into the House of Commons by Mr. MUNRO FERGUSON, has been issued. Its proposals are in the main similar to those which found a place in last year's Bill (*vide* THE LANCET, vol. i., 1910, pp. 831-832). It entrusts the duty of compiling a register for which only duly qualified nurses are eligible, to a General Nursing Council, and it gives power to the council to remove from the Register persons found guilty of conduct disgraceful in a professional respect.

In the first place the Bill provides for setting up "the General Council for the Registration of Nurses in the United Kingdom." The composition of this Council has given considerable trouble to the framers of the Bill in past sessions. The proposed clause for dealing with this matter is similar to that of last year's Bill, but as there is no register of nurses in existence it would be impossible to elect direct representatives of registered nurses to the first council, and the Bill provides that on the first constitution of the council in place of the direct representatives of registered nurses there should be 14 persons appointed for the most part by various associations interested in nursing. When the Register is sufficiently advanced to admit of an election of direct representatives, the provisional council will give way to the fully constituted one. The term of office is to be five years.

A correct register of nurses, to be called "the Nurses Register," is to be kept in accordance with the provisions of the Bill and the orders and regulations of the Council. Clause 10 lays down the duties and powers of the Council in language similar to that of the previous Bill.

Three clauses lay down the conditions under which admittance may be gained to the register (1) by existing nurses; (2) by nurses who shall become qualified at a future date; and (3) by nurses trained in the colonies. The conditions also correspond to those of the previous Bill.

Reciprocal recognition of the qualifications of colonial-trained nurses is given by Clause 14.

When the Nursing Council refuses to recognise any hospital or institution as an approved training school for nurses, an appeal lies to the Privy Council, whose decision shall be binding on the Nursing Council.

By Clause 15 the Nurses Register shall comprise—(1) a general register of women nurses containing the names of women who have been registered; (2) a supplementary register of male nurses; and (3) a supplementary register of asylum-trained nurses to be called the Mental Nurses Register. Clause 18 provides that unqualified persons holding themselves out as registered nurses, registered male nurses, or registered mental nurses are liable to prosecution, and on summary conviction to a fine not exceeding £10. There are also penalties for obtaining a certificate by false representation. It is noticeable that an appeal from the decision of the General Nursing Council lies to the High Court (or to the Court of Session in Scotland) in cases where the name of a nurse has been removed from the Register.

By Clause 23 it is laid down that nothing contained in the Bill shall be considered as conferring any authority to practise medicine or to undertake the treatment or cure of disease. This provision has been inserted in the Bill at the request of members of the medical profession, although the framers of the Bill contended that it had no more effect than merely to declare the existing law.

*Industrial Poisoning.*

The preliminary tables of cases of industrial poisoning, fatal and non-fatal accidents, and dangerous occurrences in factories, workshops, &c., during the year 1910 have been published. The figures, however, are subject to correction. The total number of cases of industrial poisoning for the year was 573, of which 48 had a fatal termination. This compares with 625 cases and 42 deaths in 1909. The figures for 1910 are made up as follows:—Lead poisoning, 505 (with 38 deaths); mercury poisoning, 10 (with 1 death); arsenic poisoning, 7; and anthrax 51 (with 9 deaths). No cases of phosphorus poisoning were reported in 1910.

*University of Wales Bill.*

Sir DAVID BRYNMOR JONES on Thursday, March 2nd, introduced a Bill in the House of Commons "to define and enlarge the rights of graduates in medicine of the University of Wales." The Bill, which is supported by Lord NINIAN CRICHTON-STUART, Sir HERBERT ROBERTS, and Mr. ORMSBY-GORE, was read a first time.

## HOUSE OF COMMONS.

WEDNESDAY, MARCH 1ST.

*The Dangers of Flannelette.*

Mr. THEODORE TAYLOR asked the Secretary of State for the Home Department whether he was aware that in England and Wales 700 persons were annually burnt to death owing to flannelette garments catching fire; that during the months of November, December, and January last over 400 persons were burnt to death in consequence of their clothing catching fire; and that it was possible to treat flannelette in such a way as to render it permanently resistant to flame; and whether the Government contemplated the introduction of any legislation as a result of the evidence presented to the coroners' committee on this question.—Mr. CHURCHILL replied: The figures referred to by my honourable friend have not been brought to my notice and I do not know on what authority they are given. From the Registrar-General's last returns, which are based on coroners' certificates, it would appear that in 1909 the number of deaths from burning clothes was 689, but only in 73 cases is it stated that the clothing was made of flannelette. As regards the possibility of treating flannelette in such a way as to render it permanently resistant to flame, I must refer my honourable friend to the findings of the Coroners' Committee on the point. I fear there is no prospect of legislation on this question during the present session.

*Phosphates in Flour.*

Mr. LONSDALE asked the Parliamentary Secretary to the Board of Agriculture whether the attention of the department had been called to the fact that, in violation of the Merchandise Marks Act, some millers, who were known to the Local Government Board, resorted to the practice of adding phosphates to the flour milled; and whether it was the intention of the department to put in force the powers which it possessed to check this practice.—Sir EDWARD STRACHEY replied: The Board is in communication with the Local Government Board on this subject. It would be very willing to consider the possibility of instituting proceedings under the Merchandise Marks Act in any specific case which may be brought to its notice.

Mr. LONSDALE also asked the President of the Local Government Board whether he was yet in a position to state the results of the investigation which he had instituted into the practice of adulterating flour by the addition of phosphates, whether made from the bones of animals or lime and sulphuric acid, and the nature of the action which he contemplated to put a stop to this practice.—Mr. BURNS answered: I am expecting to receive at an early date the report of my officer who has been investigating the question of flour. When I have received it the whole question will have my careful consideration.

Mr. LONSDALE: Is the right honourable gentleman aware that I asked a similar question in this House about five months ago, and the reply he gave me on that occasion was in similar terms?—Mr. BURNS: It is perfectly true that when the honourable gentleman asked that question I deemed it advisable to extend the scope of the inquiry. I am glad to say that the whole report will probably be out next month.

Mr. LONSDALE: In the meantime may I assume that people are to go on being poisoned?—Mr. BURNS: No. The honourable Member must not assume that. The interest that is being taken in this question is due to the fact that the press ascertained I had appointed two officers to make this investigation eight months ago.

Mr. LONSDALE: Perhaps the right honourable gentleman will not object to my putting a further question to him in a fortnight.—Mr. BURNS: I think long before a fortnight the report will be laid on the table of the House.

THURSDAY, MARCH 2ND.

*Small-pox in London.*

Mr. LANSBURY asked the President of the Local Government Board, with reference to the outbreak of small-pox in London, whether he would state how many cases had been notified; how many cases had been removed to the Joyce Green Hospital; how many of the cases were employed at the Mile End Infirmary and in what capacity; and what was the age and vaccinal condition of each patient.—Mr. BURNS (by written answer) replied: Since the beginning of the present outbreak 47 persons have been admitted at South Wharf; three of these have been found not to be suffering from small-pox; 43 cases, notified as small-pox, have been sent to Joyce Green; one case remains at the Wharf. Seven of the cases notified were persons employed at the Mile End Infirmary, five as nurses and two as scrubbers. I cannot give the age and vaccinal condition of each patient, as these particulars have not yet been verified; but it is stated that of the 44 patients six are 5 years of age or under, and of these three have not been vaccinated, three were vaccinated in infancy, two have been revaccinated since the onset of the disease. Seven are between 5 and 15 years of age, of whom one has not been vaccinated, five were vaccinated in infancy, one case is doubtful; four cases have been vaccinated since the onset of the disease. Fifteen are between 15 and 30, of whom two have not been vaccinated, 12 were vaccinated in infancy, one is doubtful; eight of these have been revaccinated since the onset of the disease. Sixteen are cases of persons over 30, of whom 14 were vaccinated in infancy; two cases are doubtful; 10 cases have been vaccinated since the onset of the disease. There has been one death, a case of an unvaccinated child of 3 years.

*The Teeth of School Children.*

Mr. CHARLES BATHURST asked the Parliamentary Secretary to the Board of Education whether, as the result of the statement contained in the annual report for 1909 of the chief medical officer of the Board that 20 to 40 per cent. of the 6,000,000 children in the public elementary schools of England and Wales suffered from extensive and injurious decay of the teeth, and in view of the opinion of the medical officers that such condition was largely traceable to the consumption of bread from which the germ and the skins of the grain had been mechanically extracted to ensure whiteness, and of the general ignorance as to food values and the preparation of food for human consumption, any steps were being taken by the Board, by the preparation of a special syllabus of domestic economy instruction or otherwise, to minimise the magnitude of youthful physical degeneracy disclosed by the above report.—Mr. TREVELYAN replied: The Board's medical officers have expressed no opinion as to the relation between the consumption of bread of any particular character and the decay of the teeth.

MONDAY, MARCH 6TH.

*An Alleged Outbreak of Trachoma.*

Mr. RAINY asked the Secretary of State for the Home Department whether his attention had been called to the outbreak of trachoma a the Dover Gordon Boys' Home; whether he was aware that boys were returned to the home by the emigration authorities as not passable by them as emigrants owing to their suffering from this disease; whether he was aware that attempts were made to draft boys under observation into the navy and army unknown to the doctors in charge of the cases; whether he was aware that the segregation ordered by the oculist first called in was stopped and that since that date a new outbreak had occurred; whether he was aware that it was now proposed to dismiss all the boys to their homes without guarantee that they were free from infection of this most contagious disease; and what steps he proposed to take to deal with this situation.—Mr. CHURCHILL replied: I had not heard of this matter until my honourable friend's question appeared on the paper on Saturday. The school is not under the inspection by my department, but I will at once see that inquiry is made. I may say that the Home is not connected with the National Memorial Gordon Boys' Home at Woking.

*School Children and Vaccination.*

Mr. RAMSAY MACDONALD asked the President of the Board of Education whether any inspection of school children attending London County Council schools to ascertain the vaccinal condition of such children had taken, or would take, place; whether it was proposed to exclude unvaccinated children from such schools; whether such action was in accordance with the regulations of the Board of Education, and what action he proposed to take in the matter.—Mr. RUNCIMAN replied: I have no definite information as to any action which the London County Council have taken or are about to take to ascertain whether children in public elementary schools have or have not been vaccinated. I have several times expressed my view on the matter and may refer the honourable Member to an answer which I gave in this House on Oct. 14th, 1908, when I said that "I strongly deprecate any attempt on the part of local authorities to use the machinery of medical inspection for the purpose of enforcing vaccination. Such action is likely to discredit medical inspection in the eyes of many parents who would otherwise be glad to take advantage of it." With regard to the second part of the question, I have no information as to any proposal to exclude unvaccinated children from the schools. In the circumstances the third and fourth questions do not arise.

Viscount HELMSLEY: Seeing that recently there has been an outbreak of small-pox will not the right honourable gentleman reconsider his advice to the local education authorities in reference to medical inspection, seeing that the advice may render parents unwilling to go in for vaccination for their children.—Mr. RUNCIMAN: No, sir, I have no intention whatever of altering my advice. The case of epidemics is fully dealt with in the code.

*The Outbreak of Small-pox.*

Dr. HILLIER asked the President of the Local Government Board how many cases of small-pox there were at present reported in London; and whether he had requested medical officers of health to use every legitimate means to induce all those who had been brought in contact with these cases to be vaccinated.—Mr. BURNS answered: Up to last night the number of cases of small-pox which had been reported was 47. A medical inspector of the Board has conferred with the medical officers of health and with the officers of the guardians in regard to the steps to be taken for dealing with the outbreak.

Dr. HILLIER: Is the medical inspector urging the vaccination of contacts?—Mr. BURNS: The medical inspector of the Board and the local

medical inspectors are, I am glad to say, doing everything that reasonably can be expected in battling with this outbreak.

Viscount HELMSLEY: Will the right honourable gentleman give definite instructions to the medical officers to urge vaccination wherever they can?—Mr. BURNS: I shall deem it my duty to leave it to the medical officer of the Board and to the local medical officers of health.

Dr. HILLIER also asked the right honourable gentlemen to state how many sanitary authorities in the country were proposing the expenditure of ratepayers' money to provide additional hospital accommodation for small-pox on the alleged ground of the danger to the community consequent on the slackening of compulsory vaccination.—Mr. BURNS replied: I have no information that any sanitary authorities are proposing to provide additional hospital accommodation on the ground mentioned.

Dr. HILLIER further asked the right honourable gentleman what was the proportion during last year, relatively to the children born, of those children who were exempted from vaccination under exemption certificates.—Mr. BURNS replied: I am not at present able to supply figures for the whole year. During the first half of the year, however, 456,533 births were registered and 110,851 exemption certificates were received.

TUESDAY, MARCH 7TH.

*The Nutritive Value of Rice.*

Mr. CHARLES BATHURST asked the President of the Local Government Board whether the Board was taking any steps, through the medium of the medical officers of health of the local authorities or otherwise, to demonstrate the high nutritive value, especially to young children, of unpolished as compared with polished rice, and the unwholesome character of the latter when, as often happened, a high percentage of the talc, steatite, or gypsum employed in the polishing process was left in the finished product as sold in this country. The honourable gentleman also asked whether, in consequence of Dr. J. M. Hamill's report to the Board in 1909 on facing and polishing rice, the right honourable gentleman had taken, or proposed to take, any steps by propounding an official definition of genuine rice for the purposes of the Food and Drugs Acts or otherwise to prevent the deleterious effects upon public health of the consumption of rice adulterated in the process of polishing by talc or some other glazing agent or in the process of rendering it translucent by petroleum or arachis oil.—Mr. BURNS said in reply: Perhaps I may be allowed to answer both questions together. Copies of the report made by Dr. Hamill of the Local Government Board's Food Department have been circulated to the local authorities concerned in the administration of the Sale of Food and Drugs Act, and I find that action has been taken by them in accordance with the recommendations in that report. As a result a considerable reduction has been made in the amount of extraneous matter left on the rice after the process of facing, and it does not seem necessary to take further action at the present time. I may explain that the process of polishing or facing does not remove any of the nutritive elements of the rice.

Mr. C. BATHURST: Has this report been circulated to the local authorities in London?

Mr. BURNS: A copy of the report which was published in 1909 on the subject to which the question relates was circulated to the local authorities in England and Wales, and these of course include the local authorities in London.

*Medical Examination of Recruits.*

Mr. HUNT asked the Secretary of State for War, seeing that a county association was only allowed one shilling for the medical examination of each recruit, and that the shilling was only paid for those recruits whom the medical practitioner passed, what steps were taken to prevent this small amount of payment having the effect of causing inefficient recruits to be passed.—Mr. HALDANE answered: The grants paid to associations for these and other medical examinations form a common fund from which fees are paid when necessary. There are many cases where fees are not payable as in camp. There is no reason to think that medical practitioners negligently pass medically unfit recruits into the force.

*The Investigation of Plague.*

Mr. CHANCELLOR asked the President of the Local Government Board whether the medical men who were proceeding to China to study the plague would visit places where plague was actually raging and study it on the spot; and whether they would investigate and report on the sanitary conditions of those places, or confine themselves to bacteriological studies in laboratories outside the infected area.—Mr. BURNS (in a written answer) replied: The International Plague Commission, which has been appointed on the invitation of the Chinese Government, will meet at Mukden on April 3rd, and, as at present arranged, will sit from two to five weeks. Dr. Farrar, the British representative, will arrive in the country some time earlier than this so that he may make himself personally acquainted with the local conditions. I am not at present aware of the precise nature of the methods of investigation which the Commission may decide to adopt.

## BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.

Food and the Principles of Dietetics. By Robert Hutchison, M.D. Edin., F.R.C.P. Third edition, revised and enlarged. Price 16*s.* net.

An Introduction to Bacteriological and Enzyme Chemistry. By Gilbert J. Fowler, D.Sc., F.I.C., Lecturer in Bacteriological Chemistry in the Public Health Department, Victoria University of Manchester. Price 7*s.* 6*d.* net.

BAILLIÈRE, TINDALL, AND COX, London.

Hæmatological Chart. By Gordon R. Ward, M.R.C.S., L.R.C.P., Pathologist to the General Hospital, Tunbridge Wells. Pad containing 50 Charts. Price 2*s.* 6*d.* net.

BAILLIÈRE, J. B., ET FILS, Paris.

La Pratique des Maladies des Enfants, Diagnostic et Thérapeutique. Publié en Fascicules. IV. Maladies du Cœur et des Vaisseaux, du Nez, du Larynx, des Bronches, des Poumons, des Plèvres et du Médiastin. Par Moussous, H. Barbier, Guinon, J. Halle, Zuber, Armand-Delille, Audeoud et Bourdillon. Price, paper, Fr.16; boards, Fr.17.50.

BUCHANAN, J. COURTNEY, 41, Northfield-road, Stamford Hill, London, N.

The Function of the Voluntary Hospitals in Relation to the Proposed Public Assistance Authority. A Paper read before the Incorporated Association of Hospital Officers on Friday, May 27th, 1910. By J. Courtney Buchanan, of Lincoln's Inn, Barrister-at-Law. Second edition, revised and enlarged. Price 1*s.*

COLLINGRIDGE, W. H. AND L., 148 and 149, Aldersgate-street, London, E.C.

Salads and their Cultivation. Edited by T. W. Sanders, F.L.S., F.R.H.S. Price 1*s.* net.

CONSTABLE AND CO., LIMITED, London.

The Doctor's Dilemma, Getting Married, and The Shewing-up of Blanco Posnet. By Bernard Shaw. Price 6*s.*

DORNAN, WILLIAM J., Printer, Philadelphia.

Transactions of the American Gynecological Society. Volume XXXV. For the year 1910. Price not stated.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.

The Academic Aspect of the Science of National Eugenics. A Lecture delivered to Undergraduates. By Karl Pearson, F.R.S. Price 1*s.* net.

FISCHER, GUSTAV, Jena.

Probleme der Protistenkunde. II. Die Natur der Spirochaeten. Von F. Doflein, A.O. Professor der Zoologie an der Universität München. Price M.1.20.

Handbuch der Technik und Methodik der Immunitätsforschung. Herausgegeben von Prof. Dr. R. Kraus in Wien und Dr. C. Levaditi in Paris. Erster Ergänzungsband. Price, paper, M.24; bound, M.26.50.

HÖLDER, ALFRED, Wien und Leipzig.

Supplemente zu H. Nothnagel, Spezielle Pathologie und Therapie. Herausgegeben von Prof. Dr. L. Von Frankl-Hochwart. I. Allgemeine und Spezielle Pathologie des Zwerchfells. Von Privatdozent Dr. Hans Eppinger in Wien. Price M.6.50.

JOURNAL OF NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, New York.

Outlines of Psychiatry. By William A. White, M.D., Superintendent, Government Hospital for the Insane, Washington, D.C. Third edition, revised and enlarged. Price $2.50.

KARGER, S., Berlin.

Biblisch-talmudische Medizin. Beiträge zur Geschichte der Heilkunde und der Kultur überhaupt. Von Dr. Julius Preuss, Arzt in Berlin. Price, bound, M.22; paper, M.20.

KING, P. S., AND SON, Orchard House, Westminster, London, S.W.

Report of the Proceedings of the Fifth Annual General Meeting of the National League for Physical Education and Improvement and of the First Conference of Health-Promoting Institutions held at the Guildhall, London, E.C., on the 8th and 9th December, 1910. Price 1*s.* net; post free, 1*s.* 2*d.*

KLINKHARDT, DR. WERNER, VERLAG VON, Leipzig.

Handbuch der gesamten medizinischen Anwendungen der Elektrizität, einschliesslich der Röntgenlehre. In drei Bänden. Herausgegeben von Prof. Dr. med. H. Boruttau, Privatdozent für Physiologie an der Universität Berlin, und Prof. Dr. med. L. Mann, Privatdozent für Nervenheilkunde an der Universität Breslau. Mitherausgeber für den Röntgenband: Prof. Dr. med. M. Levy-Dorn, Leitender Arzt am Rudolf-Virchow-Krankenhause in Berlin, und Prof. Dr. med. P. Krause, Direktor der medizinischen Universitätspoliklinik in Bonn. Zweiter Band, erste Hälfte. Price not stated.

Die Kinder-Seehospize und die Tuberkulose-Bekämpfung. Von Dr. Häberlein, Arzt der Seehospize auf Föhr. Mit einem Vorwort von Geheimrat Ewald, Berlin. Price, paper, M.6; bound, M.7.

LAURIE, T. WERNER, London.

In Castle and Court House, being Reminiscences of 30 Years in Ireland. By Ramsay Colles. Price 12*s.* 6*d.* net.

LEMCKE AND BUECHNER, 30–32, West 27th Street, New York.

Festschrift zur Vierzigjährigen Stiftungsfeier des Deutschen Hospitals, Herausgegeben von dem Medical Board im Auftrage der Aerzte des Deutschen Hospitals und Dispensary der Stadt New York. Price not stated.

LEONARD, W. M., 101, Tremont-street, Boston, U.S.A.

Case Histories in Pediatrics. By John Lovett Morse, A.M., M.D., Assistant Professor of Pediatrics, Harvard Medical School. Price, express prepaid, $3.00.

NISBET, JAMES, AND CO., LIMITED, London.

A Problem of To-day. The Vagrant, What to Do with Him. By R. Menzies Fergusson, D.D. Price 6*d.* net.

Nisbet's Medical Directory, 1911. In Two Parts. Part I. Directory of Medical Practitioners. Part II. The Local Directory. Price 7*s.* 6*d.* net.

ROYAL COLLEGE OF PHYSICIANS, London.

List of the Fellows, Members, Extra-Licentiates, and Licentiates of the Royal College of Physicians of London and of the Holders of the Diploma in Public Health granted jointly by the Royal Colleges of Physicians and Surgeons. MCMXI. Price not stated.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

A Handbook of Practical Treatment. By Many Writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia; and A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. In three volumes. Vol. I. Price per set, £3 15*s.* net.

A Treatise on Diagnostic Methods of Examination. By Professor Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with additions, by Nathaniel Bowditch Potter, M.D., Assistant Professor of Clinical Medicine at Columbia

University (College of Physicians and Surgeons), New York. Second edition, revised. Authorised Translation from the Fifth Revised and Enlarged German Edition. Price 27*s.* 6*d.* net.

SHERRATT AND HUGHES, London and Manchester.
Cæsarean Section in Great Britain and Ireland. With Tables. By Amand Routh, M.D. Lond., F.R.C.P. Lond. Being a Report upon the subject read at the Cinquième Congrès International d'Obstétrique et de Gynécologie at St. Petersburg in September, 1910. Price 5*s.* net.

WATTS AND CO., 17, Johnson's-court, Fleet-street, London, E.C.
The Origin of Life: Being an Account of Experiments with Certain Superheated Saline Solutions in Hermetically Sealed Vessels. By H. Charlton Bastian, M.D., F.R.S. Price 3*s.* 6*d.* net.

WILSON, EFFINGHAM, 54, Threadneedle-street, London, E.C.
County Court Practice Made Easy, or Debt Collection Simplified. By a Solicitor. Fourth (revised and enlarged) edition. Price 2*s.* 6*d.* net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.
Ambulance Examination Questions: Being a Catechism on First-Aid to the Injured and Sick. By D. M. Macdonald, M.D., M.R.C.P.E. Fourth reprint edition. Price 6*d.* net.

YEAR BOOK PRESS, CARE OF SWAN SONNENSCHEIN AND CO., LIMITED, London).
The Schoolmasters' Year Book and Directory, 1911. Ninth annual issue. Price 12*s.* 6*d.* net.
The Public Schools Year Book. The Official Book of Reference of the Headmasters' Conference. Twenty-second Year of Publication. 1911. Edited by H. F. W. Deane, M.A., F.S.A., and W. A. Evans, M.A. Price 3*s.* 6*d.* net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DIGGLE, F. H., M.B., Ch.B. Vict., has been appointed House Surgeon at the Manchester Royal Infirmary.

GRAY, H. TYRRELL, M.C. Cantab., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the Hampstead General and North-West London Hospitals.

HIGGIN, R. F., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at the Manchester Royal Infirmary.

HORSBURGH, E. L., M.B., B.S. Lond., has been appointed Senior House Surgeon at the Manchester Royal Infirmary.

JEFFERSON, G., M.B., B.S. Lond., has been appointed Anæsthetist to the Manchester Royal Infirmary.

LEA, C. E., M.D., Ch.B. Vict., has been appointed Assistant Director of the Clinical Laboratory at the Manchester Royal Infirmary.

MARSHALL, C. B., M.B., Ch.B. Vict., has been appointed Cancer Research Officer to the Manchester Royal Infirmary.

MOYES, J. M., M.B. Edin., has been appointed Assistant Medical Officer at the West Riding Asylum, Wakefield.

PULLAR, JAMES, M.D., C.M. Manitoba, has been appointed Clinical Assistant to the Chelsea Hospital for Women.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

AYR DISTRICT ASYLUM.—Second Assistant Physician. Salary £120 per annum, with board, lodging, &c.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BATH ROYAL UNITED HOSPITAL.—House Physician and House Surgeon. Salary each £80 per annum, with board, lodging, and washing.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Physician, also Obstetric and Ophthalmic House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £90 per annum, with apartments, board, and attendance.

BRADFORD, ROYAL EYE AND EAR HOSPITAL.—Female Resident. Salary £80 per annum, with board and laundry.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BURY, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

BUXTON, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £160 per annum, with board, lodging, washing, &c.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

DOVER, ROYAL VICTORIA HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

ENFIELD AND EDMONTON ISOLATION HOSPITAL, Winchmore Hill.—Resident Assistant Medical Officer. Salary at rate of £150 per annum, with rooms, rations, and washing.

FIFE, COUNTY OF.—Assistant School Medical Officer. Salary at rate of £250 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Two House Physicians and Three House Surgeons for six months. Salary in each case at rate of £40 per annum, with board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board and residence.

ILFORD URBAN DISTRICT COUNCIL.—Medical Inspector of School Children for three months. Salary 60 guineas.

INDUSTRIAL FARM COLONY FOR MENTALLY DEFECTIVE.—Medical Superintendent. Salary £150 per annum.

ISPAHAN MEN'S HOSPITAL.—Assistant.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, and attendance.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, &c. Also Anæsthetist. Salary £40 per annum.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary £120 per annum, with board, residence, and attendance.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY. — Honorary Surgeon to Throat and Ear Department.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Bacteriology. Salary £200 per annum.

NORWICH, NORFOLK COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, and all found.

PARK HOSPITAL FOR CHILDREN, Hither Green, S.E., and CHILDREN'S INFIRMARY, Carshalton, Surrey.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

PETERBOROUGH INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £80 per annum, all found.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, &c.

WALTHAMSTOW URBAN DISTRICT COUNCIL HOSPITAL FOR INFECTIOUS DISEASES, Chingford.—Resident Medical Officer. Salary £120 per annum, with rooms and board.

WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry. Also House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Yatton, in the county of Somerset; and at Coalisland, in the county of Tyrone.

THE Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for Preston, Garstang, and Chorley County Courts.

# Births, Marriages, and Deaths.

## BIRTHS.

MASINA.—On Feb. 15th, at Jamshed Hall, Nepean Sea-road, Malabar Hill, Bombay, India, the wife of H. M. Másiná, F.R.C.S., of a son.

TIPPING.—On March 1st, the wife of Harold Tipping, M.D. Lond., M.R.C.S., L.R.C.P., of Tyldesley, Palmer's Green, of twin daughters.

WILLAN.—On March 4th, at 23, Claremont-place, Newcastle-on-Tyne, the wife of R. J. Willan, F.R.C.S., of a daughter.

## MARRIAGES.

HOOPER—GOSLIN.—On March 2nd, at St. Mark, Ford, Devonport, Alfred Oswald Hooper, Surgeon, R.N., to Eileen Mary, youngest daughter of the late Lieutenant-Colonel William Charles Goslin and Mrs. Goslin, formerly of Southsea

## DEATHS.

SHAW.—On Feb. 28th, at Middleton Cottage, Southport, Edmund Shaw, M.D., in his 82nd year.

TAPSON.—On March 3rd, at "Holmwood," Clapham Common, Joseph Alfred Tapson, M.R.C.S., L.R.C.P., L.S.A., in his 84th year.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## TRICKING THE MEDICAL MAN.

THAT the publications of the Historical Manuscripts Commission are not altogether such dull reading as some might suppose, but occasionally lapse into a light vein, may be gathered from the subjoined extract from the volume just issued, entitled "Calendar of the MSS. of the Marquess of Ormonde, K.P., Preserved at Kilkenny Castle." Under date "London, April 30, 1681," Colonel E. Cooke, who seems to have been a very lively correspondent, writes to the Duke of Ormond, then Lord Lieutenant of Ireland, a long letter, in which, after communicating certain political intelligence, he proceeds to retail some remarkable stories of the town, this being the first:—

"One habited like the better sort of serving men, having more subtility than honesty, viewing the plate exposed to show in a goldsmith's shop, took a note of it, which reading to the goldsmith as parcels his master (naming a doctor of physic the goldsmith had heard of) had sent him to buy, the goldsmith undertook to furnish him to the value of between 50 *li.* and 60 *li.* The goldsmith and his apprentices immediately fell furbishing up the plate, he appointing to call for it within two hours, because his master was to make a present of it that night. Accordingly he came just as it began to be dark, borrowed one of the servants to carry it, and the note of its weight and worth along with him. As soon as he came to the doctor's house he ordered the fellow to stay in a corner of the hall till he waited on his master, and immediately ascended the stairs to his closet door, and on knocking had entrance, told the doctor he had a kinsman a hopeful young man (exactly describing the goldsmith's servant's person and habit) who from the distemper of this new fever, though he had recovered his strength, yet had so impaired his senses that he frequently fell into raving fits, the warning he gave of their approach was to fall a-talking of plate and money, and money for plate, and then two or three men could scarce hold him; because he had not long been so distempered he the more hoped his recovery, especially encouraged from the doctor's fame; he added he would take care to convey him to the doctor, but durst not come with him, and so left the doctor to give order for a dark room against he came, and returned to the fellow for plate and note to carry to his master, who himself would weigh it, and he would immediately bring down the money. Away slips he out of the back door with his burden, and when the fellow had outstayed his patience he desired to speak with the doctor, to whom when he approached the doctor concluded him to be his bespoke patient, and being in the middle of a recipe bade him sit down and he would discourse with him presently, by his bell summoning up his servants, and as soon as at leisure began to question him how long he had been ill. He, staring, replied that he had not been ill. 'I mean,' said the doctor, 'of this new fever.' He answered he never had it in his life. The doctor would fain feel his pulse; the fellow struggled to prevent it, and began to say he came not for physic, but for money for his plate, or his plate again. Immediately three of his servants were commanded to seize him, and a chirurgeon sent for to let him blood, which by mere force he did, and to take a great quantity from him, nay after sent for a barber to shave off his hair, and the more the fellow argued for his plate or money, the more madman he was accounted, and having lost his blood and hair was clapped into a dark room, not only kept there that night, but the next day also, and the night following. The goldsmith all this while, concluding his servant run away with his plate, was determined to garet him, but a gentleman accidentally coming to the doctor and he mentioning his new patient, the gentleman's curiosity tempted him to see him, who (it seems) the fellow had seen and began to declare whose servant he was. The gentleman knew him not in that disguise, but sending for his master the cheat came out."

## THE PLAGUE IN CHINA: THE SCARE ABOUT CHINA TEA.

A CORRESPONDENT has called our attention to an advertisement appearing in the *Birmingham Dally Mail* under the head of "Black Death in China," with the subtitle "Danger of Plague Germs in the Cheap China Tea now Used in so many Blends." The advertisement goes on to state that fear is entertained in many quarters lest the germs of plague should gain a footing in England through merchandise reaching this country from China—"particularly is this possible in connexion with tea, as owing to the present extremely dear markets all the cheaper teas now being sold are perforce largely mixed with low grade tea from China to bring down the price." We find the suggestion that those who drink China tea may catch the plague to be a very wild and random one, and if it has been made on purely commercial grounds we think that the public has a right to resent the gruesome suggestion. To begin with, the present stock of China tea was probably bonded before the outbreak of plague in China, while the endemic is taking place at an enormous distance from the tea fields or the ports where it is shipped to Europe. These facts, together with the precautions taken by the Board of Customs, render it impossible that China tea should become a vehicle for the spread of plague.

## THE POST OF MEDICAL OFFICER AND PUBLIC VACCINATOR FOR DISTRICT NO. 5 OF PENZANCE.

*To the Editor of* THE LANCET.

SIR,—May I ask through your columns that any medical man who intends applying for this post now advertised as to be vacant on March 16th will first communicate with Dr. C. Branwell, "Bellair," Penzance.

I am, Sir, yours faithfully,

R. C. LAWRY,

Honorary Secretary, West Penwith Medical Society.

Penzance, March 8th, 1911.

## A WARNING.

THE enclosed description has been sent to us by the head of an important pathological laboratory. We publish it as it may safeguard others from being victimised as our correspondent has been. It is quite probable that the man described below has been going around to the British laboratories for some time, and the description agrees with that of a man who fleeced the director of one of the London laboratories about two years ago.

*Description.*—"A short, stout, dyspnœic man, about 5 feet 4 inches in height, aged about 55 years. Jewish-looking, complexion tawny, full head of greyish-white hair, which is slightly curly; similar moustache. Nose thick, and bent slightly to one side. Manners very insinuating; well dressed; American accent. Poses as a medical man and speaks as if he knew prominent colleagues intimately."

We shall be glad to hear from anyone who has suffered from relations with this ingratiating person.

## THE ISLAND OF ST. VINCENT.

IN his annual report on the Blue-book of this colony (an island about 95 miles west of Barbados, 18 miles in length and 11 in breadth, comprising an area of 140 square miles) the Hon. C. Gideon Murray, the Administrator, states that the present population is estimated by the Registrar-General at 53,448. The births registered during the year numbered 1687, of which 951 were illegitimate; marriages numbered 161 and the deaths totalled 831. Public health generally was good during the year. In Union and Mayreu islands, however (two of the Grenadine group), an epidemic of enteric fever broke out. Fourteen cases occurred, each of which was removed to the Carriacou Hospital to be treated there. Efficient disinfective and other precautionary measures were at once adopted, with satisfactory results. It was ascertained that the infection had been introduced from Carriacou (the largest of the group of Grenadines attached to the Grenada Government), where an epidemic prevailed almost throughout the year. The water-supply in the Grenadines is in all cases from wells or tanks. There must consequently always be a possibility of recurrent epidemics of enteric fever until such time as all the public wells of these islands are closed, covered in, and provided with pumps. During the past year a good deal has been accomplished by the Government in this direction.

During the year there were 703 admissions to the Colonial Hospital; the daily average of cases treated was 55; the death-rate was 6·8 of the total cases. Operations numbered 203. The medical officer is greatly assisted in his work by the presence of an efficient European nurse-matron selected by the Colonial Nursing Association. The number of inmates of the Leper Asylum on March 31st, 1910, was 6; during the year there had been 2 admissions and 2 deaths. Under a new Public Health Ordinance the compulsory segregation of lepers is provided for.

The rainfall for the year was 106·77 inches. Rain fell on 236 days the maximum fall in 24 hours being 3·43 inches on June 19th. The mean monthly temperature was 77·2° F.; the maximum was 80·4° (in December), and the minimum 74·6° (in January). Except in August and September, when the atmosphere is uncomfortably hot, although not even in those months insalubrious, the climate may be regarded as most healthy for both Europeans and coloured persons. Malaria is hardly known, while yellow fever has proved itself to be a disease of the past. During the year there was a complete absence of all diseases notifiable under the Inter-colonial Sanitary Convention.

Mr. Murray, in closing his report, observes: "An attempt was made during the year to promote a company for the erection of a really good hotel in the chief port of Kingstown. For the moment the matter is in abeyance, but so soon as the question of steamship communication is settled it will be taken up again. St. Vincent is without good hotel accommodation, which is highly essential if she is to become a resort for health-seekers and travellers, the qualifications for which she possesses in a large degree. The scenery is beautiful; the views are magnificent; the climate, moreover, is one of the healthiest in the West Indies, and from December to April compares favourably with the French or Italian

Riviera. There are charming walks, rides, and drives, and many objects of historic interest may be seen. A fair main road runs all round the island, and there are good bridle-paths in the interior. The sea-fishing and sea-bathing are excellent, while a picturesque natural nine-holed golf-course has just been established in one of the prettiest situations in the island. The more actively inclined will be rewarded by climbing the quiescent volcano Soufrière, which is not difficult of ascent. The volcano has erupted only three times in the last 300 years—viz., in 1718, 1812, and 1902."

## PAYMENT OF THE CHIEF MEDICAL OFFICER OF INSURANCE COMPANIES.

*To the Editor of* THE LANCET.

SIR,—I shall be much obliged to you if through your columns you will kindly inform me how the head office medical officer of an insurance company or friendly society—he who scans the completed proposal schedules—is paid; whether a fixed sum or capitation grant, and how the rate is computed? I am, Sir, yours faithfully,

March 6th, 1911. J. E., F.R.C.S.

*** The principal medical officer of an insurance company is usually paid by salary. The sum varies with the number of days in each week that the officer attends the offices of the company. In the majority of cases the duties include the examination of applicants.—ED. L.

## THE PRUDENTIAL ASSURANCE CO., LIMITED.

THE report of this vast undertaking for 1910 has just been issued. The total number of policies in force in both the ordinary and industrial branches, taken together, numbered at Dec. 31st, 1910, 19,724,323 as against 19,258,033 at Dec. 31st, 1909, an increase of 466,290 policies during the year. The premiums for 1910 amounted to £12,232,438 as against £11,881,877 for 1909, an increase of £350,561. The assets of the company for 1910 amounted to £77,529,226 as compared with £74,201,701 for 1909, an increase of £3,327,525. It is interesting to calculate that the annual premium received in respect of the policies in the industrial branch amounted to an average of not quite 8*s.* each, whereas the average annual premium received for each policy in the ordinary branch was a little more than £5 6*s.* We observe that the company's accounts are set out differently for 1910 and are headed "Assurance Companies Act, 1909, Third Schedule and First Schedule," whereas the Company's accounts for 1909 were headed "Life Assurance Companies Act 1870, Third Schedule and Fourth Schedule." The directors in continuation of the policy adopted last year have considered it advisable to write down certain securities. This is no doubt a wise policy. In the ordinary branch a reversionary bonus at the rate of £1 14*s.* per cent. on the original sums assured has again been added to all classes of participating policies issued since the year 1876, and the directors announce an increase in the rate of bonus in the industrial branch of the company. This small comment can do but scant justice to the huge figures of this company. The best way for those interested is to obtain the accounts themselves and revel in their "millions."

*W. E. L.*—The work, the title of which our correspondent wants to know, is probably "Lectures on Cosmetic Treatment," by Dr. Edmund Saalfeld of Berlin, translated by J. F. Halls Dally, M.D., 5*s.* net, Rebman, Limited, London. It was reviewed in THE LANCET of August 6th, 1910, p. 348.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

March 23rd (Paris).—First Congress of French Medical Journalists.
,, 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
,, 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
,, 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
,, 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May (Washington).—Conference on the Protection of Industrial Property. (Question of False Marking of Goods.)
,, (Paris).—International Sanitary Conference (Prevention of Plague).
,, 30th–June 2nd (London).—National Conference on the Prevention of Destitution.
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
,, (Los Angeles, Cal.).—American Medical Association.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Bergen).—Seventh Norwegian Congress of Internal Medicine.
,, (Birmingham).—British Medical Association.
July 24th–28th (London).—Second International Congress of Urology.
,, 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
,, 26th–29th (London).—Universal Races Congress.
August 15th–21st (Dublin).—Royal Institute of Public Health.
,, 30th–Sept. 2nd (Berlin).—Third International Laryngo-Rhinological Congress.
,, 30th–Sept. 6th (Portsmouth).—British Association.
September (Paris).—First Congress of the International Medical Association for the Prevention of War.
,, (Brussels).—Exhibition of Fractures.
,, (Genoa).—International Exhibition of Marine Hygiene.
September–November (Antwerp).—International Exhibition of Alimentation, Brewing, Wines, and Liqueurs.
Sept. 11th–13th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
,, 11th–13th (Vienna).—German Urological Society.
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 18th–24th (Turin).—Fourth National Congress of Hygiene.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
,, 26th–30th (Brussels).—Third Congress of the International Society of Surgery and Exhibition of Fractures.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
,, 2nd–5th (Turin).—International Congress of Pathology.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Montreal).—Canadian Medical Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—
Spring (London).—Second Optical Convention.
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
,, Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth Internationa Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(Dresden (?)).—International Conference on Cancer.
(Washington).—Congress of American Physicians and Surgeons.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

**The following journals, magazines, &c., have been received:**—Paris Médical, Pharmaceutical Journal, Annales de l'Institut Pasteur, Nederlandsch Tijdschrift voor Geneeskunde, Transvaal Medical Journal, Archives de Médecine et Pharmacie Navales, Gazzetta degli Ospedali, Progrès Médical, Boston Medical and Surgical Journal, Canadian Medical Association Journal, Allgemeine Wiener Medizinische Zeitung, Times of India, Pioneer Mail, Presse Médicale d'Egypte, Office International d'Hygiène Publique Bulletin, Medical Record, Il Morgagni, St. Mary's Hospital Gazette, Journal of Mental Science, Journal of Tropical Medicine and Hygiene, Revue d'Hygiène et de Police Sanitaire, Bulletin de la Société de l'Internat des Hôpitaux de Paris, Archives Espanoles de Neurologia, Psiquiatria y Fisioterapia, University of Pennsylvania Medical Bulletin, La Quinzaine Thérapeutique, Cornhill Magazine, Ophthalmic Literature, Magazine of the London (Royal Free Hospital) School of Medicine for Women, Revue de Psychiatrie, Journal of Nervous and Mental Disease, The British Journal of Dental Science, Dominion Medical Monthly, Medical Review of Reviews, The Therapeutic Gazette, The Journal of Laryngology, Public Health, The Nation in Arms, The Zoophilist and Animals' Defender, Guy's Hospital Gazette, Archives de l'Institut Pasteur de Tunis, Annali di Medicina Navale e Coloniale, Archives of Internal Medicine, Dublin Medical Journal, Lady Minto's Indian Nursing Association Report, The Child's Guardian, Revista de Los Hospitales, Indian Medical Gazette, St. Bartholomew's Hospital Journal, St. Thomas's Hospital Gazette, Annual Reports of the Royal Dental Hospital of London, Bulletin of the Johns Hopkins Hospital, Australasian Medical Gazette, The China Medical Journal, The Abolitionist, Proceedings of the Royal Society of Medicine, Edinburgh Medical Journal, Local Government Review, The Contemporary, The Burlington Magazine.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Jonathan Hutchinson, L. A. Dunn): at 5.30 P.M.

*Papers:*

Mr. Rickman J. Godlee: Myositis Ossificans and its Results.
Mr. G. H. Makins, C.B.: Myositis Ossificans.
Mr. A. A. Bowlby, C.M.G.: The Formation of Bone in Periosteum separated by Injury.
Mr. J. Berry: Congenital Pouch of the Bladder treated by Excision.
Mr. C. H. Fagge: The Inguinal Method of Radical Cure of Femoral Hernia.
Mr. P. C. Fenwick: Rupture of the Bladder followed by Gangrene.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham), at the Imperial Cancer Research Laboratory, Victoria Embankment: at 8.30 P.M.
Laboratory Meeting.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira), at 11, Chandos-street, W.: at 5 P.M.

*Cases and Specimens:*

Mr. J. E. R. McDonagh: Case of Congenital Xanthoma, with Microscopical Sections.
And other Cases.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—H. J. Marriage, Sydney Scott), at 11, Chandos-street, W.: at 5 P.M.

*Discussion*

On Trauma in Relation to Otology (opened by Dr. W. Milligan and Mr. C. A. Ballance, M.V.O.).

*Demonstration:*

Mr. Cheatle: Fifteen Temporal Bones illustrating Injuries to the Auditory Apparatus.

Members are requested to send Cases and Specimens illustrating the subject.
Members of the Surgical Section are specially invited.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

*Paper:*

Mr. A. D. Reid: Technique of Skiagraphy (illustrated by lantern slides and a demonstration of a new tube stand).

**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—8.30 P.M., Dr. N. Raw: The Influence of Diabetes on Tuberculous Infections of the Human Body.—Mr. D'Arcy Power: The Influence of Syphilis on Tuberculous Infections of the Human Body.

**ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.**

MONDAY.—8 P.M., Prof. J. A. Fleming: Applications of Electric Heating. (Cantor Lecture II.)
WEDNESDAY.—4.30 P.M., Col. C. E. Cassal, V.D.: The Adulteration of Food.

**CHELSEA CLINICAL SOCIETY, Chelsea Dispensary, Manor-street, King's-road, S.W.**

TUESDAY.—8.30 P.M., Annual Clinical Debate on the Treatment of Colitis (opened by Dr. W. H. White and Dr. R. Hutchison on Some Principles in the Treatment of Colitis). Followed by a General Discussion. Open to all members of the Medical Profession.

**ROYAL METEOROLOGICAL SOCIETY, Institution of Civil Engineers, Great George-street, Westminster, S.W.**

WEDNESDAY.—7.30 P.M., Prof. H. H. Turner: What Can We Learn from Rainfall Records? (Illustrated by lantern slides.)

**SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.**

FRIDAY.—8.30 P.M., Dr. R. Strong (Manila): A Note on the Specific Cure of Yaws by Dioxy-diamido-arseno-benzol (with epidiascope).—Dr. J. P. Maxwell (Amoy): The Use of Santonin in the Treatment of the Intestinal Affections of the Tropics.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.**

TUESDAY AND THURSDAY.—5 P.M., Dr. A. F. Hertz: Sensibility of the Alimentary Canal in Health and Disease (Goulstonian Lecture).

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Dr. G. Pernet: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. Blumfeld: Anæsthetics in Abdominal Operations.
TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Mr. S. Hastings: Chronic Suppuration of the Antrum.
WEDNESDAY.—4 P.M., Mr. C. Ryall: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. J. Wethered: Asthma.
THURSDAY.—4 P.M., Mr. G. B. M. White: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Forsyth: Diagnostic Difficulties in Children.
FRIDAY.—4 P.M., Mr. M. S. Mayou: Clinique (Eye.)

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. S. Edwards: Urinary Surgery.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Bidwell: Minor Surgery.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. R. Jones: The Question Whether there is an Insane Temperament.
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture VI.)
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Addison's Disease.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Dr. G. Rankin: Indigestion.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Glycosuria.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. E. Giles: Diagnostic Difficulties in Gynæcology.
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappell). 4.30 P.M., Special Demonstration:—Dr. A. J. Whiting: Selected Medical Cases.
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.**

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx.

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Tooth: Myopathy.
FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. S. Scott: Otitic Meningitis.

**HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Injuries and Disease of the Hip Joint: Diagnosis, Cause, Complications, Treatment. (Special Post-Graduate Course.)
THURSDAY.—4 P.M., Mr. Addison: Coxavara.
FRIDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Hip Joint (continued): Sacro-iliac Joint. (Special Post-Graduate Course.)

**ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.**

TUESDAY.—8 P.M., Discussion on Rescue Work in Mines, with a Demonstration of Apparatus in Use (opened by Dr. L. Hill). The following hope to take part in the Discussion:—Prof. J. Cadman, Dr. E. L. Collis, Dr. M. S. Pembrey, Mr. G. B. Walker, and Sergeant A. T. Winborn.

**ST. JOHN'S HOSPITAL FOR DISHASES OF THE SKIN,** Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Treatment (Electrical).

**ANCOATS HOSPITAL,** Manchester.

THURSDAY.—4.15 P.M., Dr. E. B. Leech: Œsophageal Obstruction. (Post-Graduate Clinic).

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY** (18th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

**At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.**

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The Index and Title-page to Vol. II. of 1910 were given in THE LANCET of Dec. 31st, 1910.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, March 8th, 1911.

| Date. | | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|
| Mar. | 2 | 30·21 | S.W. | ... | 98 | 59 | 40 | 49 | 50 | Cloudy |
| ,, | 3 | 30·35 | W. | ... | 64 | 56 | 49 | 49 | 50 | Cloudy |
| ,, | 4 | 30·09 | S.W. | ... | 63 | 52 | 48 | 47 | 49 | Cloudy |
| ,, | 5 | 30·25 | S.W. | 0·07 | 78 | 50 | 36 | 37 | 39 | Fine |
| ,, | 6 | 29·93 | S.W. | ... | 57 | 47 | 37 | 38 | 40 | Cloudy |
| ,, | 7 | 30·11 | N.E. | 0·20 | 72 | 47 | 40 | 41 | 42 | Overcast |
| ,, | 8 | 30·12 | S.W. | ... | 66 | 48 | 36 | 36 | 37 | Fine |

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# The Milroy Lectures
ON
# ANKYLOSTOMA INFECTION.

*Delivered before the Royal College of Physicians of London on March 2nd, 7th, and 9th, 1911,*

BY A. E. BOYCOTT, M.A., D.M. OXON.,
LECTURER ON PATHOLOGY, GUY'S HOSPITAL.

## LECTURE I.

*Delivered on March 2nd.*

MR. PRESIDENT AND GENTLEMEN,—Taking the world as a whole, with the possible exception of the malarial organisms, ankylostoma is, I suppose, responsible for more unhappiness and inefficiency than any other parasite, and, for the most part indirectly, for no inconsiderable number of deaths. Practically all tropical countries are permeated with the worm, and in places where the conditions for its propagation are not unfavourable it may reduce four-fifths of the population to a continual state of chronic ill-health which is only terminated by their premature decease, commonly from some secondary affection. Under circumstances where the prevailing conditions are more or less inhibitory, though most people may be infected, yet in relatively few is the dose of parasite so big or the resistance of the host so small that any demonstrable illness is produced. An individual in whose bowels ankylostoma is living and whose tisssues are shown to be reacting to its presence by changes in the bone marrow, may be said to be infected with ankylostoma in the true sense. But if there are no subjective or objective signs of illness one cannot reasonably say that he is suffering from the disease ankylostomiasis. It is necessary, therefore, to distinguish between cases of ankylostoma infection without illness and cases of ankylostomiasis as sharply as the fact that the one must grade imperceptibly into the other will allow; and to recognise that the latter comprise a variable, and often very small, proportion of the total number of infected individuals.

From the point of view of preventive medicine the worm carrier, owing to his mobility and the fact that his appearance and habits excite no apprehension, is in many ways a more important person than the sick man who is laid by the heels with his anæmia and dyspnœa. I have, therefore, taken "Ankylostoma Infection" as the title of these lectures rather than "ankylostomiasis," and by the latter term I shall refer only to illness due to ankylostoma. We have, unfortunately, no convenient terminology in current use denoting the distinction between "Wurmträger" and "Wurmkranken," "ankylostomés" and "ankylostomiasiques."

In this country ankylostoma is restricted to a very small area—the underground workings of the metalliferous mines in Cornwall; and the persons exposed to infection number in all only some 6000. There is no clear record that any death there has been due to uncomplicated ankylostomiasis. It may therefore well seem presumptuous on my part, whose only personal experience of the parasite has been in Cornwall, to attempt to deal with an infection which, as I have already indicated, attains dimensions of massive importance in the tropics. As a matter of fact, however, the segregation of the saprophytic phase of the parasite to a special and restricted area, and the fact that only a limited proportion of the population is exposed to the possibility of infection, afford opportunities for the study of many of the questions involved which cannot be obtained where infection is intensive and generally disseminated both on the earth and in the people. In the tin-mines of Cornwall, and the coal-mines of Northern France, Belgium, and Westphalia, ankylostoma is confined to subterranean workings, and only those who work in mines run the risk of being infected. The surface in the neighbourhood is, *quâ* ankylostoma, sterile, and the general population live free from infection. In most respects these are the ideal conditions which one would desire to lay down in any experimental inquiry into an epidemic infection; they are seldom realised so satisfactorily in the natural history of disease.

In reference to the personal observations which we have made in Cornwall and in connexion with Cornish cases of ankylostoma infection [1] it should be understood, though their names are not always mentioned, that whatever of interest has come out of these inquiries is mostly due to Dr. J. S. Haldane, reader in physiology in the University of Oxford, and Mr. R. A. Thomas, manager of Dolcoath Mine. To a somewhat less, but by no means small degree, these investigations have been assisted also by Dr. S. G. Scott and Professor J. Cadman.

### THE LIFE-HISTORY OF ANKYLOSTOMA.

The life-history of ankylostoma seems to be now satisfactorily established. The adult worms, male and female, live in the small intestine of man. They eat away at the mucous membrane to which they are attached, with their heads buried more or less deeply into the mucosa and sometimes the submucous tissue. The eggs are laid here in prodigious numbers, and pass out of the human body to begin the saprophytic stage of their existence in the stools. As seen in the ordinary sample of fresh fæces which has been outside the body for several hours, the eggs have generally divided once or twice, so that two or four cells are visible within the transparent shell; unsegmented eggs are not uncommon. Under favourable circumstances development proceeds rapidly through a morula stage to a little worm which hatches out in one or two days; if conditions are unsuitable this period may be prolonged to a week or ten days or even several weeks. The larval worm, after escaping from the eggs, continues its rapid development, moults three or four times,[2] and in four to ten days, according to circumstances, reaches a definite stage—the full grown larva. At this point it is an individual, without any sexual differentiation, about 0·6 mm. long, and is provided with a stout chitinous[3] sheath, inside which it can move about pretty freely. Hence the term "encapsuled larva." Unless it has an opportunity of becoming parasitic no further growth takes place and the full grown larva will continue its saprophytic phase without any further alteration for at least many months. If, on the other hand, it gains entrance to the human body, further progress is made, sexual differentiation becomes manifest, and in about six or seven weeks the adult worm is living in the small intestine.

In the life-history of all parasites it is important to know at what stage or stages multiplication of individuals takes place, and especially whether any increase occurs during any saprophytic phase. For it is clear that it is better worth while to plan one's attack, if any direct attack is desirable, upon the multiplying rather than upon the resting stage. In the case of ankylostoma there is, I think, no doubt that there is no multiplication except during the parasitic phase. The view—first propounded by Giles in his admirable study of kala-azar, and subsequently supported from time to time by various other observers—that ankylostoma larvæ may become sexually mature, and reproduce themselves outside the body, seems to be founded on erroneous observations. Those who have supported the theory of heterogenesis have not sufficiently appreciated the extraordinary prevalence of small nematode worms throughout nature, not parasitic—as far, at any rate, as the higher mammals are concerned, though some of them appear to have important pathogenic relations to plants. Many of them have larvæ which are indistinguishable from those of ankylostoma, especially when in their earlier stages, and on superficial examination their eggs are very similar, though, as far as my experience goes, generally distinguishable on careful comparison. Such nematodes may be found anywhere; they are particularly abundant in fæces which have been lying on the ground in hot moist places, such as mines, where ankylostoma is prevalent. In examining such fæces immediately after

[1] The literature will be found in the Journal of Hygiene, vol. iii. (1903), p. 95; vol. iv. (1904), pp. 73, 437; vol. v. (1905), p. 280; and vol. ix. (1909), p. 264. And in Parliamentary Papers, Cd. 1318, 1902; 1843, 1903; 2066, 1904; 2091, 1904; 4820, 1909.

[2] I do not suppose the number of moults is indefinite or immaterial, but I do not know exactly how many there are. My own observations indicate at least three.

[3] The hard parts of the skin of such animals are commonly described as "chitinous," but not necessarily in all cases in any more precise sense than that in which strong soap solutions or silicic acid are called "gelatinous." Bondouy (Archives de Parasitologie, vol. xiv. (1910), p. 1), at any rate, has shown that the skin of the horse strongyle (*Sclerostoma equinum*) does not consist of chitin—i.e., does not yield glucosamin on decomposition.

collection, and from time to time after subsequent incubation, sexual forms, and then a fresh generation of eggs and larvæ, will often be found; this occurrence is liable to be the more misleading if the fæces are derived from a person infected with ankylostoma, and are found to contain eggs and larvæ which resemble, and in many cases doubtless really are, those of the human parasite.

I have made many attempts to observe the development of sexual forms in cultures of fæces from infected persons, taking care not to introduce any obvious source of contamination, such as earth or the like, and keeping the cultures under aerobic and anaerobic conditions, and with various food materials in different amounts, but in every case without success. The admixture of a little garden earth will often result in the appearance of worms which proceed to become sexual and multiply. Even if occasionally sexual reproduction were observed in fæces which had been effectually protected from contamination, as Ozzard[4] and others appear to have done, I confess that I should interpret the phenomenon as being due to the person having swallowed the eggs of some of the free-living nematodes. Considering the degree to which these animals infest all nature, it seems likely that man must from time to time ingest them or their eggs in fair numbers. Leiper[5] has lately recorded a remarkable instance in which these deceptive little worms appeared in an old laboratory jar.

Apart from the question of heterogenesis, these considerations indicate that one must be extremely cautious in identifying any nematode larvæ which may be found loose in the world as being those of ankylostoma; one cannot, for instance, obtain any evidence as to the infectivity of a place by observations on the prevalence of such larvæ. The only test that I know of which will help to identify ankylostoma larvæ from others which are morphologically closely similar is to keep them under observation and see that no sexual differentiation occurs.

The nematode *Strongyloides intestinalis* is often found along with ankylostoma; one or two cases were seen in Cornwall. The eggs of the sexual parasitic generation (*Anguillula intestinalis*) hatch inside the body and pass out in the fæces as larvæ, which give rise to a sexual saprophytic generation (*A. stercoralis*). It is possible that this has been sometimes mistaken for a sexual saprophytic phase of ankylostoma.

## MODES OF INFECTION.

Up to 1898 it had always been assumed that the only path of entrance of ankylostoma in the human body was the mouth and alimentary canal. Looss,[6] however, then suggested that infection might take place through the skin, afterwards showing that larvæ could penetrate human skin, producing a local reaction, and that men and dogs could acquire the disease by the cutaneous route. Experiments made on man by C. A. Smith, Pieri, Herman, Bruns, Tenholt, and others confirmed these observations. Personally I produced an infection in Professor J. B. Leathes by applying a few full-grown larvæ to the skin of his forearm for a couple of hours. There were a slight local reaction and some itching. As he wrote to me, "σκωληκόβρωτος ἐγιγνόμην," but in the sequel he did better than Herod, and had no symptoms of illness, though definite signs of infection in the form of an increase of eosinophile leucocytes appeared four weeks later; eggs were found in the stools after 50 days. This experiment is, I think, particularly conclusive, since Leathes was at the time working in a chemical laboratory in London, and had never been exposed to any possibility of natural infection. The larvæ used for the experiment were a single batch bred for the purpose from infected fæces in another part of the building with which Leathes had no contact. In the building itself no other ankylostoma material had ever been dealt with.

Of the possibility of larvæ passing through the skin, and ultimately reaching the bowel, there is therefore no doubt. There are also reasons to believe that this is, in nature, by far the most important method of infection. The local reaction due to the larvæ themselves is variable, erythema and urticaria, sometimes hardly perceptible, but though there may not be much to see there is generally a good deal of itching. Scratching and secondary infections from the dirt which accompanies the larvæ often result in the appearance of furuncles, which are such as impress themselves on the subject's memory. Hence the "ground itch" or "coolie itch" of Assam, the "mazamorra" of Porto Rico, the "bunches" of Cornwall. The Cornish miners knew long ago that the agent which lived in Dalcoath Mine, and ultimately led to anæmia, was also the cause of their skin troubles; they were perfectly clear that "bunches" preceded shortness of breath and that the two had some etiological connexion, and produced cogent topographical evidence that one did not occur without the other. I am free to confess that for my own part, having failed to infect myself through the skin, I neglected their epidemiological evidence and was not very much interested in the long tales they had to tell of how they had scratched themselves all night after working in particular parts of the mine, and later on became short of breath. But they evidently knew more about it than I did, and I have often wondered since how many lessons the general consensus of popular opinion has to teach experimental parasitologists.

The obvious difficulties in the way of mouth infection with the stale remnants of human fæces raise the possibility of ingestion being able to give rise to an infection as widespread as that which obtains with ankylostoma under favourable circumstances, where 95 per cent. of the population may harbour the worm. There do not, however, seem to be any conclusive reasons for doubting the importance of mouth infection on this score. Infection with ascaris and trichocephalus certainly takes place by the mouth, since the eggs do not hatch outside the body. All Chinamen are said to have trichocephalus and 70 per cent. of the patients in Paris hospitals[7]; it occurs in as many as 8 per cent. of the random patients in Guy's Hospital,[8] a fact which shows that even in and about London people must swallow the remnants of human fæces more frequently than a consideration of their habits and sanitary circumstances would suggest. Ascaris is rare enough in this country, but occurs in half the agricultural population in Switzerland,[9] and freely in most tropical countries. Of Cornish tin-miners four-fifths have trichocephalus and a quarter ascaris, the frequency of infection with ankylostoma varying from 10 to 90 per cent.

It seems almost impossible that mouth infection among civilised persons should be so frequent, but the facts do not seem capable of any other interpretation. On the other hand, it seems unlikely that the severity of ankylostoma infection, and especially the frequency of reinfection, are compatible with the hypothesis that all the worms are swallowed as larvæ. There is no parallel in bacterial infections, since these can multiply in the body, whereas one ankylostoma larva cannot, if swallowed, give rise to more than one adult worm in the intestines. Most infections with trichocephalus and ascaris seen in this country are slight; but, as in hot countries where the segregation of fæces is imperfect, in Cornish miners some very heavy infections are seen.

In Cornwall, in Porto Rico, and in other places where inquiry has been made, with Egypt as a marked exception, nearly all cases of ankylostoma infection give a history of a skin eruption, characteristically associated with excessive itching in its early stages and often occurring in repeated attacks. Those who fail to recollect any such incident cannot be considered as necessarily examples of mouth infection, since it is known experimentally that the local changes at the point of entrance may be very slight, especially if secondary infections are avoided. But though the skin is doubtless the usual and the important path of entry, there are no reasons for doubting the possibility of mouth infection. Leichtenstern showed that infection follows after swallowing adult larvæ, and I was myself infected in this way through an accident with a pipette. The work of Looss on dogs and of Schaudinn on monkeys has shown that larvæ penetrating the skin get into the veins and ultimately lodge in the lungs, whence they pass up the trachea and down the œsophagus to their definitive home. Some such sojourn in the tissues may be necessary for development; if so, it may be presumed that larvæ which are swallowed escape from the upper part of the alimentary canal and then go through much the same course as those which enter through the skin. But at present there is no

[4] Brit. Med. Jour., vol. ii., 1909, p. 779.
[5] Ibid., vol. ii., 1909, p. 1332.
[6] See Zeitschrift für Klinische Medizin, Band lviii., 1906.
[7] Chantemesse and Rodriguez: Bulletin de l'Académie de Médecine, vol. lix., 1908, p. 407.
[8] Journal of Hygiene, vol. v., 1905, p. 274.
[9] Galli Valerio: Centralblatt für Bakteriologie, Orig., Band xliv., 1907, p. 531.

evidence showing that this is the case, and that larvæ when swallowed do not go on straight into the bowel.

Experimental skin infection is not always successful. Pieri, Grassi, and Galli-Valerio, for example, had several failures. I tried repeatedly to infect myself in this way, but with no success, using both cultures containing many adult larvæ and infected fæces obtained in Dolcoath Mine.

Ankylostoma can only gain an effective entrance to the human body in the stage of the full-grown larvæ. Eggs or young larvæ are not infective when swallowed, nor can they pass through the skin. The full-grown larva, with its protective capsule, develops a perfect passion for going through small holes. If water containing such larvæ is filtered through ordinary filter-paper most of them are found in the filtrate. I do not think anyone has ever determined what happens if adult worms are swallowed. Their fate is of no practical importance. The fact that eggs and young larvæ are not infective is, however, most significant, since it means that the fæces of an infected person do not become infective till after the lapse of at least four days, and an individual cannot re-infect himself by immediate contamination as appears to occur with oxyuris.

### DURATION OF INFECTIVITY.

The time-relations of the various stages of development require some notice. From the fresh egg to the full-grown larva may take as little as four days or as long as a couple of months, according to circumstances, the chief factor being temperature. The full-grown encapsuled larva has a moderate natural death-rate when kept under artificial conditions in the laboratory, but out of a good brew a great many are alive at the end of 12 or 15 months, as Looss, Oliver,[10] and I have found, and I daresay would survive a good deal longer. It is a fair assumption that in nature they may live two or three years. This is the less remarkable when we consider that they do not grow or reproduce themselves, and hence have a low metabolism and require very little food. From the time when adult larvæ get into the body till eggs can be found in the stool varies between six and ten weeks,[11] and seems to be the same whether the larvæ are swallowed or get in through the skin. Lambinet[12] showed with dogs that the period was the same whether the larvæ of the dog ankylostoma (*A. caninum*) were applied to the skin, injected subcutaneously, or swallowed.

The duration of life of the adult worm is, no doubt, liable to much variation. In countries infested with the disease opportunities for reinfection are so numerous that it is difficult to obtain satisfactory data. It must also be remembered that recovery from ankylostomiasis by no means necessarily means that the individual is no longer infected. In Cornwall circumstances are better arranged, for there is no chance of reinfection unless the underground workings of the mines are visited. A good many men, after becoming ill with the disease, have abandoned mining altogether. In three such cases we found eggs in the fæces six, four, and four years respectively after the last possible exposure to infection; two of the men were quite well, one was still anæmic. In a good many cases the worms die out in a year or two, or, at any rate, become so few in number that ordinary routine examination fails to find any eggs in the fæces. The recent observations of Bruns, to which I shall refer later, show that the difficulties of accurate diagnosis under these circumstances are considerable. Stiles[13] examined children in the Charleston Orphan Asylum, where infection could almost certainly be excluded, and found that three were still infected after six years' residence. Ashford,[14] in Porto Rico, in a similar institution found, among 45 girls, four who were infected after four years.

Taking the whole saprophytic and parasitic cycle together, the time from the first infection of one individual to the establishment of an infection derived from him in a second person may vary from seven weeks to at least six years. The recipient of infection does not himself become infective for about seven weeks. An infected place may become infective four days after eggs have been deposited there, and may remain infective for at least a year.

[10] THE LANCET, vol. i., 1910, p. 356.

[11] Looss, 71 days; Pieri, 70 days; Smith, 45 days; Bruns, 46 and 53 days; Boycott, 50 and 55 days.

[12] Bulletin de l'Académie Royale de Médecine de Belgique, Jan. 28th, 1905.

[13] Public Health and Marine Hospital Service, U.S.A., Bulletin 10, 1903, p. 58.

[14] Anæmia in Porto Rico, 1904, p. 51.

### THE TWO CAUSATIVE ORGANISMS.

From the parasitological point of view, the specificity of the causative organism constitutes an integral part of the conception of the individuality of an infective disease; the medical mind pays attention rather to the congeries of symptoms; while to the epidemiological sense the circumstances which condition prevalence in place and time more particularly appeal. The classification and nomenclature of diseases must necessarily vary with the particular trend of the systematist concerned; the real difficulty obviously begins when a compromise has to be made between the different principles which I have indicated without diverting an undue amount of time and trouble into the barren fields of terminology. With complete knowledge the parasitologist, the physician, and the epidemiologist will, no doubt, all find their lines of thought in harmony, but meanwhile one has to recognise that there is some inconsistency in having one disease, ankylostomiasis, which may be caused by either or both of two parasites which are specifically or, as some would have it, even generically distinct. In 1902 Ashford and Stiles showed that most of the ankylostomiasis in the southern regions of the United States and in Porto Rico was not due to *Ankylostoma duodenale*, but to a hitherto unrecognised species, *Ankylostoma* (*Necator*, *Uncinaria*) *americanum*. *A. americanum* is distinct enough from *A. duodenale*: the worms themselves are smaller, the eggs rather longer and narrower, the mouth has no recurved hooks, and the genital armature of the male is different. Since its original discovery it has been found in all parts of the world. If sufficient search were made it is pretty certain that both species would be found everywhere that ankylostomiasis is prevalent. On general grounds one would surmise that in any given locality one of the two species is probably autochthonous, and that the other has been introduced. *A. americanum* has not been identified in Cornwall, probably because comparatively few adult worms have been collected for detailed examination. Where both species are abundant individuals are often doubly infected; thus in Panama Whipple,[15] in 273 necropsies, found 39 with *A. duodenale* alone, 49 with *A. americanum* alone, and 25 with both. As far as is known, there is no clinical variation in cases of ankylostomiasis which can be correlated with the causative species of parasite. It is possible that the extraordinary divergence of the experience of different observers on certain points—the presence and abundance of blood in the stools, the relative efficacy of various anthelmintics, and so on—would be explained by taking into consideration this question of species. So far, however, no one seems to have started from the point of view that duodenaliasis should be distinguished from americaniasis. The term uncinariasis which is in use in America was born of the zoological passion for antiquarian research; it does not signify a specific infection with *Uncinaria americana*, but is synonymous with ankylostomiasis. In passing, one can only express one's relief that no organised attempt has been made to apply the law of priority to the nomenclature of disease.

Both species are restricted to man and probably the higher apes; experimental infections have been achieved occasionally in monkeys, and, as far as the earlier stages are concerned, in dogs and guinea-pigs. Other animals have ankylostomes of their own; dogs, cattle, sheep, seals have each their own species, none of which are naturally infective for man. Other parasitic nematodes (strongyles), which are widely distributed in domestic and other animals, have eggs which on casual inspection resemble those of ankylostoma; hence the notion that man might contract the infection from horses, and the statement lately printed in a reputable journal that the human parasite occurs in hens and other domestic animals.[16]

### THE SYMPTOMS OF ANKYLOSTOMA INFECTION AND ANKYLOSTOMIASIS.

The skin symptoms associated with ankylostoma infection are of two kinds. 1. Resulting from the irritation caused by the larvæ penetrating the skin, there may be a local erythema or urticaria, varying greatly in severity in different cases, and often, from secondary infections, going on to pustules and furuncles. It may be that the organisms causing these secondary infections—in the cases I have examined they were

[15] American Journal of the Medical Sciences, vol. cxxxviii. (1909), p. 40.

[16] Journal of Tropical Medicine, vol. xii., 1909, p. 333.

staphylococci—are actually carried into the subcutaneous tissues on the larvæ; this is the less probable if, as is stated, the larvæ leave their outer skins behind them when they penetrate the hair follicles. 2. At any time after infection, sometimes months or years after the subject has been removed from any chance of a fresh invasion, attacks of generalised urticaria may occur, as with hydatids and *Filaria medinensis;* in other cases a general pruritus, without any local changes, causes a good deal of trouble.

During the first few weeks after infection there may be a slight bronchial catarrh and trivial pains in the upper part of the abdomen which bear no relation to the taking of food. These symptoms are no doubt due to the worms passing through the lungs in the course of their development, and to the irritation which they cause when they first reach the bowel. Manouvriez, describing the anæmia of coal-miners in France in 1878 without any idea that it was a parasitic disease, draws attention to the regular occurrence of urticaria and boils, and notes that a bad attack is generally accompanied by bronchitis (*catarrhe des gourmes*). Leathes also noticed a slight catarrh soon after his experimental infection.

These symptoms in the skin, lungs, and bowels may be very slight and may easily escape notice, so that an infection may readily become established without attracting the recipient's attention. In a certain number of cases, however, the individual becomes anæmic, and the severe symptoms which constitute the disease ankylostomiasis supervene. Various writers have described symptoms in ankylostomiasis which are not due to the anæmia, but represent, in their opinion, a direct toxic action of some product of the worm on the economy. Siccardi [17] has recently strongly urged that some such explanation is required for the occurrence of nervous symptoms (easy cerebral and muscular fatigue, apathy, melancholia, amblyopia with a central scotoma) in infected persons who are not anæmic. As a rule, however, these symptoms are not prominent, and are overshadowed by the dyspnœa, dyspepsia, and general upset of all the organs of the body, which may reasonably be ascribed to the anæmia. That a toxic substance is absorbed into the body is, however, clearly shown by the occurrence of urticaria and by the almost constant response of the eosinophile leucocytes in the bone marrow.

The incidence of anæmia in infected persons appears to be determined by three factors—individual susceptibility, dose of infection, and frequency of infection. It is significant that the proportion of infected persons who are anæmic is in general parallel with the proportion of the whole population who are infected, especially in the sense that severe anæmia is seldom found unless the infection is very prevalent. Thus in Cornwall, in Dolcoath Mine, 95 per cent. of all underground hands were infected, and about 5 per cent. of those infected were ill to a material degree; in Grenville 15 per cent. and in Tincroft mine 10 per cent. were infected, and there was only a single case of illness in 800 men. In the Belgian coalfield 4 per cent. of the men are now infected, and cases of severe anæmia are unknown. In Porto Rico, on the other hand, where the whole agricultural population was infected, about half had less than 50 per cent. hæmoglobin, and suffered from a severe grade of the disease.

If, then, the prevalence of infection is slight, the incidence and severity of illness will be correspondingly low.[18] This relation does not necessarily hold for bacterial infection, where the infective agent can multiply inside the body. With ankylostoma this, of course, does not occur, and the evident connexion between prevalence and severity points clearly to the quantity of infection being an important factor in determining illness and correspondingly reduces the significance of individual susceptibility. Abundant contact with larvæ means, as a rule, that most people will be infected, that the proportion who receive large doses will be considerable, and that frequent reinfection will occur. It is difficult to separate the two last factors, for each reinfection swells the total number of worms in the body. There are, however, certain facts which indicate that the same total of worms will be more effective in causing anæmia if it be taken in divided doses rather than in a single massive infection.

It has been frequently observed—and in Cornwall the evidence is particularly clear—that if an anæmic person is removed from the infected place he often rapidly improves, and may recover completely without any specific treatment. Some natural decrease in the number of worms must go on, but at least as many may still remain when the anæmia has disappeared as are found in anæmic individuals who are constantly exposed to reinfection. This suggests that the maximum effect of infection is exerted soon after the worms reach the intestine, and that subsequently, as far as that particular batch is concerned, the host becomes relatively immune. Further, that frequent reinfection is a potent factor in producing the more severe grades of anæmia, apart from the contributions which are in this way made to the total mass of infection.

Of individual susceptibility we only know that some individuals do not become ill, though they harbour many worms and are exposed to infection and reinfection equally with very sick persons. As regards the supposed racial immunity of negroes, the exact observations of Ashford [19] suggest that the blacks, with an equal dose of worms, are as susceptible to anæmia as others, but that under the same circumstances of exposure they do not become so heavily infected. If the influence of variations in habits can be excluded, this indicates a resistance to infection rather than a resistance to the consequences, a relative immunity to the parasite and not to its poisons. There is, however, no definite evidence that anybody is definitely resistant to infection in the sense that ankylostoma will not live in him. With free exposure to larvæ, in only 2 to 5 per cent. of individuals is infection not discovered; this might easily be accounted for by defective diagnosis.

### THE PATHOLOGY OF ANKYLOSTOMA ANÆMIA.[20]

The anæmia of ankylostomiasis may reach a very severe grade, cases with 15 to 30 per cent. hæmoglobin being common in heavily infected places.[21] Thus, of the 61 cases described in detail in the second report of the Porto Rico Commission, 46 had less than 30 per cent. and 18 less than 20 per cent. hæmoglobin. Estimations of the total quantity of hæmoglobin in the blood show, however, that the percentage content of hæmoglobin does not correspond to the actual deficiency, owing to a considerable increase in the plasma and the total volume of the blood. In the following table are given the results of determinations made by the carbon monoxide method [22] of Haldane and Lorrain Smith on three Cornish cases; for comparison I give the corresponding averages for normal persons (Haldane and Lorrain Smith); for cases of chlorosis, pernicious anæmia, and anæmia from hæmorrhage (Lorrain Smith); and for cases of splenomegalic polycythæmia (Boycott and Douglas). The figures are all corrected for variations in body-weight and are expressed as for a standard individual of 60 kilogrammes.

| — | Hæmoglobin per cent. | Total hæmoglobin: grammes.* | Blood volume cubic centimetres. | Relative number of red cells in whole blood. |
|---|---|---|---|---|
| Normal ... ... ... ... | 100 | 400 | 3000 | 100 |
| Ankylostoma No. 1 ... | 44 | 311 | 5160 | 102 |
| ,, No. 2 ... | 47 | 357 | 5520 | 106 |
| | 41 | 331 | 5880 | |
| ,, No. 3 ... | 49 | 316 | 4620 | 128 |
| Chlorosis ... ... ... | 40 | 354 | 6480 | 173 |
| Pernicious anæmia ... | 26 | 179 | 5160 | 32 |
| Anæmia from hæmorrhage ... ... ... ... | 33 | 175 | 3900 | 73 |
| Polycythæmia ... ... | 162 | 1360 | 6000 | 400 |

* The assumption is made that 1·34 cubic centimetres of oxygen combine with 1 gramme hæmoglobin; the actual determinations are made in terms of oxygen capacity.

[17] Archives de Parasitologie, vol. xiii., 1910, p. 555.

[18] There are, of course, exceptions.

[19] Anæmia in Porto Rico, 1905, p. 10.

[20] Anæmia denotes a deficiency in the concentration (not the total quantity) of hæmoglobin in the blood.

[21] Records as low as 9 or 10 per cent. hæmoglobin are suspicious; the Fleischl instrument reads too low at the bottom of the scale. The worst case we had in Cornwall had 17 per cent. on the Haldane-Gowers hæmoglobinometer.

[22] The experimental proof that this method gives substantially correct results will be found in the Journal of Physiology, vol. xxxiii., 1906, p. 493, and the Journal of Pathology, vol. xiii., 1909, p. 256.

On the whole, therefore, in ankylostoma anæmia there is comparatively little shortage of hæmoglobin, nearly the whole of the anæmia being due to an increase in plasma. The condition, indeed, is a hydræmic plethora like chlorosis, and quite different from pernicious anæmia and anæmia from hæmorrhage, in which there is a more or less grave defect in the total quantity of hæmoglobin in the blood.

The colour index is characteristically low, and becomes lower as the grade of anæmia becomes more intense. Hence the total number of red cells in the body may be greater than normal. In a case of moderate severity—40 per cent. hæmoglobin—the morphological changes in the red cells are very few. There is some variation in size, most of the abnormal cells being too small, and a little poikilocytosis, but one does not find any marked signs of active regeneration of red cells (polychromasia, punctate basophilia, nucleated red cells), presumably because the whole blood contains about as much hæmoglobin as, and actually more red cells than, normal. In severe cases such changes appear in varying degrees, because, with a great increase of plasma, the rate of circulation cannot be sufficiently accelerated to carry an adequate quantity of hæmoglobin through the lungs in unit time. In all these particulars there is a great similarity to chlorosis, and a sharp contrast with pernicious anæmia. Occasionally in ankylostomiasis, as in anæmia from malaria and malignant disease, blood formation becomes more embryonic, and large cells with a high colour index are found.

In the relation of symptoms to the degree of anæmia there is a further similarity between these two states of hydræmic plethora. It is characteristic, and has been noted by Ashford and others, that in ankylostomiasis a pretty severe degree of anæmia may be associated with a surprising capacity for work. Thus in Cornwall men with less than 40 per cent. hæmoglobin were doing their regular work in the mine, and of men with between 40 per cent. and 50 per cent. hæmoglobin our notes record "feels quite well," "no symptoms," though their occupation entails a great deal of muscular effort. In the same way a chlorotic anæmic to the same degree will be fairly active, while cases of pernicious anæmia are obviously very sick people by the time their hæmoglobin has fallen to 40 per cent.

### SOME THEORIES AS TO THE CAUSE OF THE ANÆMIA.

As already noted, our cases of ankylostomiasis had a real deficiency of hæmoglobin amounting to about 15 per cent. Without further information it is not possible to say whether this is due to the fact that they were working men, and on the whole decidedly less well nourished than the laboratory workers who furnished the "normal" data,[23] or whether there is actually some loss of blood from, or destruction of blood within, the body, which would account for a deficiency of this degree. Most observers have assumed that the blood volume is unaltered, so that the concentration of hæmoglobin in the blood is a measure of the total quantity; in other words, that a patient with 20 per cent. on the scale of the hæmoglobinometer has only one-fifth of the normal amount of hæmoglobin in his whole blood. They have therefore sought for reasons why so much blood should disappear.

The original idea was that the worms themselves suck blood.[24] This they undoubtedly do, for blood may be found in their alimentary canal, though, as a rule, in only a proportion of the worms obtained by the action of anthelmintics or post mortem. It is, however, not certain that this represents the natural condition. Whipple has pointed out that the worms may be observed to void blood, and it is possible that the empty individuals are to be accounted for in this way. Looss is of opinion that the normal food of ankylostoma is the mucous membrane, and that they only take in blood accidentally when they happen to penetrate a vessel. They do not seem to make much headway in digesting red corpuscles; on the other hand, it may be chiefly plasma that they are after. Many observers have expressed a natural hesitation in believing that such severe anæmia can result from the abstraction of such small amounts of blood; for, whether the worms digest it or not, the quantity must be small, else blood, or remains of blood, would be constantly present in the stools.

Actual enumeration shows more bites than correspond to the number of worms found post mortem. It has therefore been suggested that the worms often let go their hold on the wall of the bowel to take a fresh grip elsewhere, and that their old bites continue to bleed. In support of this hypothesis Loeb and Smith[25] found that extracts of the head-end of the worm inhibit coagulation of the blood, as also did Noc.[26] If this accounted for the anæmia, the stools ought to contain obvious quantities of blood. Sometimes they do, as may occur in any severe anæmia, and with massive infections with ankylostoma produced experimentally in dogs (Looss), but in the majority of cases blood is very seldom found.

Others have sought to show that blood is destroyed inside the body, and in this connexion have described the occurrence of hæmolytic substances in the bodies of the worms. Weinberg[27] found a hæmolysin in the allied nematode of the horse (*Sclerostomum equinum*), Preti,[28] Noc, Alessandrini,[29] and Calmette and Breton various similar substances in *A. duodenale* and *A. americanum*. Noc and Blasi[30] describe isohæmolysins in the serum. Loeb and Smith found no hæmolysin, but Whipple[31] found a very weak hæmolysin in *A. duodenale*, *americanum*, and *caninum*. Whipple thinks, however, that it is very unlikely that this weak hæmolysin can have any relation to the anæmia of ankylostomiasis. He points out that extracts of trichocephalus may be equally hæmolytic; cases of trichocephalus anæmia have been described,[32] but their etiological connexion with this common parasite is extremely doubtful. Whipple also found that ankylostoma may be embedded in the mucous membrane of the human intestine in small cysts filled with blood, and that this blood is not hæmolysed—almost conclusive proof of his contention that such hæmolysins as are present are quite negligible.

Even if hæmolysins were present in large amounts they could not be regarded as being the cause of the anæmia unless evidence of actual hæmolysis in the body were obtained. No such evidence exists. The amount of iron in the liver is normal[33] instead of being much increased, as it is when excessive destruction of red cells occurs (pernicious anæmia, malaria); and determinations of the total amount of hæmoglobin in the blood show that only about one-tenth is missing altogether; this might easily be accounted for by the small amount lost by the sucking of the worms and the bleeding of their bites.

A certain number of cases when quickly improving show some degree of polycythæmia, the red cells rising to between 6 and 7 millions per cubic millimetre.[34] This is clearly the same phenomenon as is well known in chlorosis, and is due to a rapid concentration of blood containing in all too many red cells of a low colour index. Weinberg and Leger[35] are, however, ingenious enough to see in it an indication of the effect of repeated small doses of hæmolysin, which, as Cantacuzène[36] showed, may stimulate the marrow.

A good number of worms acting for some time can cause ultimately a marked degree of sclerosis of the intestine, with atrophy of the mucous membrane. It is difficult to see how this can have much to do with producing the anæmia, though the probability of some impairment of nutrition and delay in recovering from the effects of the anæmia must be considered.

The essential change in the blood, therefore, is an increase in plasma, with a secondary, compensatory reduction in the colour index. There is probably also a small defect in the total amount of hæmoglobin, which may be attributed to the local action of the worms in the bowel. The response to this loss may be imperfect owing to the prolonged oxygen starvation of the marrow itself.

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[23] L. Smith's observations on a few hospital patients not suffering from anæmia support this interpretation (Transactions of the Pathological Society of London, vol. li., 1900, p. 311).

[24] Cf. "The Vampire of the South," by Marian Hamilton Carter, McClure's Magazine, vol. xxxiii., 1909, p. 617.

[25] Proceedings of the Pathological Society of Philadelphia, vol. xxx., 1904, p. 173. Centralblatt für Bakteriologie, Orig., Band xl., 1906, p. 740.

[26] Annales de l'Institut Pasteur, vol. xxii., 1908, pp. 896, 955.

[27] Ibid., vol. xxi., 1907, p. 798.

[28] Münchener Medizinische Wochenschrift, Band lv., 1908, p. 436.

[29] Il Policlinico, vol. xi., 1905, p. 541.

[30] Annali d'Igiene Sperimentale, vol. ix., 1909, p. 449.

[31] Journal of Experimental Medicine, vol. xi., 1909, p. 331.

[32] Deutsche Medizinische Wochenschrift, 1902, p. 468; 1905, p. 95.

[33] Rake: Journal of Pathology, vol. iii., 1896, p. 107. Hopkins: Guy's Hospital Reports, vol. l., 1894, p. 349. Ryffel: Journal of Pathology, vol. xiv., 1910, p. 411.

[34] See, e.g., the cases in the appendix to Anæmia in Porto Rico, 1904.

[35] Bulletin de la Société de Pathologie Exotique, vol. i., 1908, p. 229.

[36] Annales de l'Institut Pasteur, vol. xiv., 1900, p. 378.

ABSTRACT OF

# The Hunterian Lectures

ON

# THE ANTHROPOLOGY OF ANCIENT BRITISH RACES.[1]

*Delivered before the Royal College of Surgeons of England on Feb. 20th, 22nd, 24th, and 27th, and March 1st and 3rd, 1911,*

BY ARTHUR KEITH, M.D. ABERD., F.R.C.S. ENG.,

CONSERVATOR OF MUSEUM, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

## THE ANTIQUITY OF MODERN MAN.

IN a series of six Hunterian lectures on the above subject, given recently in the theatre of the Royal College of Surgeons, Professor Keith described the human remains found in the Upper (100 feet) gravel terrace of the Thames Valley at Galley Hill, near Northfleet. The remains, which are now in the collection of Mr. Frank Corner, M.R.C.S., were found by the late Mr. Robert Elliott towards the end of 1888, and although at first there was a considerable number of geologists who refused to regard these remains as equal to the 100 feet terrace in point of time, yet a fuller consideration of the evidence produced by Mr. E. T. Newton, F.R.S., had recently convinced experts both at home and abroad that these remains were embedded when the level of the Thames was 90 to 100 feet higher than it is to-day. The antiquity of the Galley Hill man must be measured by the work done by the Thames since that time. The river has not only worn its estuarine valley down 90 to 100 feet owing to an elevation of the land, but in the opinion of experts has also eroded and filled up a channel from 40 to 50 feet below its present level. Measured at its lowest estimate, the Thames bed has been lowered and raised at least 170 feet since the Upper terrace of gravel was laid down in post-Glacial times. Seeing how little the level and aspect of the valley have altered since the Roman period, and that there is no reason to presume that changes in level and in climate occurred at faster rate in past times than in the present, one may safely allow a period of 1000 years for every foot which the river has worn away or laid down. On this basis of computation the antiquity of the Galley Hill remains may be estimated at 170,000 years—probably an under-estimate.

A consideration of the parts of the skeleton found at Galley Hill shows how old the modern type of man is. The Galley Hill man, although differing in several features, is essentially the same in structure and form as the man of to-day. He was a little over 5 feet in height, round-chested and narrow-shouldered, with a well-developed muscular system. His brain development may be estimated from the stone implements found in the Upper terrace gravel, from the size of his cranial cavity—1360 cubic centimetres, a fair endowment when his small size is kept in view—and from a cast of that cavity which reveals a highly convoluted brain showing all the essential features of the modern brain. From the moulding of the lower jaw we may safely infer that speech was developed; his teeth and muscles of mastication do not differ markedly from later men of the Neolithic period. His face was short and his forehead of a type quite common amongst modern men. His peculiar features are the extreme length and narrowness of the head (the width is about 67 per cent. of the length), the shape of the upper and lower extremities of the thigh bones, and the shortness of the leg bones.

The Galley Hill man is the only representative known of the thousands of generations of Englishmen which span the vast period of human life in this country from Glacial to Neolithic times. We may safely presume, said the lecturer, that the relatively long-headed men of Neolithic times and similar modern types still to be found amongst the inhabitants of the western parts of Great Britain and Ireland are directly related to Palæolithic man. How far the single individual found at Galley Hill represents the type of man prevalent in palæolithic England remains to be seen, but the discovery last year in France by Herr O. Hauser of a man of similar type in a stratum which overlies that in which the Neanderthal race is found, shows the existence of the same type of man on the continent during the long Palæolithic period. Similar discoveries have been made in Belgium, Bohemia, and Moravia, and it is reasonable to conclude that the Galley Hill type was widely spread in Europe during the Palæolithic period.

[1] Illustrated by the Museum collection of the Royal College of Surgeons of England.

## PRE-GLACIAL MAN.

Professor Keith reminded his audience that the Galley Hill bones, by far the earliest known human remains yet found in England, took one only a little way back in the most recent chapter of the earth's history. The period of the Galley Hill man was certainly post-Glacial. Until a little over three years ago we knew nothing of the pre-Glacial ancestors of man in Europe, but in 1907 a lower jaw of a human being was discovered in a stratum which geologists regard as a formation laid down by a river before the first Glacial period had settled on Europe. The sandpit in which the mandible was discovered is situated in Baden, in the valley of the tributary of the Neckar, some eight miles from Heidelberg. Professor Keith said that great credit was due to Dr. Otto Schoetensack, professor of anthropology in the University of Heidelberg, for the splendid monograph which has been published concerning this remarkable "find." The importance of the Heidelberg "find" lies in the fact that for the first time it is possible to form a conception of the stage of evolution reached by man in Europe after the Pliocene period had closed and before the Glacial period had set in. The teeth do not differ to any great degree in size and shape from those of the more primitive races of modern time. The rotatory or side-to-side movement of the teeth, which distinguished man from all known anthropoids, was already evolved; the canine tooth had taken its place in the uniform human dental series. The long framework of the jaw is so massive that at first sight it appears more anthropoid than human. It is clear that the muscles of mastication were developed to an extent far beyond that known in any other human race, and it may be safely inferred that, whatever the nature of the food consumed may have been, great muscular force was necessary for its pulverisation. The lower jaw takes an important part in the mechanism of speech; certain characters of the modern jaw are regarded as adaptations to a faculty which distinguishes man from all other beings. These speech characters in the Heidelberg jaw are of an intermediate nature; they appear to represent a stage in the evolution of the human chin as we know it from a simian condition. The parts appear ill adapted for speech, and at the most only a primitive stage in the evolution of language could have heen reached.

The remains of the individual (*Pithecanthropus erectus*) found in Java 20 years ago by Dr. Eugene Dubois, now professor of anthropology in the University of Amsterdam, correspond in point of time—so far as time can be determined by the fossil plants and animals found with the remains—to the Heidelberg remains. It would be of great interest to compare these two individuals—so far apart in space and yet associated in point of time—but unfortunately we know nothing of the mandible of Pithecanthropus erectus and nothing of the skull of Homo Heidelbergensis. In Pithecanthropus the femur is not unlike the modern human thigh bone; it has all the characters associated with erect posture. Professor Dubois estimated the brain to be intermediate in point of size to the modern human and anthropoid brain. The only point which offers a standard for the comparison of the pre-Glacial man of Java with the Heidelberg remains is the last molar teeth. We know the character of the last upper molar of Pithecanthropus and the last lower molar of the Heidelberg man. In point of size the two are comparable; the system of mastication was certainly the same in both and the palate of the one was probably not very different from that of the other. The Heidelberg, however, seems too massive and large to be fitted to the calvarium of Pithecanthropus. These two individuals from Germany and Java represent all that is yet known of the pre-Glacial ancestors of man.

## THE NEANDERTHAL RACE.

Professor Keith described the progress which had been made during the last four years in our knowledge of the Neanderthal race. The researches of archæologists and

anthropologists in the south-western districts of France—especially along the valley of the Dordogne—were making good the blank in our knowledge of man in Europe during the Glacial and post-Glacial periods. The Neanderthal race was clearly the successor and probably direct descendant of pre-Glacial man, so far as may be judged from the scanty remains of that human type found in Heidelberg and Java. Notwithstanding the recent discovery of three individuals of the Neanderthal race in the valley of the Dordogne during the last four years, the cranium brought from Gibraltar in 1864 by the late Mr. George Busk, F.R.S., at one time President of the Royal College of Surgeons of England, and now lodged in the Museum of the College, still remains the most valuable document relating to the physical characters of the race, for in no other specimen are the bones of the face and floor of the cranial cavity so perfectly preserved, and none show so close a relationship to the known characters of pre-Glacial man. The Gibraltar specimen has had a chequered history; quite recently Colonel R. E. Kenyon discovered in the minutes of the Gibraltar Scientific Society that the skull was found and presented to the society by its secretary, Lieutenant Flint, R.A., in 1848, eight years before the Neanderthal calvarium was discovered in South Germany. It was seen and examined by Huxley, who, although he had just completed his famous memoir on the Neanderthal calvarium, did not fully recognise its important bearing on the early physical history of man. The French anthropologists MM. Quatrefages and Hamy assigned the Gibraltar specimen to the Neanderthal race in 1885, and then it passed into obscurity until 1908, when Professor Sollas of Oxford University recognised its importance and again drew the attention of European anthropologists to it by an elaborate and accurate description in the Philosophical Transactions. It is now very clearly recognised, said the lecturer, that although it was a very easy matter to recognise the sex of the living person from the features of the face and head, it was not unfrequently impossible to determine sex from an examination of the skull. So far all the crania of the Neanderthal race discovered have been assigned to the male sex; Professor Sollas came to the conclusion that the Gibraltar specimen represented a female of that race. The question of sex as regards the Gibraltar specimen must be left open, for its peculiar features may be explained by supposing it to belong to an earlier and more primitive human type than the Neanderthal race. While the cranial capacity, which may be taken as an index of size of brain, is above the average of modern man in the typical members of the Neanderthal race, that of the Gibraltar individual is much below—about one-fifth less. The nose of the Gibraltar individual must have formed a remarkable feature, quite unlike any form now known to exist, but very probably the precursor of the prominent nose of the modern European. In some features, especially in the region of the face between and below the eyes, the condition in the gorilla was recalled. Recently Colonel Willoughby Verner had presented a thigh-bone to the Museum of the Royal College of Surgeons of England which he discovered in a cave previously unexplored in the neighbourhood of Gibraltar. This bone, that of a person almost a pygmy in stature, was quite unlike any human thigh-bone now known and indicated a peculiar race. From the bones of other animals found with it a degree of considerable antiquity may be presumed for this recent discovery.

### THE EVOLUTION OF THE MODERN TYPE OF MAN.

Professor Keith analysed the various factors that appeared to have played a part in the evolution of the modern type of man. The characters of the Neanderthal man—the successor of the pre-Glacial European—were such that there could be no doubt, in spite of the largeness of his brain, that he was more simian or primitive in the scale of evolution than any other known form, past or present, with the exception of his predecessor, pre-Glacial man. A little over a year ago Herr O. Hauser discovered in the lower Aurignac stratum of the valley of the Dordogne, the stratum which immediately overlies the Mousterian beds in which the remains of the Neanderthal race are found, the skeleton of a man of the modern type and closely related in feature and stature to the Galley Hill remains, the oldest yet found in England. The modern type appears, from this discovery, to follow quickly on the heels of the Neanderthal type. To account for the sudden appearance of the new type Professor Klaatsch of Breslau, who has made a very minute examination of the skeleton lately found in France, has formulated the theory that man may have been evolved on several occasions and from different stocks. The Neanderthal race, because of certain gorilla-like features, he regards as having sprung from the same stock as that anthropoid, while the Galley Hill or modern type has been evolved from the basal stock of another anthropoid—the orang. In the lecturer's opinion Professor Klaatsch's theory was untenable, and the explanation was to be obtained from another source. In 1885 Dr. Pierre Marie, the well-known Parisian physician, described a peculiar disease of growth which he named acromegaly—a disease in which various parts of the adult body begin to grow, especially certain parts of the face and head, but all the bones, muscles, and soft parts are increased in bulk, especially those of the hands and feet. The parts which are chiefly affected in the unfortunate victims of this disease are those which obtain such a remarkable development in Neanderthal man. It is further known that the condition of acromegaly is connected with a disturbance in the functions of the pituitary gland. The evidence now accumulating suggests that this gland furnishes the tissues of the body with a substance (internal secretion) which so sensitises them that they hypertrophy when subjected to a degree of exercise which would not affect the normal tissues of the body. In anthropoids—in the most primitive races of man—this pituitary influence was evidently very marked. The explanation of the problem relating to the evolution of the modern from the Neanderthal type of man was most likely to be found in a more complete knowledge of the exact part played by the internal secretions of the pituitary and other glands with the growth of the body. On the evidence available we are justified in assuming that the evolution of the modern type of man was consequent on a change in the function of the pituitary gland. No doubt the amelioration of the conditions of life which arose with the dawn of human knowledge had also played a part in the evolution of the modern type, but the exact manner in which environment influences heredity is still obscure.

### PREHISTORIC BRITISH TYPES OF MAN.

With the steady increase of evidence the antiquity of man in Britain receded into a more and more remote past. No fossil remains of Glacial or of pre-Glacial man had yet been discovered in England, but it is certain from the stone implements left behind that at least the southern part of the country was inhabited. It is highly probable that fossil remains of this race will yet be found, and will show that these very early Britons were of the Neanderthal type. At present our knowledge of the physical characters of the inhabitants of Britain commences with the Galley Hill man from the Upper terrace of the Thames Valley. The subsequent period is a long blank, but the cranium found by Mr. W. M. Newton in a gravel pit near Dartford in 1902 may prove to have an antiquity represented by the Lower terrace of the Thames Valley. The geological evidence relating to this skull, which the discoverer has presented to the Museum of the College, is open to question until further discoveries of a similar nature are made. The Dartford cranium is of the Cromagnon type; it is known from the discoveries made in the caves (Grimaldi) near Monaco and in those of the Dordogne Valley in France that the Cromagnon race succeeded the Galley Hill race; it is possible that this may also be found to be the case in England. If the Dartford skull be excluded from the list of authentic documents, then the remains which succeed those of Galley Hill in antiquity are the human bones found during the excavation to form the Tilbury Docks in 1883 and which were fully investigated and described by Sir Richard Owen and are now preserved in the British Museum (Natural History), South Kensington. The remains of the Tilbury individual were found at a depth of 34 feet under alternate layers of mud, clay, and peat which had been formed during the slow subsidence of the river bed since these human remains were imbedded in the sands. The remains lie over a gravel bed situated 130 feet below the terrace in which the Galley Hill man was found. If, as a working hypothesis, a subsidence of a foot for each 1000 years be allowed, and the rate may be less, an antiquity of 30,000 years may be assigned to the Tilbury remains. The importance of the

Tilbury discovery lies in the fact that in size and form of head this individual may be accepted as a type which is still prevalent in the modern population of England. In 1862 Huxley distinguished a form of prehistoric English skull and gave to it the name "River-bed type." The specimens he selected to represent this type are in the collection of the Royal College of Surgeons, one being found in the alluvium of the Trent Valley, near Muskham, the other in a tumulus in Anglesey. The Tilbury skull also belongs to this type. Four other crania in the Museum of the College, found in circumstances which point to a great antiquity, are also of this type. A cranium of similar form was discovered by the Rev. E. H. Mullins, rector of Langwith-Bassett, Derbyshire, two years ago in a limestone cave, with remains of the reindeer and other forms of mammals now extinct in England. The cranium found in Gough's Cavern, Cheddar, was apparently also of this type, but the lecturer had not examined this specimen. The same type was found recently by Mr. Neil Baynes, F.S.A., in a tumulus of Anglesey, and it was evident from measurements made by Mr. Baynes on the heads of living inhabitants of that part of Wales that the River-bed type of man was still prevalent there. In the lecturer's opinion this ancient British type, in spite of many invasions, still formed the foundation of the modern population of England.

Professor Keith exhibited and described an almost complete skeleton of a man discovered last year by Mr. S. Hazzledine Warren, F.G.S., in a prehistoric (Neolithic) stratum which is being exposed by the sea on the coast of Essex, north of Walton-on-Naze. An antiquity of at least 4000 years can be assigned to this Englishman. He was a finely made young man, with a stature of 5 feet 2 inches, sharp prominent nose, finely moulded face, head, hands, and feet, and presented very distinct evidence of a specialisation in the right arm, pointing to a trade. His teeth were worn flat and met edge to edge as in pre-historic races. He evidently died in the autumn, for within the skeleton Mr. Warren detected over a pint of seeds of the blackberry and dog-rose, indicating the form of diet then available.

The lecturer also exhibited and described briefly the human remains which had lately been found during the systematic excavation of the rude stone monument at Coldrum, Kent. These excavations were carried out, with the permission of the Lord of the Manor, by Mr. F. J. Bennett, F.G.S., of West Malling, who has done so much to encourage archæological research in the central parts of Kent. Mr. Bennett found, during excavation of the stone chamber in the central part of the monument, remains of the skulls of ten individuals, with other bones, which included parts of about ten other persons, so that altogether apparently about a score of people had been buried there, many of them women and children. Unfortunately nothing was found during the excavation which permits a date or period to be assigned to the remains. If the remains found are the builders of the megalithic monuments of Kent, then these builders were people of medium stature, with heads in which the length was relatively great to the breadth. The metallic resonance of the bones found on the lower platform during the excavation points to a considerable antiquity for these remains. Further excavation by Mr. Bennett, which is much to be desired, may reveal more conclusive evidence as to the relationship between these people buried in the chamber and the builders of the monument.

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SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—The annual meeting of subscribers to the South Devon and East Cornwall Hospital was held on March 6th under the presidency of Mr. Waldorf Astor, M.P. The medical report stated that 1450 in-patients had been admitted during 1910. The out-patients numbered 2522. During the year 363 patients and 85 nurses were sent to the Pearn Convalescent Home, in connexion with the institution. The financial statement showed that the income amounted to £8519 and the expenditure to £10,004. The deficiency at the close of the year was £1485, compared with £2317 at the end of 1909. It was stated that in order to clear the deficit stock to the value of £5146 had been realised, but a legacy of £3000 had been received towards replacing that amount.

# "606" AND SYPHILIS:

## A REPLY TO MR. C. F. MARSHALL'S VIEWS.[1]

BY JAMES McINTOSH, M.D. ABERD.,
GROCERS' RESEARCH SCHOLAR;
AND
PAUL FILDES, M.B., B.C. CANTAB.
(*From the Bacteriological Laboratory of the London Hospital*—DR. W. BULLOCH.)

DURING the few weeks since "606" was put upon the market for general use an undertone of criticism has become manifest in this country. It is suggested that the claims of Ehrlich have not been substantiated, that the drug has been prematurely "boomed," and that it is rapidly finding its level as, at best, a useful auxiliary to mercurial treatment. These views found expression, to some extent tentatively, in a recent trade publication and led the reviewer of THE LANCET to detect therein a certain atmosphere of disappointment.[2] Some weeks ago Mr. Marshall, also, communicated a disparaging paragraph to a medical journal,[3] and after a similar note in another journal,[4] he has now found expression at some length as an original article in the columns of THE LANCET itself. Mr. Marshall arrives at the following conclusions:—

1. In the present state of our knowledge there is no drug which can replace mercury in the treatment of syphilis. 2. Although arseno-benzol causes rapid healing of certain syphilitic lesions, this effect is not constant and is often only temporary. 3. There is no proof that an abortive cure of syphilis can be realised by this drug. 4. If arseno-benzol is indicated at all in the treatment of syphilis, it is chiefly in those cases which are not influenced by mercury, but such cases are rare. Moreover, some cases resist the action of both drugs. 5. The administration of arseno-benzol is attended with many risks and dangers.

Up to the present no protest has appeared against what seems (to us) to be a totally unfounded chorus of disapproval. The matter might be considered to be one of no particular moment were it not for the fact that, in addition to misleading the great mass of the profession outside the vortex, as it were, of these questions, these expressions of disapproval directly reflect upon the veracity or scientific accuracy of those who have previously described the results of the use of "606." Among this latter class we find ourselves.

In April, 1910, Dr. W. Bulloch, bacteriologist to the London Hospital, obtained a supply of "606" from Professor Ehrlich. This material was entrusted to one of us and a series of experiments were carried out with it upon animals infected with syphilis and other diseases with a view to confirming the therapeutic and toxic effects. Some of these results were published in THE LANCET.[5] The complete justification of the claims of the drug in these respects led to its application to human beings on July 19th, 1910. From this date onwards "606" has been administered to a selection of hospital patients suffering from all forms and all degrees of syphilis. The administration has conformed to the repeated instructions of Ehrlich, and all cases have been in the beds of, and under the direct observation of, Dr. J. H. Sequeira, dermatologist to the London Hospital. Extensive and repeated observations have also been carried out in the Bacteriological Laboratory of the London Hospital. Special attention has been paid to the question of permanent cure or relapse, and thus a comparatively small number of cases only has been dealt with and followed. Only one case in our series has escaped continuous observation. We have had, therefore, eight months' experience of "606" on human beings; a similar period has been enjoyed only by a few who also obtained material from Ehrlich for use upon hospital patients. Mr. Marshall is not among these few. His personal experience must, therefore, rest upon any observations he may have made during the last few weeks, or conceivably upon a few cases he may have seen under treatment by the courtesy of others. These considerations lead us to believe that the results obtained at the London Hospital are of greater value than results, if any, obtained by Mr. Marshall.

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[1] See THE LANCET, Feb. 25th, 1911, p. 501.
[2] THE LANCET, Feb. 18th, 1911, p. 448.
[3] Medical Press and Circular, Dec. 14th, 1910.
[4] Brit. Med. Jour., Feb. 18th, 1911, p. 401.
[5] James McIntosh: THE LANCET, Sept. 3rd, 1910, p. 713.

Mr. Marshall probably is not acquainted with our cases, since our publication of them in THE LANCET[6] is now largely out of date; further, we believe that few other observers have as yet appeared in print. Thus, Mr. Marshall's opinions cannot rest upon published observations in this country, and it would have been more fitting if he had published his own evidence or waited for others to have completed their observations before embarking upon very wide conclusions which are entirely at variance with the enormous mass of publications to date, including those of the most celebrated syphilologists.

We propose to deal with Mr. Marshall's generalisations in some detail. At the outset he regrets the manner in which "606" has been introduced. He considers this manner commercial and not in accordance with the ethics of scientific medicine. Mr. Marshall is unaware of the despicable details surrounding this question; if he were, he would not have cast this slur upon the name of the greatest medical investigator of our time. We cannot go into details, but as a fact Ehrlich has distributed free vast quantities of "606" practically throughout the world. His institute was a Mecca for medical men coming from the most distant countries for "606." The place was crowded with personal applicants for "606." The Speyer House was a manufactory of "606" Does Mr. Marshall imagine that the great institute at Frankfort was to permanently lapse into a centre for distributing "606"? Is Behring's antitoxin still supplied free from the place of its origin? However, Mr. Marshall is annoyed that the manufacture has been handed over to a commercial firm. The manner of introduction of "606," however, should not be "naturally calculated to create a strong prejudice against it" when it has been vouched for by such eminent sponsors.

Mr. Marshall asserts that before "606" can replace mercury and iodides in the treatment of syphilis it must be proved capable of (1) aborting the disease, or (2) preventing tertiary or parasyphilitic manifestations, or (3) healing lesions more quickly, more constantly, and with less liability to relapse than is the case with mercury, or (4) it must exhibit fewer dangerous toxic effects. He says, "Let us see whether arsenobenzol has been *proved* [the italics are our own] to fulfil any of these conditions." By a series of remarkable generalisations, unsupported by adequate evidence, he finds that these conditions have not been fulfilled—*ergo*, "606" cannot replace mercury and iodides. He sets up a row of impossible essentials and then demolishes them. How can these things be *proved?* "606" has only been available for about 12 months and is still, in certain particulars, in the experimental stage. It is not *proof* which is looked for but reliable evidence, and this evidence must be obtained by experiment. We have amassed some evidence on these points, and this will be published when our experiments are sufficiently advanced.

Mr. Marshall's first demand relates to abortive cure, which, incidentally, is not what is meant by "*therapia sterilisans magna.*" We note his views on the Wassermann reaction and the perfectly obvious possibilities suggested by Flashman and Butler; we also note his remarks on superinfection, but these things were well known years before Pinard's Thesis of 1910. For our part we have evidence which justifies us in retaining the hope that an abortive cure of syphilis by "606" will be realised.

With regard to the second demand as to the prevention of tertiary and parasyphilitic lesions, we agree that this need not detain us. It is unusual, we believe, for such lesions to occur within two years of the infection, a period much longer than that during which "606" has been available. At any rate, we have not seen any records of these occurrences following a secondary attack cured by "606."

The question next arises as to whether "606" cures syphilitic lesions more rapidly or more constantly than mercury. Mr. Marshall refers to certain photographs. He says it is quite common for such results to be obtained by mercury. We, however, understand from the literature, and in particular from Dr. Sequeira, that such rapid healing as occurs with "606" is not common with mercury. With "606" these results are almost invariable. We have seen no syphilitic lesion, even of the gravest form, which has not healed with great rapidity after "606," except interstitial keratitis and three cases in which, after the syphilitic element had been removed, a second underlying pathological state was found. This is also the same conclusion of most, if not all, competent and apparently unbiassed observers. Relapses, as Mr. Marshall observes, have been reported. We may add that a large number of relapses have been reported; we also have had a large number. We have evidence that these relapses are dependent upon the size or method of application of the dose. Mr. Marshall labours under a singular delusion if he imagines that 0·6 gramme is an average dose. He cannot be aware of the repeated directions of Ehrlich to continually increase the severity of the application. 1·0 to 1·4 grammes of "606" may at present be taken as an average dose. We need hardly add that this amount is not given in one application, but in two or three fractions over a period of three to six days. One or two of these applications must be by the intravenous route. Ehrlich considers, and we follow him, that any much less intense treatment is merely trifling. The lesion may be cured, but many will relapse.

Next, Mr. Marshall states that "in fact" "606" treatment is merely symptomatic and does not touch the "disease itself"; he refers apparently to the spirochæte. Now, this statement of alleged fact is entirely erroneous. "606" has no reference to symptoms—it is purely a parasiticide, and further, by comparative experiments on man or animals, has repeatedly been proved to exert an enormously greater destructive effect than mercury in any form or any dose. In cases of chancre examined by us the organisms have not been detected in the lesion after about 14 hours in the case of intramuscular or subcutaneous injections, or nine hours in the case of intravenous. In animals we have seen a disappearance of spirochætes in seven hours after 0·1 gramme of "606," and in four days after two *human adult* doses of biniodide of mercury intravenously.

Lastly, Mr. Marshall refers to the dangers of "606." Several deaths have occurred; we believe that the number must now reach about 20 or more. Some of these were advanced cases of general paralysis. The result is not surprising. About six also were infants. Death was hastened in these cases during the period of determination of a suitable dose for such infants. These accidents should not occur at the present time. Other deaths have occurred in subjects of organic heart disease or vascular degeneration. Ehrlich has repeatedly urged that such patients should be treated with the greatest care. These deaths are due to a relatively too intense treatment and not necessarily to any particular form of application. Mr. Marshall's statement that the intravenous route is particularly dangerous is not borne out by facts. We call to mind one death only which was directly attributable to this method—a case of embolism of the pulmonary artery. The cause of this embolism was explained and must be guarded against. Alarming symptoms have also arisen from neglect of obvious precautions or distinct recommendations. All these things are to be found in the literature. For our part we have not yet seen any occurrence following an intravenous injection, which would give anyone the slightest alarm, nor, of course, after any other form of application.

Among the possible remoter ill-effects is blindness. Blindness due to optic atrophy after the use of arsenical compounds is notorious, and was a potent factor in inducing Ehrlich to restrict the use of "606" until the occurrence of these accidents could be excluded. They have been excluded; they have not occurred. Relative blindness, however, may occur, but these cases have no direct connexion with "606." They are pure relapses, syphilitic iritis or retinitis, and are no more frequent than, and do not differ from, the inflammatory eye lesions occurring with or without mercury treatment. We have ourselves observed a case.

To sum up, we find that on the evidence the criticisms of Mr. Marshall are unjustified and at variance with the opinions of the vast majority of competent observers. The conclusions relating to "606" which we feel justified in arriving at are:—

1. On the average, if not invariably, "606" is far superior to mercury in the symptomatic treatment of syphilis.

2. It is certain in the earlier stages of syphilis, and probable in the later, that courses of "606," applied at properly ascertained times, will prevent the onset of symptoms with far less inconvenience and effect upon the general health than mercury.

3. "606" will probably be used by the unskilled as

[6] James McIntosh and Paul Fildes: THE LANCET, Dec. 10th, 1910, p. 1684.

subcutaneous or intramuscular injections for the symptomatic treatment of syphilis without danger.

4. The skilled will use intravenous injections in the hope, not without foundation, of realising a *therapia sterilisans magna*.

## OBSERVATIONS ON THE USE OF SALVARSAN IN SYPHILIS.

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IN the course of an investigation into the value of Ehrlich's latest remedy for syphilis, which we have been carrying out at the Military Hospital, Rochester-row, for some months now, some points have occurred which may be of general interest.

Realising its enormous importance to the army should the claims for the effect of "606" on syphilis which were at first advanced be substantiated, we determined to carry out as thorough an investigation as possible for ourselves, and in June last year applied to Herr Geheimrat Professor Ehrlich for some samples of his remedy. Professor Ehrlich very kindly placed a generous supply at our disposal, and we should like to take this opportunity of expressing our appreciation of his kindness in renewing our supply from time to time till the remedy was placed on the market, as well as for his courtesy in answering the inquiries on various points which we addressed to him.

For the purposes of our investigation we have taken into consideration (1) the method of administration, with dosage; (2) the immediate after-effects attendant on each method of administration; (3) the effect of the remedy on (*a*) the clinical signs of the disease, (*b*) the treponemata present in local lesions, (*c*) the Wassermann reaction; and (4) the question of relapses.

Our inquiry has so far been carried out on 150 cases of syphilis, and these, with the exception of a very small proportion which has passed out of our control by transfer to the Army Reserve, will continue under observation till the investigation is closed.

In regard to methods of preparing the remedy for use, we have experience of three, two for subcutaneous or intramuscular injection, and one for intravenous. The first we adopted was that advocated by Michaelis; it was chosen because it resulted in a more nearly isotonic emulsion than others, and was as follows: 20–30 c.c. of hot, sterile, distilled water were poured into a porcelain capsule, and into it was slowly sprinkled the dose of "606" it was intended to administer, the solution being stirred vigorously meantime. To the highly acid yellow solution which resulted normal NaOH solution was added in the proportion of 1 c.c. of the alkali to every decigramme of the salt, the mixture being constantly stirred. The result was the formation of a flocculent precipitate which finally dissolved, leaving a clear, yellow, highly alkaline solution. To this was added three drops of 0·5 per cent. alcoholic solution of phenolphthalein, which turned it crimson. Normal acetic acid was then added drop by drop till the crimson colour disappeared, indicating neutrality. Meantime a golden yellow precipitate formed, so that finally the capsule contained a yellow emulsion, which was made up to 40 c.c. by adding sterile physiological salt solution. In later cases we discarded the use of phenolphthalein as an indicator and used litmus paper, to which the emulsion was made slightly alkaline.

The emulsion was injected deeply into the subcutaneous tissues between the angles of the scapulæ, 20 c.c. on each side, in the earlier cases, and later into the deep subcutaneous tissues overlying the pectoral muscles or into the muscles themselves. The injection was made very slowly, avoiding the immediate neighbourhood of the skin, and the resulting tumours were dispersed by massage.

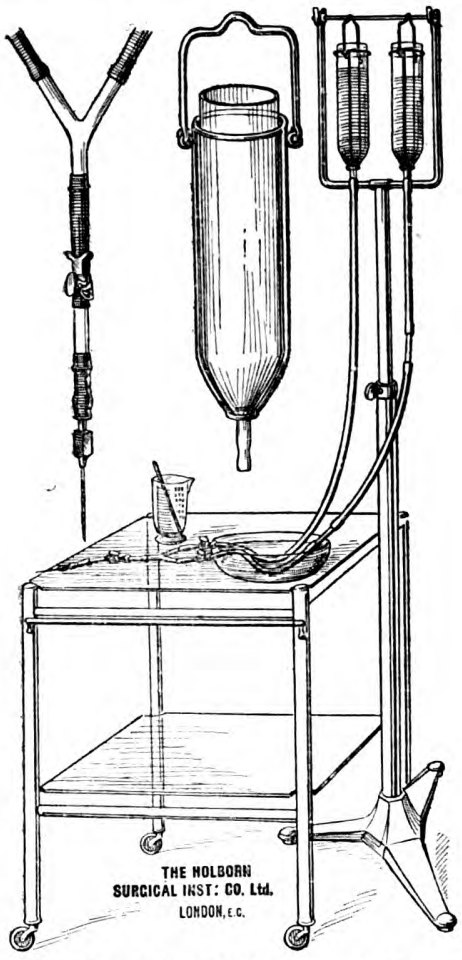
In order to avoid the inconvenience of administering such a large volume of emulsion by injection, after injecting 38 cases by Michaelis' method, we changed our technique to that advocated by Wechselmann and Lange, and prepared the emulsion as follows. The salt was poured into a porcelain vessel and dissolved by rubbing it up with ordinary caustic soda solution. Glacial acetic acid was then added till the golden yellow emulsion which resulted was only slightly alkaline to litmus paper. The precipitate was then taken up into 8–10 c.c. of sterile physiological salt solution and injected as above.

The immediate effect of an injection given in either of the above ways was some local pain, which varied in intensity with different patients from very slight to somewhat severe, but generally disappeared in an hour or two. The following day, or the day after, a local reaction, accompanied by pain and swelling, occurred at the site of injection, the pain being sufficiently severe in a few cases to require a small dose of morphia. This reaction lasted for a variable time, but in the great majority of cases had died away by the sixth day. The temperature on the evening of injection exceeded 100° F. in only 7 out of 43 cases, the highest recorded being 103·4° F., and the next highest 102° F. On the second, third, and fourth evenings the temperature was on the whole higher, though in no case did it rise above 102·2° F. Patients varied considerably as to the day on which their subsequent fever was greatest, but in the majority it attained its height on the third evening. On account of the local reaction and fever, it was found necessary to keep almost all the cases in bed for five days.

We have found that a great disadvantage of this method of administration is, besides the pain and discomfort, the local infiltration at the site of injection, and the risk of the skin sloughing, especially if the injection is made subcutaneously. We believe that in every case where "606" is given in this way there is necrosis of tissue at the site of injection, however deeply placed the latter may be, and in this we are supported by Orth, who showed to the Königsberg Conference two specimens of necrosis in gluteal muscles which had given no clinical evidence of their presence during the six weeks which elapsed in each case between the injection of "606" and the death of the patient. In a few of our cases the skin sloughed at the end of from 10 to 14 days, while in five others a slough formed at the end of from three to four months. Some of the sloughs, which consisted of necrosed muscle, skin, and subcutaneous tissue, were analysed by Major W. W. O. Beveridge, R.A.M.C., at the Royal Army Medical College, and all of them, including those which formed from three to four months after the injection, were found to contain arsenic, some in surprisingly large quantities: thus, after an injection of 0·4 grm., an amount of arsenic equivalent to 0·075 grm. of "606" was found in one slough four months later. In view of this fact, it seems to us probable that only a very small proportion of the remedy administered in this way can be absorbed daily into the circulation, so that if it is possible to produce "606"-resistant strains of treponemata by administering minute non-lethal doses of the drug to them this would appear to be a good way of doing it. In many of our cases the friction of accoutrements caused local infiltrates to form, and these sometimes necessitated the soldier being excused part of his military duty for a few weeks, though none of the patients had been returned to duty in less than a fortnight after the injection, or before all local trouble had apparently subsided. On these grounds we were glad to adopt Professor Ehrlich's advice to use the intravenous method. In preparing the drug for administration in this way we have been guided by Dr. Schreiber's papers on the subject, and do so as follows: Into a glass cylinder, graduated in cubic centimetres, are poured 100 c.c. of hot, sterile, distilled water, and the contents of a capsule of salvarsan are slowly shaken into it, while the mixture is vigorously stirred with a glass rod. To the resulting clear yellow solution normal NaOH solution is then added from a pipette while stirring. A flocculent precipitate forms at first, which re-dissolves, leaving a clear yellow, alkaline solution. When quite clear the solution is made up to 200 c.c., with warm, sterile, physiological salt solution, and is then ready for use. If it be desired to give a smaller dose than is contained in one capsule (0·6 grm.), it is convenient to make the final quantity of solution 240 c.c., so that each 40 c.c. of it corresponds exactly to 1 decigramme of the powder, and the dose can be accurately gauged. The important point about this method of making up the solution for injection is

its great dilution, since to administer "606" intravenously in a concentrated solution is highly dangerous. Having prepared the solution, the vessel containing it should stand in hot water while the apparatus for injecting it is being arranged. This applies also to the salt solution when not in use.

The intravenous administration of "606" consists briefly in puncturing a prominent vein with a suitable hollow needle, allowing a little salt solution to flow into the vein through the needle to make sure that the latter is really inside the vessel, following this up with the amount of "606" solution it is desired to administer; and, finally, running in more saline to clear the needle and its immediate neighbourhood in the vessel of all traces of the remedy. To carry this out we have used various forms of apparatus, including the special syringe invented by Dr. Schreiber, but our present one is simply an elaboration of the old funnel, rubber tubing, and hollow needle which have been used for transfusion purposes for very many years. We still use the latter simple form of apparatus, which Dr. H. W. Bayly[1] saw when he visited us early in December last, on occasions when it is inconvenient to arrange for a stand, but have modified it




for injections given in hospital, because we find that time is saved by having the salt solution and remedy in separate containers, provided the latter can be suspended from a stand. We note that we have quite independently adopted an arrangement which resembles in some particulars that designed by Dr. O. F. F. Grünbaum.

Two glass containers, each to hold 300 c.c., and shaped like the barrel of an ordinary glass syringe, have 4 feet of rubber tubing attached to each, that leading from one container being interrupted by two short pieces of glass tubing which act as windows (see illustration). Into the other end of each rubber tube is inserted one arm of a glass Y-piece. To the stem of the Y-piece is attached another piece of rubber tubing about 6 inches long and also provided with a glass window, and to the other end of this short piece of tubing is fitted a connexion to take the needle. The latter has a calibre a little greater than that of an ordinary hypodermic syringe, from which it differs in having a shorter point, so that there may be no risk of the latter wounding the other side of the vein by any slight movement of the needle while the injection is being given. Each of the three pieces of rubber tubing mentioned is provided with a spring clip so that the flow of fluid through it can be started or shut off at any desired moment. Previously to being used the container, rubber tubing, &c., are sterilised by boiling or autoclaving, and the needle by keeping it stored in spirit.

The apparatus is worked as follows: The containers having been suspended on a convenient stand which is capable of being raised, the two clips on the tubes between the Y-piece and the containers a e opened, while that on the tubing leading from the Y-piece to the needle is closed. Warm, sterile, physiological salt solution is then poured into one of the containers and finds its own level, *viâ* the Y-piece, in the other. In doing so, it imprisons many air bubbles which must be worked out of the tubes by manipulation. Having removed all air bubbles, and with the level of the salt solution standing about an inch from the bottom of each container, the clip is applied to that tube (leading from one of the two containers) which has the glass windows inserted so as to occlude it, and the quantity of "606" solution it is desired to administer is poured into the corresponding container. The other container is filled with warm physiological salt solution. The needle is then attached and the clip on the tube between it and the Y-piece opened so as to allow some salt solution to flow from the last mentioned container through the needle and remove air. This accomplished, the clip is again applied between the needle and Y-piece, and all slack tubing coiled into a shallow vessel containing water at about 110° F., so that the solutions may be warmed as they flow through. Depending on the rate of flow, each particle of solution remains in the rubber tubing for one and a half to two minutes, and, being there exposed to a large cooling surface, it is desirable to warm it just before it reaches the needle.

The patient being in bed, or on an operating table, with the arm supported in a comfortable position, a prominent vein at the bend of the elbow is selected, and the skin over it painted with a solution of iodine in chloroform (1 in 15) to disinfect the operation area. A rubber band is then applied to the upper arm so as to retard the venous return, without abolishing the radial pulse, and the patient made to clench and unclench his fist a few times to make the selected vein stand out well. A little care to distend the vein well in this way sometimes repays trouble, because the shape of the needle-point, though an advantage for reasons already given, does not lend itself to easy penetration of the vein, and if the latter be little supported by surrounding tissues, and half filled, it is apt to slip to one side before the needle. With the needle pointing in the direction of the blood flow, almost parallel with the skin surface, and its eye looking upwards, its point is applied to the skin well over the centre of the vein and pushed steadily on into the vessel. It is better to perform this trivial operation steadily than with a quick movement, such as one can adopt with the ordinary long-pointed needle frequently used for bleeding purposes, because the vein is then less likely to slip to one side or the needle to perforate the other side of it. It must rarely be necessary to expose the vein with a scalpel, since in 186 administrations by this method we have been compelled to do so only once, in a very stout patient. Even in this case we think now that had we taken a little more care to distend a vein well it would not have been necessary, since this patient received a second injection, and the vein was then entered without the use of a scalpel. With experience one knows by touch when the vein has been successfully penetrated, but if it be desired to ascertain this more certainly the containers are previously lowered to a level a little above that of the patient. The appearance of blood at the window between the needle and the Y-piece when the corresponding clip is opened will then confirm one's tactile impression. The containers are then raised, the rubber band on the upper arm removed, and, both clips between the salt solution container

[1] THE LANCET, Jan. 21st, 1911, p. 153.

and the needle being already open, salt solution will commence to flow into the vein. Here, again, it will be noticed that although the salt solution is flowing no swelling happens over the vein such as would occur if the needle were not properly inside the vessel. A little salt solution (about 10 c.c.) having been allowed to flow in this way, the clip on the tube leading from the salt solution container is closed and that on the tube leading from the "606" container opened, when the remedy will commence to flow steadily into the vein. When it has nearly reached the bottom of the container about 20 c.c. of salt solution are poured in so as to help the last few cubic centimetres of "606" solution along the rubber tube. Finally, when the level of the fluid passes the upper glass window the container is raised to increase the pressure, and when the fluid passes the lower window the clip is applied, while that on the tube leading from the salt solution container is opened so as to allow salt solution to wash the needle and the vein wall immediately adjacent free from "606." This done, the needle is removed and a dressing applied.

We can only add that in actual practice the whole operation is not nearly so complicated as would appear from our description. In fact, it is quite usual with us to administer salvarsan in this way to five patients in an hour. The rate of flow of the solution into the vein can be regulated by the height to which the containers are raised. As a rule, about 30 c.c. per minute can be safely given, but some patients cannot deal with this amount in the time and complain of oppression. In such cases the rate is easily moderated, of course, by lowering the containers.

We prefer the transfusion method to the use of a syringe because it is simpler; any part of the apparatus can be improvised from material which is readily obtainable, and this is an advantage, considering that no glassware is immune to breakage. In addition, it is easier to keep the needle in position; in fact, if the rubber tubing between the needle and Y-piece be lightly fastened to the arm with a piece of strapping one need not hold the needle at all while the solution is running into the vein. The advantage of having two containers arranged in this way is that the needle can be washed completely free of salvarsan solution before it is removed from the vein.

The immediate after-effects of an intravenous injection are generally as follows. In a very few cases some nausea, and possibly vomiting, occurs at once, but in the great majority no symptoms make their appearance till from two to three hours later, when in about 50 per cent. of cases there is a feeling of chilliness, which may go on to a rigor lasting an hour or so, and the temperature rises. In our cases of this kind the temperature varied from 100° to 103·2° F., with an average of 102°. In the great majority of our cases any nausea and vomiting which occurred were slight, and all after-effects had disappeared by the next day, but in five there were persistent vomiting and diarrhœa which lasted well into the following day. In two cases vomiting was preceded by faintness which appeared alarming, the pulse being almost imperceptible and the pallor extreme, but these symptoms rapidly passed away after the patients had vomited; each of these patients was in a very debilitated condition. Previous preparation of the patient seems to influence these after-effects, and we advise a saline purge in the morning, restricted fluids, and no solid food for two to three hours previously. For 24 hours subsequently to the injection a very light diet is advisable. On the second day the temperature has been over 100° five times out of the 186 occasions on which we have given salvarsan intravenously, and three times on the evening of the third day, the highest temperature then recorded being 101·4° in one case. The urine was examined in every case on the day following the injection and slight albumin found twice only, and in one the patient had a urethral chancre. Both cleared in a few days. In one of our cases thrombosis of the vein occurred, but caused no inconvenience, and had disappeared a fortnight later. In another case some swelling of the arm developed a few days after the injection. This was probably due to the needle having punctured the deep side of the vein by some accidental movement during the latter part of the injection. The infiltrate subsided in about ten days without having given the patient any inconvenience. With these exceptions we have experienced no local trouble through the intravenous method.

Regarding dosage, in the subcutaneous or intramuscular cases the largest dose we administered was 0·8 grm., the smallest, 0·4 grm., and the usual one, 0·6 grm. For intravenous injection, in ordinary cases of syphilis in men without nerve or visceral complications, we have usually given from 0·5–0·6 grm., according to weight and physical condition, while in cerebral or spinal cases, or in those suffering from marked cachexia, the usual dose has been from 0·2 to 0·4 grm. In our first series of intravenous cases we gave a single injection; in the next series, two injections of the above-mentioned dose at an interval of from two to three weeks; and we have recently commenced a series in which the above initial dose is given, and this is followed, at intervals of two weeks, by three injections of 0·2 grm. each, the object being to prolong the effect over a greater period of time. In framing this programme we have been influenced by certain considerations connected with the excretion of salvarsan after intravenous injection and the possible relation of this to relapses.

Major Beveridge has estimated the daily excretion of arsenic by the kidneys in a number of our cases after intravenous injection, and has found that after a dose of 0·55 grm. the urine becomes free from arsenic in an average of nine days, and, according to present knowledge, this seems the limit of time during which we can rely on the presence of the remedy in the circulation for destruction of treponemata. Relapses after "606" may be due to various causes, the relative importance of which we know very little. Amongst others the following occur to us as worthy of consideration. 1. Amongst the multitudes of treponemata originally infesting the patient, some are resistant to this remedy from the first, and, surviving the injection, procreate a fresh invading host of parasites. 2. Some, being assailed by a dose insufficient to kill them, become resistant. 3. Possibly there is a stage in the life-history of T. pallidum in which it is always "606" resistant; in this case all parasites which happened to be in this stage of development during the presence of the remedy in the circulation would escape extermination. 4. Many may lie protected in thrombi or in parenchymatous cells, and only escape from these later after all the remedy has been excreted. In the absence of light on this question we can only seek the best method of administration on a principle of trial and error, in the hope that one or both of the two last possibilities we have mentioned explain the majority of relapses, and that permanent cure is only a question of ensuring the presence of the remedy in the circulation for a given length of time. Considering the very rapid clinical effects which occurred after the first injection in those of our cases which developed a slough three to four months later, and the large amount of arsenic found at the site of injection at the end of this period, granting that the clinical effects were due to the wholesale destruction of T. pallida, it seems probable that it requires the presence of a very small dose of salvarsan in the circulation to destroy all the treponemata reached by the blood stream, and it is on this principle that we have framed the programme for our latest series of cases.

We have gone into this matter of administration in some detail because it seems to us as unjustifiable to attack this remedy on the score of relapses, before the best method of using it has been discovered, as to have denied the efficacy of quinine in malaria because recrudescences of fever occurred more frequently before its administration was properly understood.

Regarding the effect of salvarsan on the various manifestations of syphilis, the following extracts from our notes may be interesting. In order to compare the effect of the remedy on the separate lesions of syphilis we have noted the time which has elapsed between the injection and the disappearance of each. In 35 cases with primary sore the latter healed completely in an average of 10·5 days each. In 15 of these no secondary symptoms had appeared when the injection was given, and none have yet developed secondaries, though in 13 a period varying from six weeks to five months has elapsed since the injection. In 45 cases which showed secondary ulceration of mouth and throat the lesions had completely disappeared in an average of 8·8 days. Five cases of roseola cleared completely in an average of 10·4 days, 15 of macular rash in an average of 7 days, 11 of papular rash in an average of 6·3 days, 3 of pustular rash in an average of 12 days, and 6 of condyloma in an average of 9 days each. With the exception of the local

treatment to primary sores mentioned below none of these cases received any other treatment whatever.

In all cases of primary sore or condyloma T. pallida were found in great numbers previously, but in none later than 48 hours after injection. Out of 97 patients suffering from the above lesions 7 have relapsed since the injection. In three of these a primary sore was the only lesion, and this has recurred: in one, two months after a subcutaneous injection of 0·6 grm.; in one, 10 weeks after a single intravenous injection of 0·5 grm.; and in the third, 10 weeks after the first of two intravenous injections of 0·5 grm. On account of these relapses we now make it a practice to treat each primary sore locally by excision, cautery, or 30 per cent. calomel ointment, on the principle that many parasites in it may be protected from attack, viâ the circulation, by reason of being embedded in thrombosed vessels. Of the four remaining cases, one had ulceration of the throat, and this recurred three months after a subcutaneous injection of 0·6 grm.; the second originally suffered from ulceration of the tongue, which recurred 10 weeks after a subcutaneous injection of the same dose; the third had ulcerated throat and roseola, both of which recurred four months after a subcutaneous injection of 0·6 grm. into two sites, one of which sloughed; the fourth had ulcerated throat, roseola, and synovitis of the left elbow, all of which reappeared three months after a single intravenous injection of 0·5 grm. Two of these cases had been previously treated by injections of atoxylate of mercury. The above include all the relapses which have so far occurred in our cases, with one exception mentioned later. Four of these relapses were treated with a second injection, and in three the symptoms cleared completely in four to eight days.

In one case of general paralysis with marked delusions an intravenous injection of 0·2 grm., followed by a subcutaneous one of the same dose, caused no improvement; in another case which was less advanced, the patient showed marked improvement in speech after two intravenous injections of 0·2 and 0·4 grm. given at an interval of two weeks, but it is much too early to pronounce definitely on the result. In an advanced case of tabes, with optic atrophy and paraplegia, 0·2 grm. given intravenously failed to improve the eye symptoms, but the injection was followed by distinctly increased power in the legs. In a case of tabes with well-marked signs, some improvement occurred after an intravenous injection of 0·2 grm., so that the patient could walk upstairs with less difficulty and stand for about 30 seconds with eyes closed and feet together. The improvement was only temporary, however, and all the symptoms returned with their original severity. In a very early case of tabes with Argyll Robertson pupil and lightning pains only, the pupil was unaffected and the pains not entirely abolished by two intravenous injections of 0·3 and 0·5 grm. respectively. These are all the cases of parasyphilis we have treated.

In order to test the remedy in cases where mercurial treatment had failed to arrest troublesome or dangerous symptoms, or to prevent frequent recrudescences of the disease, or was badly tolerated, the Director-General, Army Medical Service, invited the medical officer in charge of each military hospital in the United Kingdom to send particulars of such cases, with a view to their transfer to the Military Hospital, Rochester-row, for treatment with salvarsan, and in this way we have had an opportunity of treating 10 cases in which mercury failed to produce any impression, though administered regularly from a very early stage; 22 where the same regular treatment had failed to prevent frequent relapses; 1 in which it failed to produce any impression when mutilating ulceration had well advanced; and 1 which could not tolerate mercury. In all of these cases, with one exception, the injection of salvarsan was followed by the complete disappearance of all active signs of the disease. The exception was a case of ulceration of the larynx and hard palate, with necrosis of bone. The ulceration has completely healed, but the patient's voice is still rather hoarse.

The following brief extracts from the notes on some of our cases may be interesting:—

CASE 1.—Private —— contracted syphilis in June, 1910, and on July 20th developed mild syphilitic iritis of left eye, which cleared up under injections of calomel cream. Weekly injections of mercurial cream continued till August 23rd. On August 16th slight relapse of iritis and mucous patch on the left tonsil. Iritis had disappeared by August 20th, but the patch on the tonsil had become much worse. On Sept. 5th severe relapse of the iritis, which was much worse than on any previous occasion. He was given an intramuscular injection of calomel gr. ½. On Sept. 7th his condition was as follows: Vision of the left eye reduced to hand movements, two large deposits on iris, firm posterior synechiæ, and much lymph on posterior surface of cornea. Vision of right eye, 6/12. Injection of 0·6 grm. "606" subcutaneously. Sept. 8th, severe local reaction in eye, which was much congested and so painful that an injection of morphia was required. Three days after injection nodules on the iris distinctly smaller; counted fingers at 3 feet with left eye. Twenty-six days after injection vision in each eye was 6/12, and he could read D. 6 at 18 inches. Synechiæ remain. No return of eye symptoms up to March 14th, 1911. The mucous patch disappeared in four days after injection. No mercury administered since injection of salvarsan.

**In this case the injection of calomel cream given two days previously to that of "606" possibly obscures the issue, but, without wishing to lay too much stress on the effect of salvarsan in this case, it must be remembered that the two relapses of iritis occurred while the patient was fully under the influence of mercury.**

CASE 2.—Gunner —— acquired syphilis in June, 1906. Readmitted in December, 1906, for severe ulceration of the throat; two further admissions for relapses between then and August 28th, 1910, when severe iritis commenced, for which he was in hospital for 108 days. At the end of this time he was transferred to Rochester Row for treatment with "606." His previous treatment had included 49½ grains of mercury by intramuscular injection, with variations in the form of hydrarg. perchlor. and hydrarg. c. cret. and potassium iodide by the mouth. His condition on transfer was as follows: Right eye, vision = 6/60, iris irregular, with firm posterior synechiæ; fundus not visible on account of numerous deposits scattered on the posterior surface of the cornea. Left eye, vision = 6/18, otherwise normal. Injection of 0·5 grm. salvarsan intravenously, followed by no reaction. Injection followed by slight improvement. On Dec. 30th, second injection of 0·5 grm. intravenously, followed by severe reaction. One week later, vision of the right eye = 6/24 (2); less lymph on posterior surface of the cornea so that optic disc and retinal vessels seen; no optic neuritis or choroiditis; synechiæ remain. On Jan. 9th, 1911 discharged from hospital with vision of the right eye, 6/18 (2), and reads D = 3. No recurrence up to date. Wassermann reaction, strongly positive on admission, had become ± by day of discharge; blood not received since for further tests.

CASE 3.—Gunner —— contracted syphilis in September, 1908. Treated with regular courses of mercury by intramuscular injection, with intervals of rest, from then till August, 1910, receiving 38 gr. of mercury. In August, 1910, he developed a large indolent ulcer on the left thigh, and on Nov. 28th was admitted to R. Herbert Hospital, Woolwich, for gummatous ulceration of the soft palate and left tonsil. Mercurial injections continued, with potassium iodide by the mouth, with little or no improvement, and mercury had to be stopped on account of symptoms of salivation. Transferred to Rochester Row for treatment with "606," when examination showed large perforating ulcer of the soft palate, embracing part of the left posterior pillar of the fauces and tonsil. Intravenous injection of 0·5 grm. salvarsan. Two days later throat very distinctly better. On Dec. 22nd, 1910, second injection of 0·4 grm. intravenously. Small ulcer still present on the left tonsil, but clean and rapidly healing. On Jan. 14th, 1911, no active signs of syphilis. No recurrence up to Feb. 28th.

CASE 4.—Private —— contracted syphilis in May, 1909. Regular treatment with mercury by injections, as well as at other times by the mouth, from June, 1909, when first admitted for severe ulceration of throat, which healed very slowly under treatment. Spent 440 days in hospital between June, 1909, and October, 1910, having been readmitted seven times for ulceration of the throat. Last admission August 2nd, 1910. In spite of careful local and mercurial treatment throat became steadily worse till Nov. 12th, 1910, when he was reported as "seriously ill." On Nov. 18th feeding by the tube was commenced and continued for a few days. Slow improvement from then to January, 1911, when he was transferred to Rochester Row for salvarsan treatment. His condition then was as follows: The patient was very thin and feeble; very extensive ulceration of the pharynx and epiglottis; voice very indistinct, but the condition of the larynx could not be ascertained on account of much frothy mucus obscuring view. On Jan. 4th intravenous injection of 0·5 grm. salvarsan. Preparations were previously made for tracheotomy should a local reaction at the site of manifestation of the disease, such as sometimes occurs after injection of this remedy, cause œdema glottidis. Injection was followed by severe nausea, faintness, and vomiting, after which he revived. The temperature rose to 100° F. on the day of the injection, and was 102° on the third evening, subsequently being normal. Improvement very rapid from the fifth day after injection. Second injection of 0·55 grm. given intravenously on Jan. 17th and followed by no reaction. Ulcers had completely healed by the eighteenth day after the first injection, and he was discharged hospital on Feb. 3rd with no active signs of syphilis and having gained 18 lb. in weight in 34 days. Wassermann reaction still positive on the day of discharge; no subsequent test has been made as patient (Reservist) has gone to his home.

CASE 5.—Pensioner —— contracted syphilis early in 1900 and was treated by the mouth till secondary symptoms had disappeared. At this time the systematic treatment of syphilis, under which a patient once infected is not lost sight of till pronounced cured or he leaves the service, had not been introduced into the army, and on transfer to another station further treatment depended on the outbreak of fresh symptoms. In this case no further symptoms occurred till April, 1910, when he was admitted to hospital for ulceration of the head, face, and other parts of the body, the number of ulcers being 40. Under treatment with mercury and potassium iodide by the mouth some of the ulcers on the face had commenced to heal by November, but at this time a fresh crop of ulcers had broken out elsewhere, and he was rapidly going downhill. When transferred to Rochester Row on Nov. 24th his condition was as follows: His face was covered with large ulcers; there was complete destruction of a portion of the right side of the nose, with very offensive nasal discharge; large ulcers of the scalp and both sides of the neck; perforating ulcer of the sole of the left foot, and a very large, deep, and offensive ulcer, 3½ inches across, on the inner side of the left ankle; minor ulcers on other parts of the body. Patient very thin and so deaf that he could only hear when shouted at. Intravenous injection of 0·5 grm. salvarsan. One week later the ulcers

on the neck and nose had completely healed and hearing was normal. On Dec. 20th a second injection of salvarsan (0·4 grm.) was given intravenously. On Dec. 31st ulcer on ankle ¼ × ⅜ inch; weight 11 st., a gain of 3½ lb. Discharged hospital with all ulcers completely healed and feeling quite well on Feb. 11th. Wassermann reaction, strongly positive on transfer, completely negative three weeks later and also negative on the day of discharge.

**In this case mercurial treatment did not have a fair trial in the early stages of the disease, but after April, 1910, it failed in the hands of a very experienced officer, where salvarsan succeeded in arresting the progress of lesions which could otherwise have only ended with the death of the patient.**

CASE 6.—Private —— contracted syphilis in October, 1910. Treatment commenced with three injections of calomel cream (gr. ⅔ each), followed by injections of mercurial cream (mercury gr. 1 in each) at weekly intervals. After two of the latter had been given severe ulceration of pharynx, with secondary rash, occurred, and albumin was noted in the urine. One more injection of mercurial cream (mercury gr. ½) was given and its effect on the amount of albumin carefully noted. Albumin markedly increased on the day after the injection, and mercurial treatment was temporarily suspended. Œdema of the face and ankles followed, with diminished urine and greatly increased albumin, while ulceration of the pharynx became very severe. General measures for nephritis having failed to cause any improvement, and an injection of mercury salicylate, gr. 1½, having been followed by some aggravation of the symptoms, 0·5 grm. salvarsan was given intravenously on Jan. 23rd, 1911. The following day there was no albumin in the urine; on the third and fourth days albumin was very slight, and since then a very slight amount of albumin has been found every third or fourth day, its presence being indicated by a slight haze on boiling. The urine has increased in amount and the œdema entirely disappeared. The throat commenced to heal from the second day, and by the time a second injection of 0·5 grm. was given intravenously, 14 days later, there was no clinical evidence of syphilis. Wassermann reaction, strongly positive on the day of the first injection, was still positive on the fourteenth day, but completely negative four weeks after the first injection.

TABLE I.—*Wassermann Reactions before and after Subcutaneous Injection of Salvarsan.*

| | As tested by the original method. | | | | | | | | As tested by Stern's modification. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Weeks after injection. | Reaction positive before injection. | Remained positive. | Reaction became weaker. | Reaction became negative. | Reaction returned to positive after becoming negative. | Reaction negative before injection. | Remained negative. | Became positive. | Reaction positive before injection. | Remained positive. | Reaction became weaker. | Reaction became negative. | Reaction returned to positive after becoming negative. | Reaction negative before injection. | Remained negative. | Changed to positive. |
| 1–2 | 17 | 13 | 1 | 3 | 0 | 10 | 9 | 1 | 26 | 17 | 7 | 2 | 0 | 1 | 0 | 1 |
| 2–3 | 15 | 8 | 3 | 4 | 0 | 9 | 8 | 1 | 16 | 13 | 3 | 0 | 0 | 2 | 1 | 1 |
| 3–4 | 10 | 4 | 4 | 2 | 0 | 2 | 1 | 1 | 11 | 9 | 2 | 0 | 0 | 0 | 0 | 0 |
| 4–5 | 15 | 4 | 1 | 8 | 2 | 5 | 5 | 0 | 18 | 8 | 5 | 5 | 0 | 2 | 1 | 1 |
| 5–6 | 7 | 1 | 1 | 5 | 0 | 5 | 4 | 1 | 11 | 3 | 3 | 5 | 0 | 0 | 0 | 0 |
| 6–10 | 31 | 4 | 0 | 25 | 2 | 9 | 8 | 1 | 36 | 11 | 3 | 19 | 3 | 3 | 3 | 0 |
| 10–14 | 24 | 0 | 2 | 21 | 1 | 7 | 6 | 1 | 31 | 7 | 2 | 19 | 3 | 0 | 0 | 0 |
| 14–18 | 28 | 3 | 1 | 18 | 6 | 7 | 7 | 0 | 30 | 8 | 1 | 10 | 11 | 2 | 2 | 0 |
| 18–26 | 7 | 0 | 0 | 4 | 3 | 3 | 2 | 1 | 10 | 0 | 0 | 6 | 4 | 0 | 0 | 0 |

TABLE II.—*Wassermann Reactions before and after a Single Intravenous Injection of Salvarsan.*

| | As tested by the original method. | | | | | | | | As tested by Stern's modification. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Weeks after injection. | Reaction positive before injection. | Remained positive. | Reaction became weaker. | Reaction became negative. | Reaction returned to positive after becoming negative. | Reaction negative before injection. | Remained negative. | Became positive. | Reaction positive before injection. | Remained positive. | Reaction became weaker. | Reaction became negative. | Reaction returned to positive after becoming negative. | Reaction negative before injection. | Remained negative. | Changed to positive. |
| 1–2 | 4 | 2 | 1 | 1 | 0 | 1 | 1 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2–3 | 6 | 1 | 4 | 1 | 0 | 2 | 2 | 0 | 8 | 7 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3–4 | 4 | 0 | 1 | 3 | 0 | 1 | 1 | 0 | 5 | 2 | 1 | 2 | 0 | 0 | 0 | 0 |
| 4–5 | 2 | 0 | 0 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 5–6 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| 6–10 | 10 | 0 | 0 | 9 | 1 | 4 | 4 | 0 | 13 | 1 | 3 | 7 | 2 | 0 | 0 | 0 |
| 10–13 | 8 | 0 | 0 | 7 | 1 | 1 | 0 | 1 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |

TABLE III.—*Wassermann Reactions before and after Two Intravenous Injections of Salvarsan.*

| | As tested by the original method. | | | | | | | | As tested by Stern's modification. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Weeks after first injection. | Reaction positive before injection. | Remained positive. | Reaction became weaker. | Reaction became negative. | Returned to positive after becoming negative. | Reaction negative before injection. | Remained negative. | Became positive. | Reaction positive before first injection. | Remained positive. | Reaction became weaker. | Reaction became negative. | Returned to positive after becoming negative. | Reaction negative before first injection. | Remained negative. | Changed to positive. |
| 1–2 | 14 | 9 | 4 | 1 | 0 | 5 | 5 | 0 | 12 | 9 | 1 | 2 | 0 | 2 | 1 | 1 |
| 2–3 | 9 | 6 | 2 | 1 | 0 | 5 | 5 | 0 | 10 | 6 | 3 | 1 | 0 | 1 | 1 | 0 |
| 3–4 | 12 | 4 | 3 | 5 | 0 | 2 | 2 | 0 | 11 | 8 | 2 | 1 | 0 | 2 | 2 | 0 |
| 4–5 | 8 | 2 | 1 | 5 | 0 | 1 | 1 | 0 | 6 | 1 | 2 | 3 | 0 | 1 | 1 | 0 |
| 5–6 | 7 | 1 | 0 | 6 | 0 | 1 | 1 | 0 | 5 | 1 | 2 | 2 | 0 | 0 | 0 | 0 |
| 6–10 | 9 | 1 | 0 | 8 | 0 | 2 | 2 | 0 | 9 | 1 | 1 | 7 | 0 | 2 | 1 | 1 |
| 10–11 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |

CASE 7.—Private —— contracted syphilis early in 1907 and treated with seven courses of mercury cream by intramuscular injection, receiving 40 grains of mercury in this way, two courses of soamin, gr. 50 each, and two of mercury atoxylate, gr. 10½ each, as well as inunctions of mercury at various times. Throughout treatment there was constant recurrence of syphilitic lesions, chiefly affecting the mouth. On Oct. 8th, 1910, admitted with tongue fissured and ulcerated, and mucous patches on the buccal mucous membrane. On Oct. 10th he was given an intramuscular injection of salvarsan (0·6 grm.), which was followed by severe local reaction, and a slough formed at one of the two sites of injection 12 days later. Improvement in the mouth and tongue commenced from the third day, and on Nov. 12th no signs of syphilis were apparent. No recurrence up to Feb. 28th, 1911, but Wassermann reaction still strongly positive.

CASE 8.—In an early case of syphilis which developed anterior poliomyelitis, with paralysis of muscles of both legs, wasting and reaction of degeneration of extensor group, all of which took one month to develop, the patient was able to litt his legs easily from the bed three days after an intravenous injection of 0·4 grm., and six weeks later could walk without the aid of a stick, though the extensors of the right leg were still very weak and there was no return of the patellar reflex. In this case the improvement continued till three months after the injection, when he suddenly developed paresis of the tongue, chiefly affecting the right side, so that he could not protrude it; there was also some paresis of the right external rectus, and his manner became curious. These symptoms passed off in two days with the exception of the mental ones. Space will not allow us to describe this interesting case more completely, and he is only mentioned here to complete our list of relapses.

One of us (L. W. H.) has tested the blood of our cases before the first injection and, as far as possible, at regular intervals after, and the results of the 883 reactions obtained are shown on the accompanying tables, in which the results obtained after each method of administration are shown separately. The results of the test for the Wassermann reaction which different observers have obtained after the injection of "606" have varied very widely, one worker showing 100 per cent. of negatives, and another only 25 per cent. Possibly the differences are explained by the different techniques adopted, and it seems desirable that in all cases some particulars of this should be stated. In explanation of the attached tables, the tests were conducted by the original method as well as by Stern's modification, which, as will be seen from the results, is more delicate than the original. The "antigen" used was an alcoholic extract of syphilitic infant's liver, which deviates 0·1 c.c. complement when in a combination of 0·03 c.c. extract and 0·2. c.c. inactivated serum of a florid syphilitic. It was used in a strength of 0·2 c.c. for the original and 0·03 c.c. and 0·06 c.c. for the Stern test. The patient's serum was inactivated by heating a small quantity (0·4 c.c.) of it at 55° C. for ten minutes only, as this has been found to result in a much more delicate test than when the serum is heated for the usual half hour. To form an estimate of the strength of the reaction in the case of each test two quantities of complement, 0·1 c.c. and 0·2 c.c., were used in the case of the original and two quantities of extract in that of Stern's modification. Deviation of 0·2 c.c. complement in the case of the original and with 0·03 c.c. extract in the case of the Stern test were counted as the stronger reactions. In the accompanying tables the numbers of sera which showed a weaker reaction after treatment with "606" are shown in a separate column under each test and are made up of those which, in the case of the original, deviated the stronger amount of complement before the injection and subsequently the weaker amount only, or at first deviated only the smaller amount and subsequently became ±. In the case of the Stern test those which at first showed deviation with the smaller amount of extract and subsequently deviated with the larger amount only are included in this category. It will be noted that a certain proportion of the sera which subsequently to the injection gave a negative reaction returned to positive at some time later.

We have related our experience with salvarsan more as a contribution to the evidence for and against this remedy than as a preliminary to the expression of any judgment on our part as to the position which it will occupy eventually in the therapy of syphilis. Any such judgment would, in our opinion, be entirely premature at this stage. Meantime our results seem to justify the following conclusions:—

1. Salvarsan has a very marked and rapid effect on the clinical manifestations of syphilis in most cases.

2. This effect is due to its action on the parasites, and is not simply a cloaking of symptoms, as is shown by the disappearance of treponemata from local lesions and the effect on the Wassermann reaction.

3. It is impossible to say at present whether this effect consists in destruction of the whole or only part of the parasites, or simply in suppression of their activity.

4. The risk in using it being so slight, no judgment against it will be justifiable till every method of administering it has been worked out.

We desire to acknowledge our great indebtedness to Major Beveridge, R.A.M.C., for the very many careful chemical analyses he has made for us, and to Lieutenant A. S. Cane, R.A.M.C., for his invaluable assistance in the notes on the cases.

# THE DIAGNOSIS OF GASTRIC CARCINOMA BY THE CLEAVAGE OF POLYPEPTIDES.

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Neubauer and Fischer (1) have proposed a laboratory test for the further assistance of the clinician in his diagnosis of cancer of the stomach. It consists of the action of gastric contents upon a polypeptide. From several quarters certain criticisms have emanated, and we ourselves are not disposed to agree entirely with the basis upon which the reaction rests, nor to regard it as specific. In spite of this, however, in connexion with an investigation upon the peptide-splitting action of pathological fluids, the test has, in our hands, yielded results suggesting an advocacy for that extended use which alone can determine its permanent utility.

### *Method.*

We perform the reaction in the following manner (modified from Neubauer):—

1. An Ewald test breakfast is given on a presumably empty stomach, and withdrawn 1 to 2 hours later. It is best to syphon off the contents and to avoid any undue manipulations with the tube. Much intra-gastric movement may lead to reflex regurgitation of duodenal fluids.

2. The stomach contents are filtered. The residue and filtrate are tested for the presence of blood, bile, trypsin, and tryptophane. If any of these are present the material is discarded.

3. One part of the filtrate is added to a solution of glycyl-tryptophane,* covered with toluol and incubated for 12–24–48 hours at 38–40° C.

4. A second portion of the filtrate is incubated for the same period with the addition of toluol, but without the dipeptide (control for tryptophane formed during incubation).

5. A tube containing glycyl-tryptophane and toluol is also incubated at 38–40° C. for 12–24 hours (control for free tryptophane in the polypeptide solution).

6. To each portion of the incubated filtrate and the control a mixture of bromine water, 3 parts, and acetic acid (5 per cent. in water) 1 part, is added drop by drop. In the presence of free tryptophane, a lilac colour develops when a sufficiency of bromine water is added (6). This colour disappears when bromine is present in excess, the mixture becoming yellow in colour. In the absence of free tryptophane the fluid assumes a pale yellow tint.

### *Fallacies.*

These are related chiefly to the presence of substances which decompose, or inhibit the decomposition of, the polypeptide.

*Vomits* cannot be used for the purpose, since regurgitated duodenal enzymes are frequently present; they may also contain free tryptophane, or yield it upon incubation. Post-mortem gastric contents are similarly useless.

*Bile.*—Although bile itself is unable to break up the dipeptide glycyl-tryptophane, its presence is indicative of the back flow of duodenal fluid containing proteolytic ferments. When either the residue or the filtrate gives a reaction for bile, the gastric contents are discarded and another test-meal given.

* This is supplied by Messrs. Kalle of Biebrich (and their London agents, Zimmermann) in small bottles ready for use.

*Blood.*—The presence of blood vitiates the test. When 1 c.c. of glycyl-tryptophane is used for the reaction, so small a quantity as 0·2 c.c. of blood effects a cleavage of the peptide (2). When equal quantities of glycyl-tryptophane and blood are employed, 0·01 c.c. of blood suffices to yield free tryptophane. If the residue or the filtrate contains traces of blood the specimen is rejected.

*Reaction.*—The total acidity and the free HCl must be estimated prior to adding the glycyl-tryptophane. The power of the gastric contents to split off the amino-group is inhibited by 0·18 per cent. HCl or 0·2 per cent. $Na_2CO_3$, after incubation for 24 hours. The reaction of the content should be brought within these limits.

*Bacteria.*—The solution of glycyl-tryptophane is kept sterile in sealed capsules, as certain bacteria are able to set free the tryptophane.

*Time.*—We have obtained a positive result in 10 hours, and as late as 48 hours. Each specimen is a law unto itself. It is advisable to withdraw portions of the incubated fluids at stated intervals, and to consider the reaction as negative only when 48 hours' incubation does not yield free tryptophane. It is scarcely necessary to add that for the longer period of incubation the reaction limit calls for special attention.

### *Results.*

These may be stated in tabular form:—

#### *Positive Results.*

*Confirmed by Operation or Necropsy.*

| Diagnosis. | Acidity. | Diagnosis. | Acidity. |
|---|---|---|---|
| Gastric carcinoma ... ... ... | 43 | Gastric carcinoma ... ... ... | 0 |
| ,, ,, ... ... ... | 45 | ,, ,, ... ... ... | 0 |
| ,, ,, ... ... ... | 26 | ,, ,, ... ... ... | 0 |

*Clinical Diagnosis.*

| | | | |
|---|---|---|---|
| Gastric carcinoma ... ... ... | 75 | Malignant liver ... ... ... | 0 |
| ,, ,, ... ... ... | 0 | Undiagnosed ... ... ... ... | 10 |

#### *Negative Results.*

*Confirmed at Operation or Necropsy.*

| Diagnosis. | Acidity. | Diagnosis. | Acidity. |
|---|---|---|---|
| Endothelioma peritoneum | 60 | Gastric ulcer ... ... ... ... | 37 |
| Gastric carcinoma ... ... ... | 30 | ,, ,, ... ... ... | 59 |
| Pyloric carcinoma ... ... ... | 113 | Pyloric stricture ... ... ... | 0 |
| Gastric ulcer ... ... ... ... | 40 | ,, carcinoma ... ... ... | 20 |

*Clinical Diagnosis.*

| | | | |
|---|---|---|---|
| Gastric ulcer ... ... ... ... | 30 | Gastritis ... ... ... ... ... | 140 |
| Gastritis ... ... ... ... ... | 30 | Carcinoma ... ... ... ... | 70 |
| ,, ... ... ... ... ... | 54 | ,, ... ... ... ... | 75 |
| ,, ... ... ... ... ... | 27 | | |

*Miscellaneous with Gastric Symptoms.*

| | | | |
|---|---|---|---|
| General paralysis, necropsy | 43 | Rheumatoid arthritis, clinical | 10 |
| Typhoid fever, Widal ... ... | 70 | ,, ,, ,, | 21 |
| Pernicious anæmia, necropsy | 33 | ,, ,, ,, | 0 |
| Hepatic cirrhosis ,, | 70 | Pyorrhœa alveolaris, ,, | 13 |

#### *Results to Date—Confirmed.*

| — | Positive. Carcinoma | Other conditions. + | Other conditions. − | Negative. Carcinoma. |
|---|---|---|---|---|
| Neubauer ... ... ... ... | 6 | 0 | 26 | 1 |
| Weinstein ... ... ... ... | 11 | 0 | 18 | 0 |
| Lyle and Kober ... ... ... | 6 | 0 | 7 | 0 |
| Own ... ... ... ... ... | 6 | 0 | 16 | 3 |
| Total ... ... ... ... | 29 | 0 | 67 | 4 |

#### *Criticisms.*

1. Choice of meal. Meat meals permissible.
2. The presence of polypeptide not necessary.

It has been stated (3) that it is not necessary to restrict the choice to an Ewald test meal; that a meat meal serves the same purpose; that a meat meal is preferable since the dipeptide may be dispensed with (as the meat protein derivatives yield tryptophane when acted upon by the gastric contents of carcinoma). That these statements are difficult to sustain is evident from the following table:—

*Various Meals. No Dipeptide Added.*

| Cases. | Before incubation. Ewald. | Before incubation. Meat. | 24 hours' incubation. Ewald. | 24 hours' incubation. Meat. |
|---|---|---|---|---|
| *Confirmed positive.* | | | | |
| Carcinoma ... ... ... | − | − | − | − |
| Pyloric cases ... ... ... | − | − | − | + |
| *Confirmed negative.* | | | | |
| Gastritis ... ... ... ... | − | + | − | + |
| ,, ... ... ... ... | − | − | − | − |
| Gastric ulcer ... ... ... | − | − | − | + |
| Arthritis ... ... ... ... | − | − | − | + |

Two ordinary dinners gently warmed with 2 per cent. HCl gave a positive tryptophane reaction.

The figures show that tryptophane does not appear in Ewald test meal contents either before or after incubation. It does occur before and after incubation when a meat test meal is given, and does not show any relation to cases of carcinoma. The test is, therefore, valueless when the polypeptide is not added to the gastric contents.

3. *The presence of blood is not a contra-indication to the carrying out of the reaction.*—We have shown elsewhere (2) that blood serum and exudates and transudates, &c., possess the power of decomposing the dipeptide, glycyl-tryptophane. In their original description of the reaction, Neubauer and Fischer lay special stress upon the necessity for excluding the presence of blood in both residue and filtrate. How far by the usual tests for occult or other form of hæmorrhage it is possible to exclude lymph or cell products is a question of vital interest from the theoretical standpoint. The consideration of this question may be relegated to a later communication. The essential point is, that the presence of minute traces of blood vitiates the reaction.

4. *Trypsin may be present even in the absence of bile, decompose the dipeptide, and so render the result valueless.*—This has not been our experience, as the following instances show:—

*Bile and Trypsin.*

| Material. | Number. | Bile. | Ferment. |
|---|---|---|---|
| Vomit. | 9 | + | + |
| | 6 | + | − |
| | 7 | − | − |
| Test meal. | 2 | + | + |
| | 2 | + | − |
| Post-mortem content. | 5 | + | + |
| | 3 | + | − |
| | 1 | − | + |

Coagulated blood serum plates used.

But Ohrl and Schittenhelm (5), however, when investigating the conditions associated with the regurgitation of duodenal contents into the stomach, found trypsin present in two out of a large number of cases, so that this objection must receive due weight by those who carry out or interpret the reaction. A lowered acidity of the contents or anacidity may reflexly occasion a regurgitation of trypsin. These factors should be borne in mind when devising the alterations necessary for the minimising of this fallacy. Careful removal of the gastric contents (see method) appreciably diminishes this fallacy.

Until a large number of results are accumulated we cannot say what is the real value of this reaction, but the guidance we have so far obtained has been somewhat striking. Further work may, perhaps, simplify some of the technical procedures and indicate means for the better avoidance of some of the fallacies. Kuttner and Pulvermacher (7) have already tried the substitution of "seiden-peptone" for the glycyl-tryptophane; their method presents some advantages, but is

more tedious to carry out, and the results to date are not encouraging.

While the object of this note is to suggest a wider use of this test, it would be unfair to withhold the comment that it has yet to be demonstrated that the endo-enzymes of cancer cells possess abnormal characters and activities. Still, several clinical tests whose theoretical bases have been doubted have proved of value in diagnosis.

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Bristol.

# THE IODINE METHOD OF STERILISING THE SKIN.

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AND
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THE iodine method of preparing the skin before operation has now been widely adopted, and undoubtedly gives excellent results. Whether the skin is really sterilised by this means can only be determined by bacteriological examination. The following investigations were undertaken with the view of determining this point. One of us (P. T.) has employed this method for over two years. At first tincture of iodine was used only as a final application immediately before the incision, the skin having been prepared and compressed in the orthodox manner on the previous day. For about the past 12 months, however, the preliminary compressing has been omitted, the solution of iodine being the only antiseptic used in the preparation of the patient's skin. In certain of the present series of cases the B.P. tincture (2½ per cent.) has been employed for this purpose, and in others the following solution: iodine, grms. 30; potass. iodid., grms. 40; aq. dest., 500 c.c. Before using this is diluted with an equal volume of methylated spirit, so that the strength of the solution is 3 per cent.

There is some difference of opinion as to whether preliminary shaving of the skin is desirable. Personally, I think it is better to do so, at any rate in adults, when the incision is to be made in the groin, the abdomen, or where much hair is present. The skin was shaved in all the cases mentioned below, and it is interesting to note that of the three cases that were not sterile one was very indifferently shaved, while in another a hair about half an inch long was attached to the minute piece of skin sent for bacteriological examination. It is here necessary to emphasise the fact, which has been insisted upon by other writers, that for the satisfactory action of the iodine it is essential that the skin shall be dry. Shaving should thus be carried out with a sharp razor without lathering the skin or, if soap and water are used, the skin must be subsequently dried with a pad or towel and then washed over with ether and again dried before the iodine solution is applied.

In acute cases the whole process is carried out on the operating table after the patient has been anæsthetised. In ordinary cases, to avoid a mess in the theatre, the preparation is carried out in the ward. The iodised area is then covered with a pad or towel. Before commencing the operation a second application of the iodine solution is made, the skin being now in a thoroughly dry condition. In the 32 cases quoted below and prepared in this manner, a thin strip of the whole thickness of the skin was removed immediately after the first incision and conveyed to the laboratory in a sterilised test-tube plugged with cotton-wool.

The investigation consisted in cultivating the piece of skin in nutrient broth for a period of 72 hours. At the end of 24 and 48 hours respectively the culture was looked at, and at the slightest suspicion of turbidity "hanging drop" preparations were made and examined. If the fluid remained clear the cultivation was allowed to proceed until 72 hours had elapsed, when it was always examined, both macroscopically and microscopically. In the cases in which micro-organisms were present nutrient agar tubes were inoculated from the broth and the particular bacterium further studied and identified. In no case did the culture show the presence of contaminating organisms from the air.

*Table showing the Results of Bacteriological Investigations.*

| No. | Nature of disease or operation. | Result. |
|---|---|---|
| 1 | Acute appendicitis. | Sterile. |
| 2 | Adenoma of thyroid. | ,, |
| 3 | Parenchymatous goitre. | ,, |
| 4 | Radical cure of inguinal hernia. | Growth of a few cocci, subsequently identified as staphylococcus albus, detected on the third day. |
| 5 | Gall-stones. | Sterile. |
| 6 | Amputation of septic finger. | ,, |
| 7 | Appendicectomy. | ,, |
| 8 | Radical cure inguinal hernia. | ,, |
| 9 | Excision of breast. | ,, |
| 10 | Varicose veins. | ,, |
| 11 | Radical cure femoral hernia. | ,, |
| 12 | Strangulated umbilical hernia. | ,, |
| 13 | Varicocele. | A pure growth of staphylococcus albus. |
| 14 | Lipoma (scapular region). | Sterile. |
| 15 | Tuberculous ankle. | ,, |
| 16 | Acute appendicitis. | ,, |
| 17 | Branchial cyst. | ,, |
| 18 | Radical cure inguinal hernia. | ,, |
| 19 | Cystic adenoma of breast. | ,, |
| 20 | Carcinoma of breast. | ,, |
| 21 | Enlarged cervical glands. | ,, |
| 22 | Varicocele. | A growth of staphylococcus albus appeared after 48 hours' incubation. |
| 23 | Radical cure inguinal hernia. | Sterile. |
| 24 | Thyroid cyst. | ,, |
| 25 | Mammary cyst. | ,, |
| 26 | Radical cure inguinal hernia. | ,, |
| 27 | Wiring fractured patella. | ,, |
| 28 | Appendicectomy. | ,, |
| 29 | Radical cure inguinal hernia. | ,, |
| 30 | Unreduced Colles's fracture. | ,, |
| 31 | Radical cure inguinal hernia. | ,, |
| 32 | Mastoid abscess. | ,, |

All the above cases healed by primary union with the exception of those acute cases in which drainage was necessary. In none did the iodine produce any dermatitis. Though the incisions were made in very varied situations it is interesting to note that in the 3 cases in which the skin was infected the wound was in the groin. Indeed, in 9 such cases organisms were present in 3. In each case the organism present was staphylococcus albus and, as the wounds healed without any suppuration, the infection would not have been of a serious nature. How do these results compare with those obtained after preparation of the skin by antiseptic compresses?

Mr. Lockwood in the last edition of his book on "Aseptic Surgery" (1908) quotes the following three series of experiments: (1) the skin of the groin was sterile in 5 cases and septic in 6; (2) the skin of the scrotum was sterile 8 times and septic 6 times; and (3) in 45 tests, the skin being taken from incisions in various regions, 41 were sterile and 4 only were septic. Contrasting these results with the present series, it appears that the iodine method of sterilising the skin is at least as effective as the older and more troublesome method of preparation.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF STRANGULATED HERNIA OF THE APPENDIX VERMIFORMIS.

BY ROBERT OLLERENSHAW, M.D. VICT., F.R.C.S. ENG.,
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ON Dec. 18th, 1910, at 6 P.M., a male infant, aged 10 days, was admitted to the Salford Royal Hospital under my care. The mother stated that the child had not shown any signs of being ill, and had it not been for the fact that she noticed some swelling and redness of the scrotum she would not have suspected that anything was wrong. The child was breast-fed and had taken his "feeds" well. There had been no vomiting, and a good motion of the bowels had occurred on the morning of the day of admission. He was an ill-nourished baby of normal dimensions, and he lay curled up and quiet, but on being disturbed, as when the legs were straightened out, commenced to give out a series of the short exhausted cries which are so typical of infants subjected to some acute abdominal disaster. The right side of the scrotum was slightly swollen, œdematous, and of a bright red colour. The mother was not able to say how long the swelling had been present, but she had only noticed the redness whilst bathing the child in the morning. The right inguinal region was prominent and of the same bright-red tint. On palpating the scrotum the right testicle seemed to be somewhat larger than its fellow, and the scrotal integuments pitted deeply on pressure. The diagnosis was by no means obvious, and it was left between torsion of the right testis and the condition actually found.

An inguinal incision of 1½ inches was made, and a sac was exposed containing the lower inch of the appendix, which was strangulated and quite gangrenous. The internal abdominal ring was freely exposed, and the obstruction, which was at the ring, divided. The healthy remainder of the appendix was drawn down so that its base was accessible and the usual method of appendicectomy, with invagination of the stump, was performed. The cæcum was found to be very mobile, a condition frequently met with in these cases.

Some writers have stated that diagnoses of strangulated hernia of the appendix are very often incorrect, and that the real lesion present is appendicitis occurring in a hernial sac. In this case, however, the fact that the appendix above the tight constriction was perfectly healthy leaves no room for doubt as to the true condition present. The sac was separated with some difficulty from the œdematous tissues, ligatured and removed, and the inguinal canal was repaired with chromic gut sutures. No drainage was employed, and the wound healed by first intention.

The case is, of course, not an example of a rarity, but the very early age of the patient and the doubtful diagnosis make it interesting and instructive.

Manchester.

### NOTE ON A CASE OF NODULAR FIBROMYOSITIS.

BY ROBERT KNOWLES, M.R.C.S. ENG., L.R.C.P. LOND.,
CAPTAIN, INDIAN MEDICAL SERVICE.

WITH reference to Dr. W. H. Maxwell Telling's most valuable paper on "Nodular" Fibromyositis in THE LANCET of Jan. 21st, p. 154, the following notes of a case may be of interest.

The patient, aged 52, unmarried, with a history of both articular and muscular rheumatism of many years, was convalescent last May from a severe attack of bilious remittent malaria, associated with the presence of malarial crescents in the blood, and treated by rectal injections of quinine sulphate in acid solution. During the first week of convalescence, whilst one day rising from a chair, she was seized with acute pain in the lumbar region; being unable to stand, she sat down on the ground and was lifted into bed. When seen half an hour later the following conditions were found. Skin hyperæsthesia and pain on pressure into the muscles over the lower part of the lumbar region, especially marked on the right side. Movement of the hip-joints was without pain except in the lumbar muscles; and there was no pain along the distribution of the right sciatic nerve on extending it. On picking up the skin with the subcutaneous tissue in folds and rolling it over the subadjacent muscles, three extremely painful nodules, the foci of the pain, were palpable, lying over the aponeurosis. These lay exactly under the surface markings of the first and second posterior sacral foramina of the right side and second posterior sacral foramen of the left side. The upper right nodule was of the size of a large filbert; the other two were slightly smaller.

Cocaine hydrochloride, ½ grain, was dissolved in 30 minims of spiritus rectificatus, and 10 minims of the solution were injected into each nodule deeply. This procedure gave considerable relief, but only for some eight or nine hours. Subsequently a large, hot dressing of antiphlogistine was applied daily over the whole lumbar and sacral region. Thorough rubbing several times daily with iodine (1 part in 10 parts of oleic acid) was then resorted to, and the "lumbago" gradually disappeared. The patient is now (Feb. 7th) in fair health, but all three subcutaneous nodules are still palpable, and are a little tender on pressure.

Malarial neuritis, which one has read of, but not seen, was too imaginative a diagnosis. The patient was, of course, firmly convinced that the nodules were "glands," though one is not aware of any lymphatic glands in that situation. Quinine per os was taken daily during convalescence and subsequently.

Jhansi, India.

### OPERATION AT SEA ON A CASE OF STRANGULATED HERNIA.

BY STANLEY BOTT, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE SURGEON TO THE ORIENT LINE.

DURING the time I was surgeon on the R.M.S. *Orsova* on her maiden voyage to Australia, shortly after leaving Marseilles I was called to one of the quartermasters early in the morning, and found a tense round tumour protruding from the inguinal canal into the scrotum. On applying taxis no result was obtained. Ice-bags were then applied and renewed for some time. Taxis was again applied with negative results. Chloroform was administered and another attempt at reduction was made, this also failing. Late in the evening the patient commenced vomiting and had a dry, brown, furred tongue, with a rapid pulse (150).

An immediate operation was decided upon and Dr. A. Corbyn, a saloon passenger, kindly administered the anæsthetic. After strict aseptic preparations, I cut down upon the hernia, successfully reduced it, and performed a radical cure. The wound healed by first intention.

The patient, it was gathered, had first suffered from hernia seven years ago, being then advised to wear a truss. This he had done till about 12 months previously to the present occasion, when, believing himself to be cured, he had discarded it. During the time of operation the ship was steaming at full speed, yet the man, making an uninterrupted recovery, was back at the wheel within four weeks.

Bude, N. Cornwall.

ASSOCIATION OF CERTIFICATED DISPENSERS.—The fifth annual meeting of the Association of Certificated Dispensers was held in the court room of the Apothecaries' Hall, Blackfriars, E.C., on March 9th, Mr. Montagu Smith, Lewisham Infirmary, presiding. There was a large attendance, the majority of those present being engaged in one or other of the public services. A satisfactory balance sheet was presented. Mr. A. Howell, honorary secretary (Dalston Dispensary), read his annual report, in which it was stated that the association continued to increase in influence and numerical strength, the number of members on the books being about 450, while the extension of the Local Government Board's orders to the Metropolitan Asylums Board service was instanced as a result of the association's activity and alertness. The meeting then re-elected for the ensuing year the three principal officers.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### CLINICAL SECTION.

*Exhibition of Cases.*

A MEETING of this section was held on March 10th, Sir ALFRED PEARCE GOULD being in the chair.

Mr. RICKMAN J. GODLEE showed two unusual cases of Thyroid Tumour. The first was a very chronic soft recurrent growth, the patient being a married woman, aged 54 years, who was admitted to University College Hospital in October, 1905. Four years before a small lump, of the size of a nut, had been noticed in the left lobe of the thyroid. On admission there was a mass 4 inches by 3 inches, reaching down to the sternum and pushing the trachea over to the left. It was soft and elastic and constricted in the middle by a transverse furrow. It was taken for an ordinary adenoma. It was removed through an S-shaped incision. On dividing the thin capsule very free bleeding occurred, so its outer border was quickly exposed, and some large vessels were secured. The tumour was then without delay turned inwards and shelled out without difficulty and cleanly from the gland on the inner side. But she lost a good deal of blood and was much collapsed. She, however, recovered uneventfully. Microscopically the structure of the tumour was said to be much the same as that of normal thyroid tissue, but rather more cellular. She returned in January, 1907. In the isthmus there was a hard lump rather larger than a Barcelona nut attached to the trachea, and several soft swellings occupied the right side of the neck, apparently glands, which had been first noticed in December, 1906. The glands were removed without difficulty and were found to be full of a soft growth. The apparently hard tumour in the isthmus was also really soft and broke on attempting to remove it, so the remainder was scraped away with a sharp spoon. The wound healed rapidly. The growth consisted of closely packed spheroidal cells with fine intercellular stroma, which in most places was occupied by capillaries and small blood-vessels. Scattered through the section were seen round or oval spaces lined by a single layer of cuboidal cells resembling those of thyroid tissue, most of them empty, but a very few containing colloid material. Some parts of the section showed tissue like that of lymphatic gland. Recurrence had gradually occurred in the glands on both sides of the neck, which was now occupied by large, rounded soft masses, which were moveable, but which, except from their size, caused the patient no inconvenience. A free administration of thyroid extract had not appeared to influence their growth, which was very slow. Notwithstanding the extreme chronicity of the case, it seemed doubtful if any further operation were justifiable.

Mr. GODLEE'S second case was one of Extensive Aberrant Thyroid Tumours cured by partial removal and administration of thyroid extract. The patient was a man, aged 29 years, who was admitted in June, 1908, with an extensive swelling of apparently soft glands on the right side of the neck; one larger than a large walnut was situated behind the jaw, and there was a similar lump beneath and behind the sterno-mastoid, reaching down to the clavicle. The thyroid appeared to be normal. The swellings had been coming for two or three years, and had caused slight pain. The patient had never had such swellings before. It was supposed that they were tuberculous glands, but they had more the appearance of lymphadenoma. On exposure at operation on June 6th the veins on the surface at once suggested thyroid tumours. They were all easily cleared on the outer aspect, but all were adherent on the under surface to the deep vessels by dense fibrous adhesions, which it was necessary to cut through, unless the carotid arteries, the jugular vein, and the accompanying nerves had also been removed, which was, of course, out of the question. Accordingly, when the operation was completed a hard mass as thick as the thumb was left, extending from the mastoid process to the clavicle, and no hope was entertained that further development would not occur. There was apparently no attachment to the thyroid gland, which appeared to be normal. The mass on section looked like rather brown thyroid tissue, but in the deeper parts were some masses of yellowish-white material, tougher in consistence than the rest. A microscopical section showed that the greater part consisted of tissue resembling that of the thyroid, but there were in some parts masses of small round cells. He was at once put on thyroid extract, which he continued to take for some time, and this was followed by a complete disappearance of the hard mass, and he wrote that there had been no recurrence up to the present time, that was two and three-quarter years since the operation. Mr. Godlee said that he showed these cases together, not because they were similar, but because they were both thyroid tumours and both peculiar. The first was exceptional because it was evidently a malignant growth, but the malignancy was of a very mild type. There was none of the rapid adhesion to surrounding parts, and even now, after ten years, there was very little interference with the patient's comfort or with her general health. The second was still more remarkable, because it could hardly be looked upon as a case of aberrant thyroids. The mass clinically had all the appearance of a malignant tumour. But a very incomplete removal, accompanied by the exhibition of thyroid extract, had apparently been followed by a complete cure.

Mr. C. H. PRING and Mr. ARTHUR H. EVANS showed a case of Graves's Disease and described the treatment, first by medical methods and later by excision of one of the lobes and the isthmus of the thyroid gland. The patient, a woman, aged 45 years, first sought advice in April, 1908, on account of various nervous symptoms—headache, tremblings, and excitability, with flushings. These were attributed to the menopause and treated accordingly. Improvement resulted. The patient's weight was then 8 st. 12¾ lb. In May and June, 1909, she was again suffering from vaso-motor disturbances, profuse sweatings, tremor, and rapid cardiac action, but no complaint of the thyroid gland was made and no alteration in it noticed. Belladonna and potassium bromide were given and opium later to control diarrhœa, which commenced about this time. Neither of these drugs was of much use. Phosphate of soda was given without any good effect. The patient's weight was 8 st. 6 lb. In February, 1910, the gland was first noticed to be enlarged. Thyroid extract was given and apparently did more harm than good. Rest in bed was ordered; arsenic and ergot were tried internally, with local applications of iodine in various forms. The enlargement subsided for a few weeks, but then reappeared, and suffered no further diminution in size. There was no exophthalmos, but the rapid cardiac action, trembling, sweating, and diarrhœa were increased, and gave rise to considerable anxiety. Loss of weight continued (7 st. ½ lb. in July, 1910). Suprarenal extract was given, and the changes were rung on all the drugs recommended, but in no single instance was any good effect seen. In August, 1910, the patient was very ill and went to Broadstairs for a month. After her return she was exceedingly emaciated, the pulse was very rapid and irregular, there was commencing exophthalmos, the diarrhœa was persistent, and her condition altogether caused the gravest fears. Her weight had fallen to 6 st. 7 lb. It was obvious that unless some radical change could be made in her condition the patient would not live many weeks, and although the gland was by no means large the question of operation arose. Mr. Evans saw the patient on Oct. 7th, 1910. The pulse was then 130 and irregular; the heart's impulse was "bounding"—there was no cardiac murmur; she had marked tremors; her weight, which originally was 9 st. 2 lb., when taken two weeks ago was 6 st. 7 lb. There was no obvious exophthalmos, but slightly marked von Graefe's sign. She felt as if she "could not get her breath," and if she happened to be in a hot room she had to "come out gasping." The vocal cords moved freely, and the trachea showed no indentation. On Oct. 13th there was marked augmentation of the symptoms. She had obviously wasted, and she weighed not more than 6 st.; the right lobe of the thyroid had increased in size, and the left was beginning to enlarge; the pulse was very irregular and uncountable at the wrist, but listening over the heart it was reckoned at 148 and 152 per minute; there was marked pulsation in the neck. The following day the right lobe and isthmus of the thyroid were excised. The anæsthetic was given by Dr. Cecil H. M. Hughes and the patient occasioned him no anxiety. There was nothing worthy of note as regards the operation save that there was a good deal of trouble in

"shelling out" the thyroid, the loose (veal-like) connective tissue, out of which the thyroid is usually shot with a sweep of the finger, being more fibrous and more firmly adherent to the surface of the gland than usual, so that some vessels were torn in the separation. The gland was so adherent to the upper rings of the trachea that the gland in that situation was torn through leaving a thin layer of the thyroid adherent to the trachea. Into the lowest part of the wound a gauze drain was inserted and also a rubber drainage-tube, the lower end of which was brought out through a small opening above the sternal notch. Two hours afterwards the pulse was 120 and regular. Next day the dressings were changed and were sopping with secretion from the torn surfaces of the thyroid. On the second day after the operation the pulse-rate was 120 and 104; on the third day 98 and 106; on the fourth 100 and 88; and from that day onwards it was about 88. On Nov. 3rd, when the patient left, the weight was 7 st. She wrote on Dec. 9th saying: "I am now 8 st.; I have a very good appetite without the aid of medicine; I feel quite a different being, and life is now worth living." On Jan. 8th she wrote: "I am now 8 st. 8 lb. I think I am quite fat enough."

Mr. W. TROTTER described a case of Carcinoma of the Thyroid in which the patient had been operated on by him 3½ years ago, the condition then showing extensive involvement of lymphatic glands. There was no recurrence.—A discussion followed in which Dr. LEONARD WILLIAMS, Dr. R. HUTCHISON, Dr. W. P. HERRINGHAM, Mr. C. GORDON WATSON, and Mr. W. SAMPSON HANDLEY took part.

Mr. H. A. LEDIARD (Carlisle) described a case of Benign Cyst of the Tibia. The patient was a girl, aged 14 years, who was brought to the Cumberland Infirmary on August 14th, 1910, on account of a large swelling in the lower third of the left leg, which had been growing for nine months, so far as it had been observed. At first there was no pain, but more recently, when weight was put on the leg, as in walking, pain was felt. During the three months prior to admission the swelling in the leg had increased considerably. On the left leg a well-marked swelling of the tibia was seen, which involved the lower third of the bone, reaching almost to the ankle-joint. The swelling was uniform in outline and pear-shaped, the widest part being above the ankle, and the apex tapered off into the normal bone above. The swelling was firm to the touch, and the skin over it was tightly stretched, but not adherent. No egg-shell crackling was obtained. There was no alteration in the colour of the skin over the swelling, nor were any vessels visible. No tenderness was present except on firm pressure. There was no rise of temperature locally or generally, and the general condition of the girl called for no comment. In order to discover the nature of the swelling a trephine was used over the inner aspect of the swelling. The bit of bone removed was exceedingly thin, and presented no obstacle to the saw. The finger discovered a large cavity in the bone, which contained a clear watery fluid, slightly tinged with blood. No spicules of bone were detected, but a smooth thin membrane lined the cavity. The bone appeared to be very thin and expanded uniformly all round. The fluid from the cyst was not saved for examination. A few days later the limb was amputated at the knee-joint. The girl recovered and left the hospital on Oct. 1st. The swelling of the bone was consistent with a sarcoma, or with tuberculous disease of the medulla, and, as matters turned out, with a cyst of the bone. The absence of constitutional disturbance gave no indication in any special direction. There was no egg-shell crackling. The age of the girl favoured the presence of sarcoma, but the surface of the swelling was even all over and shaded off above into the normal bone at the junction of the middle and lower thirds of the limb. When the trephine was used it was seen that an expansion of the bone into a thin shell was the disease to be dealt with. Prior to any interference a radiograph was taken, and it showed a uniform smooth-surfaced swelling of the tibia, and a light shadow in contrast with the dark one of the healthy bone of the shaft above the cyst. At the lower part the swelling ended abruptly at the level of the epiphysis. To those experienced in the radiography of bone cysts, the radiograph of this case might be conclusive. Beck was the first to allude to the diagnostic differentiation of bone cysts by radiography. He said, "The radiograph yields a clearly bounded line of cortex of the thickness of letter paper, forming a frame for a quite transparent oval surface of spindle form. The cohesion of the outer rind is nowhere broken. The epiphyses are normal."[1] Lexer had attributed a high value to the radiography of bone cysts, but other observers had not been so impressed. Rumpel had concluded that cysts of bone could be distinguished from sarcomata by radiography. In 1907 Jones and Morgan wrote on "Benign Cysts of the Long Bones," and stress was laid by them on the value of radiography in the diagnosis. Since then Mr. Hugh Lett had published a radiograph of a cyst of the humerus upon which he operated with success.[2] There could be no doubt that radiography was of great value in aiding the diagnosis of these cases, even if it could not be said to give a conclusive verdict when it was brought into use in bone cysts. In Mr. Lediard's case the radiograph showed no thin dark line bounding the cyst suggestive of the thin shell of bone which was found and could be seen in the specimen or photograph. Amputation was resorted to because the diagnosis leaned to a malignant growth, and not because the limb might have been unserviceable if a less drastic means had been adopted. The cyst measured 3¼ inches in length and 2½ inches in breadth. The shell of the bone was very thin, and before long egg-shell crackling would have been present, and a great liability to fracture. The growth of the cyst was actively proceeding in all directions, upwards in the shaft of the bone, backwards in the direction of the Achilles tendon, forwards as well as downwards, invading the epiphysis. Microscopically there was no evidence that the cyst had developed from a growth, and no cartilage was found in connexion with the cyst formation. The formation appeared to be caused by a process of absorption, probably starting in the marrow and gradually extending outwards with expansion of that part of the shaft.

Dr. HUTCHISON showed a case of Splenomegaly (? Congenital Family Cholæmia), and two cases of Secondary Anæmia associated with Achylia. Referring to the last two cases, Dr. Hutchison pointed out that achylia was well known in association with pernicious anæmia, and that the cases suggested that any severe anæmia of long duration might also be associated with it. He drew attention to the persistence of the achylia in the first of the two cases after the disappearance of the anæmia, and commented on the simulation of latent carcinoma of the stomach by such cases.

Dr. JAMES COLLIER and Mr. J. P. LOCKHART MUMMERY showed a case of Tabes Dorsalis with early rectal crises.

Dr. LEONARD G. GUTHRIE exhibited two cases of Muscular Atrophy of the Peroneal Type (Charcot, Marie, Tooth) in father and son.

Dr. HERRINGHAM showed a case of Septic Gastritis.

Mr. EVANS furnished a subsequent report on a case of Excision of the Larynx, Lower Part of the Pharynx, and Upper End of the Œsophagus for Malignant Disease (Squamous-celled Carcinoma) of those structures. The patient, a female, aged 40 years, was shown at a meeting of the Clinical Section on Nov. 12th, 1909.

## SECTION OF ANÆSTHETICS.

### *The Use of Scopolamine and Morphine, Atropine, and Similar Drugs by Injection before Inhalation Anæsthesia.*

A MEETING of this section was held on March 2nd, Dr. W. J. MCCARDIE, the President, being in the chair.

Dr. DUDLEY BUXTON, who opened the discussion, pointed out that the use of combined anæsthesia—that is, the employment of some narcotic or alkaloidal drug given antecedently to the inhalation of a general anæsthetic—was no recent innovation. Claud Bernard, Regnier, Julliard, Dastre and Morat, Demarquey, and many others had advocated and practised the method. The use of morphine before chloroform or ether had been shown to possess certain drawbacks, so that it was not until Schmidt isolated scopolamine, and it was shown by Schneiderlin that this drug, combined with morphine, rendered it possible to avoid many of the dangers of morphine when given alone, that the recent revival of the combined method became possible. The school represented by Gauss, Korff, and others had attempted to use these drugs alone and to produce the "dämmerschlaf," or dawning sleep, in lieu of inhalation anæsthesia. Outside the confines of midwifery this method, whatever its merits within that restricted area, had proved insufficient for general surgery. To supplement it the practice had grown of employing these drugs alone or

[1] Archives of Clinical Surgery, vol. lxx.
[2] THE LANCET, Oct. 22nd, 1910, p. 1202.

associated with other alkaloids by hypodermic injection and following this by inhalation of ether, chloroform, and other general anæsthetics such as nitrous oxide, as advocated by Dr. Crile, chloride of ethyl, and various mixtures and successions. Those who had pursued this plan had published series of cases, some spoke in favour, others were less certain of the merits of the procedure. Again, scopolamine had been recently advocated to obviate the nervous strain which all feel was the worst feature incident to intra-dorsal injection. The speaker pointed out that as yet the subject was only in the stage of trial. We had yet to learn its dangers and the best technique, and to decide what drugs and what doses should be given. It was time that the pharmacology of scopolamine and morphine was well known, but we had yet to obtain experience of their interaction with general anæsthetics, especially under the varying conditions presented by patients suffering from multifarious pathological lesions. He quoted a number of authorities and gave their results, which upon the whole were favourable. That the method of combined anæsthesia presented special difficulties and dangers he admitted, but he submitted that the former were capable of being minimised by care and forethought, and the latter would disappear when the technique was better understood and more carefully elaborated. In reference to the actual drugs, the speaker spoke of the researches of Dr. Sahli, who proposed using the chlorides of the alkaloidal bodies of opium as safer than morphine, and guarding the effects of scopolamine by attention to the requisite dosage of individuals. Atropine became, he thought, an essential addition when open ether was used, as although scopolamine produced similar effects, yet when combined with morphine its action in that direction was insufficient to counteract the injurious results of unstinted doses of ether. In the mutually synergent action of alkaloids associated with general anæsthetics, especially when oxygen was used, Dr. Dudley Buxton believed that the best results were obtainable. The method removed pre-anæsthetic alarm, lessened the amount of the general anæsthetic, and so diminished after-effects, and gave prolonged post-operative sleep and mental tranquillity.

Dr. H. MACNAUGHTON-JONES said that he had been using scopolamine-morphia and chloroform anæsthesia in serious abdominal and pelvic operations for nearly five years. The great majority of these had been done under this method. A subcutaneous injection of 1/6 gr. of morphia and 1/100 gr. of scopolamine were given the night before, after the bowel had been well emptied; a second injection was given the following morning, after a rectal enema; and one hour before operation 1/36 gr. of strychnine and 1/100 gr. of atropine were administered subcutaneously. In some instances only one injection was given, that on the morning of the operation. He had only had time to look up the last 30 of his cases, which might be taken as typical of the effect and advantages of this form of anæsthesia. In regard to vomiting, in 18 of these cases there had been little or no sickness; some sickness occurred in the instance of five patients on the day of operation; and four had not vomited until the second day. Only in one case had there been persistent vomiting. In this three cœliotomies had been performed at comparatively short intervals. It was clearly a case of idiosyncrasy. The patient had been operated upon previously under chloroform anæsthesia, and there had been persistent vomiting for some days. The condition antecedent to operation was, as Dr. Dudley Buxton had stated, favourable, from the calm and rest of the previous night, and her indifference at the time of operation. There was the great advantage of the minimum of chloroform in proportion to the severity and length of operation, as well as the certainty of the quantity inhaled. There was decidedly a better condition the day of the operation, greater calm and less pain. In not one single instance in any of the operations had an untoward symptom arisen from this method of administration. He spoke in praise of the Vernon-Harcourt regulator, of which he had had experience since it had first come into use. He had not used scopolamine and morphia with ether. He had reserved its administration for abdominal operations. He thought that the time had arrived when, with their present knowledge, anæsthetists might more definitely formulate the conditions demanding certain methods of administration and the nature of the anæsthetic indicated. Thus greater uniformity of administration would be arrived at.

Mr. F. S. ROOD recorded 300 cases and furnished the following particulars. The injection of scopolamine, morphia, and atropine, 1/100, 1/6, and 1/120 grain respectively, was given 45 minutes before operation. The patient was then left in bed with screens around or in a darkened room. The anæsthesia was commenced in bed and complete surgical anæsthesia obtained before moving the patient. In the first 50 cases 1/100, 1/120, and 1/6 grain of scopolamine, atropine, and morphia respectively were given to the women, while in the case of the men a preliminary injection of 1/6 grain of morphia one and a half hours before operation was also given. In the remaining 250 cases all received 1/100, 1/120, and 1/6 grain, with the exception of ten children between 10–16 years, who each received 1/120 of scopolamine, 1/120 of atropine, and 1/8 of morphia. In 167 cases the patient was profoundly asleep at the time of induction of anæsthesia, in 131 cases very drowsy and indifferent, and in 2 cases no narcotic effect was produced. In 40 cases ether by the open method was employed from the commencement. It was found that the pungent ether vapour sometimes caused those patients who were only drowsy to wake up. In 260 cases anæsthesia was induced with chloroform by the open method and continued with ether. In most cases the respirations during operation were indistinguishable from, or even quieter than in, chloroform anæsthesia. In 15 cases of men of a plethoric, muscular type the respirations were certainly exaggerated, but even in these cases the movement of the abdomen was certainly much less than with ether alone. There was a marked insusceptibility to reflex troubles, respiratory or cardiac. Of 20 cases of thyroidectomy, including 12 exophthalmic goitres, there was stridor during the enucleation in one case only, and in no case was the pulse accelerated. The relaxation obtained appeared to be in direct proportion to the amount of ether given. The absence of mucus was a great advantage whilst maintaining a deep anæsthesia, whilst the quiet respirations were obviously an advantage in abdominal surgery. As to after effects, the patients usually remained unconscious, breathing regularly from 3–5 hours after operation. In 23 cases in which the operation lasted over two hours the average period of unconsciousness was six hours; in 5 cases where there was rather severe shock, lasting seven hours. With regard to after vomiting, 144 cases did not vomit at all; 135 cases vomited once or twice; and 21 vomited several times during the first few hours after recovering consciousness. In those cases where vomiting occurred it did not take the delayed type. He concluded that from the point of view of the patient the method blotted out or robbed of its terrors the preliminaries of an operation, which in some cases—as, for instance, exophthalmic goitre—was a very real advantage. Also it diminished the discomforts of after-pain, &c., by lengthening the period of unconsciousness, and vomiting certainly seemed to be lessened. From the point of view of the operator the quiet respiration and relaxation which were usually obtained were of great assistance, and finally there was the undoubted advantage of being able to substitute, with equal results, a safe drug like ether for a dangerous one like chloroform.

Dr. J. BLUMFELD stated that he had used morphia and atropine before various general anæsthetics, and considered that less mucus and additional quiet were obtained. He had heard from Mr. H. M. Page, a member who was unable to be present, of cases of respiratory difficulty and actual cessation of respiration from morphia administered too shortly before the operation, its effects deepening while this was proceeding.

Dr. G. A. H. BARTON said he used 1/100 grain scopolamine and 1/6 grain morphia three-quarters of an hour before operation. He found it specially useful in laryngeal and œsophageal work. He found induction shortened and abdominal rigidity diminished. The open ether method was used. There was also less tendency to shock, which counterbalanced the occasional tendency to respiratory difficulty.

Dr. J. F. W. SILK said the subject under discussion was not new, but had come up at intervals during the past 20 years. There was difference of opinion as to rigidity, some finding less, others more, when scopolamine and morphia were used. In the latter cases he thought probably too little anæsthetic was used. There was also a good deal of uncertainty about the duration of stupor and the frequency of vomiting.

Mrs. DICKINSON BERRY stated that she had used atropine and morphia, 1/100 and 1/6 grain, in some cases and thought that vomiting and restlessness had been increased. Scopolamine had recently been added in a few cases and better results were obtained.

The PRESIDENT considered that the effects of the drugs

depended largely on what preparations were used. He found some of the German preparations were far more satisfactory than any of the English ones. He used them when light anæsthesia was required, and found the effect was to deepen the anæsthesia from the surgeon's point of view and to lighten it from that of the anæsthetist. With regard to atropine, he observed that though it was considered generally to stimulate the heart, recent investigations made by Webster of Winnipeg pointed to its producing a paralytic effect on heart muscle.

## LARYNGOLOGICAL SECTION.

*Exhibition of Cases and Specimens.*

A MEETING of this section was held on March 3rd, Dr. P. WATSON WILLIAMS, the President, being in the chair.

Professor HOBDAY, F.R.C.V.S., gave a short address, and showed specimens of the Equine Larynx illustrating the results of the "ventricle stripping" operation for the relief of the conditions known as "whistling" and "roaring" in horses. The operation consists in removing the mucous membrane completely from the pouch or ventricle at the back of the paralysed vocal cord with the idea that two raw surfaces will thus be made, the two sides of the ventricle adhere together, and thus completely obliterate it. It thus follows that the paralysed vocal cord which is the cause of the "roaring" must of necessity be retracted out of the lumen of the larynx, and become firmly adherent to the wall of this organ. An interesting discussion followed, and it was generally considered that the operation could have but a very limited application as regards the human larynx.

The PRESIDENT showed a case of Carcinoma of the Larynx operated on for malignant disease on Nov. 9th. The patient was a woman aged 40 years. The voice was good, but some members were of opinion that signs of recurrence were present.

Mr. J. GAY FRENCH: Endothelioma of the Palate with Metastatic Growths in the Neck, which had derived great benefit from treatment with radium, the amount used being 50 milligrammes.

Mr. HERBERT TILLEY: 1. A Portion of a Rabbit's Bone removed from the Right Bronchus after three years' impaction, and which had produced signs of bronchiectasis. Skiagraphy in this case had failed to reveal the presence of any foreign body. 2. A Tooth removed from the floor of the right maxillary antrum.

Dr. W. H. KELSON: Tumour of the Right Side of the Neck involving the Pharynx, in a woman aged 30 years. The growth was a very slowly growing sarcoma, taking origin apparently from the transverse processes of the cervical vertebræ. Owing to the agonising pain suffered an operation had been performed by the exhibitor and as much as possible of the growth removed, with complete relief to the pain. Rapid healing had taken place.

Dr. L. HEMINGTON PEGLER: (1) A case of Ulceration of the Pharynx in an old man, possibly connected with pyorrhœa alveolaris; (2) Party-wall Cancer of the Larynx and Œsophagus in a woman aged 45 years; and (3) Tuberculosis of the Larynx in a woman aged 55 years.

Dr. DAN MACKENZIE: 1. Antrum Suppuration treated by Nasal Antrostomy, followed by blocking of the nasal duct. The exhibitor thought that the duct must have been wounded at its lower end at the time of the operation. (In the discussion that followed the view of many members was that temporary epiphora after the radical operation on the maxillary antrum is not uncommon.) 2. Cicatricial Obliteration of the Naso-pharynx due to Hereditary Syphilis. The patient was a male, aged 27 years. When first seen the soft palate was found to be caught up and adherent to the posterior wall of the naso-pharynx, and was practically represented by a mass of scar tissue. Through this a small foramen led into the nose. Attempts were made to dilate the opening with a laminaria tent, which broke off, leaving a piece inside. Ulceration followed with formation of a clear opening, the result being that the patient could now blow his nose satisfactorily.

Dr. H. LAMBERT LACK: A woman with (?) Lupus Erythematosus of the Mucous Membrane of the Cheeks of over 12 months' standing. Various treatments had been adopted, including removal of all the teeth, under the impression that the cause might be sepsis, but nothing had so far been found to cure it.

Mr. SOMERVILLE HASTINGS and Dr. KELSON: Burrs of Special Shape and Construction for use in the radical maxillary antrum operation, by the intranasal route.

Dr. W. JOBSON HORNE: Loss of Voice in a young man, aged 20 years. It had come on gradually over two years, getting much worse during the last four or five months, and was accompanied by dysphagia. Sputum was plentiful and physical signs were present in the chest.

Mr. FRANCIS F. MUECKE: A case of "Ventricular Voice" in a woman aged 28 years; hoarseness was first noticed when three years old, after scarlet fever. Since about 15 years old the voice had got gradually better. The general health of the patient was good. The left vocal cord could not be seen; the right was atrophied; the ventricular bands were rounded, large, and on phonation came closely together, the arytenoids turning inwards and assisting to close the glottis.

# SOCIETY OF MEDICAL OFFICERS OF HEALTH.

*The Treatment of Phthisis by Industrial Insurance.*

A MEETING of this society was held on March 10th, Dr. W. G. WILLOUGHBY, the President, being in the chair.

Dr. T. D. LISTER read a paper upon the Treatment of Phthisis by Industrial Insurance, with special reference to the Benenden Sanatorium. He said that among the industrial classes the want of immunity to consumption chiefly depended upon ignorance, lack of sunlight, fresh air, and ventilation, and lack of a certain standard of living. Immunity to the disease was usually lost slowly and with difficulty, and with much greater difficulty than it was ever regained. While the conditions under which many of the working classes spent their time remained as they were, progress towards a successful conclusion of the anti-tuberculous campaign was bound to be slow. The greatest difficulty to be faced was an educational one. After giving an account of the steps in the development of the German system of insurance of workmen, he referred to the formation of the National Association for the Establishment and Maintenance of Sanatoria for Workers, which erected in 1906 the Benenden Sanatorium in Kent. Beds in this institution may be maintained by workers' organisations at an annual charge of £65 per bed and by local authorities of £78 per bed. Additional temporary accommodation may be obtained by workers' organisations at a cost of 25*s.* per week for each bed, and by local authorities at a weekly cost of 30*s.* per bed. Poor-law patients are not received into the sanatorium. The average weekly cost of each patient is 26*s.* 1*d.* Taking into account the condition on discharge, 81 per cent. of those who left the sanatorium with the disease "arrested" were still doing full work from more than six months to more than two years after their discharge, while 37 per cent. of those who left as "improved" and 7 per cent. of those who left "unimproved" were doing full work at the same periods after discharge. Among workers' organisations the largest amount of support of the institution comes from the Post Office employees, nearly 50,000 of whom subscribe 2*s.* annually to the funds. After referring to the inactivity of the great friendly societies as regards the cure of consumptive patients, although they were paying away over £1,000,000 yearly in the relief of those suffering from the disease, Dr. Lister expressed the opinion that this inactivity was due to the fact that the disease arose in faulty educational methods, in faulty hygienic conditions of employment, and in bad housing, and because the admission of the name of the disease often meant, under present conditions, the break-up of the home.

Dr. J. R. KAYE and Mr. HERBERT JONES spoke in approving terms of the arrangements which they had seen at the Benenden Sanatorium.

Dr. F. C. SHRUBSALL urged that the success of a sanatorium was mainly due to its management, and that a suitable superintendent was more important than a suitable locality or elaborate arrangements for ventilation and the prevention of dust traps. Sanatorium patients must be taught the best way to manage their lives when they returned to their homes, so the institution arrangements should approximate to those in the homes. He emphasised the importance of a patient returning to his own work, and not to work apparently less

arduous but most probably also less well paid. Starvation was a worse disease than tuberculosis.

Mr. C. H. GARLAND advocated the extension of the Edinburgh method of dealing with tuberculosis to the whole kingdom. This, he considered, was too vast an undertaking for voluntary effort, and could only be carried out by the State under some system of insurance.

Dr. J. S. TEW urged the importance of simplicity in sanatorium treatment and of making the patients perform suitable work.

Mr. E. H. T. NASH pointed out that it must be brought home to the working classes that the prevention of tuberculosis was a working class question. He considered that a main factor in dealing with the disease was food, and agreed that every patient should be encouraged in the hope of returning to his own work.

Dr. C. SANDERS spoke of the importance of dealing with the family of a consumptive bread-winner.

Dr. W. BUTLER and Mr. F. E. FREMANTLE also took part in the discussion.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

*Duodenal Ulcer: its Diagnosis and Treatment.*

A MEETING of this society was held on March 1st, Dr. BYROM BRAMWELL, the President, being in the chair.

Professor F. M. CAIRD introduced a discussion on Duodenal Ulcer; its Diagnosis and Treatment. He said that of recent years their knowledge of gastric and allied affections had been advanced by the freedom with which abdominal exploration was practised in order to substantiate a diagnosis, to combat certain symptoms, and to establish a definite line of treatment. As a result of this their appreciation of the relative value of symptoms had been increased, and they were in a better position than formerly to judge the rôle these should play in guiding them to a definite conclusion; they could with greater accuracy recognise special ailments and the treatment appropriate to each. It would be conceded that a correct diagnosis was their highest aim, and could they only formulate a definite method of obtaining this with sufficient exactness the question of treatment would be practically settled. As to the diagnosis of duodenal ulcer, it had been asserted that certain prominent symptoms might be grouped together as peculiar to duodenal ulcer which were not common to gastric ulcer. This important symptomatic differentiation originated mainly in the Leeds School, and they might here acknowledge their debt of gratitude, more especially to Mr. Moynihan, for the stimulating, dogmatic, and bold pronouncement he had made on this subject. Moynihan held that a careful elucidation of certain symptoms apart from any objective examination of the patient might lead them to form a correct diagnosis as to the existence of duodenal ulcer. He believed that in typical instances there would be found a long-standing history of intermittent dyspeptic attacks, aggravated during the colder seasons, occurring chiefly in males from 25 to 45 years of age, characterised by gastric discomfort and pain, which followed two to six hours after the chief meal, gave rise to a sense of hunger, was relieved by taking food, and frequently awoke the patient during the night. Hæmorrhage, a late symptom, took the form of melæna; and vomiting, infrequent, became more pronounced as stenosis due to cicatrisation progressed. Beyond local tenderness present in some cases they were informed that there was no objective sign of substantial value, and it was indicated that a test meal usually showed less free HCl than normally. They were therefore presented with features which differed considerably from those commonly met with in chronic gastric ulcer, in which condition they found that pain came on shortly after ingestion of food and was not relieved by eating, where the hæmorrhage took the form of hæmatemesis, where vomiting might be frequent, and where the HCl was increased. While they admired the happy terms and trenchant style in which Mr. Moynihan expressed the duodenal ulcer syndrome, they were not clear that it was so easy to differentiate from symptoms alone the position of ulcers which might lie in such close neighbourhood as on one or other side of the pylorus. They were ready to welcome and admit the general truths he stated, but Professor Caird had met with cases where no duodenal ulcer existed although the typical symptoms were present, just as in their entire absence the ulcer might occasionally be disclosed. Professor Caird narrated an illustrative case. He was also able to recall cases of perforated duodenal ulcer which had exhibited no antecedent symptoms. They might leave to the physician the important task of indicating the more salient points in diagnosis which enabled one to differentiate between the allied forms of ulceration, the results of hyperchlorhydria, the various types of dyspepsia due to latent or hidden appendicitis and cholelithiasis, since they were chiefly concerned with the early, and therefore less pronounced, manifestations of these affections in which their diagnostic acumen was of such service. He believed that the application of general principles, careful consideration and examination should preclude error even in difficult cases. He had noted that the test meal in cases of duodenal ulcer showed the presence of HCl in excess. He also looked to the physician for a statement as to what seemed the most useful lines of treatment, for it would be naturally believed that, if the patient sought advice during the early stages of duodenal ulcer at least, healing might be effected under suitable care and regimen. The fact that recurrence might take place at a later date after apparent cure, just as it might follow, although more rarely, surgical intervention, left them with a suspicion that they had not yet arrived at the primal source of the disease. That duodenal ulcer was most prone to originate in the first part of the duodenum, and became less frequent as they receded from the area which received the acid outflow from the stomach, had long been recognised. Fuller information was required as to the sex incidence, and they wished to know the cause of the initial death of tissue which left an ulcer which refused to heal as long as it was washed by the acid gastric contents. Was the ulcer of embolic, toxic, or traumatic origin? Failure to detect a duodenal ulcer even after surgical investigation had been followed by the actual demonstration of such after death. As to the appearance of the ulcer, Professor Caird had observed (1) silvery white patches of about the size of a threepenny piece, sometimes rather stellate in outline, superficial in character, and with the slightest or almost no trace of thickening; (2) cicatricial puckerings with adhesions and pouches and varying degrees of stenosis but with well-developed crateriform thickenings had been rarely met with; and (3) large tumour-like inflammatory masses adherent to the liver and gall bladder, and free from the pylorus. Such conditions might by traction evolve symptoms which complicated the diagnosis. Surgical treatment of duodenal ulcer consisted primarily in the formation of an anastomosis between the stomach and the jejunum. The curative effect was ascribed to the local rest which was given to the affected area. It was practically a system of drainage whereby the irritating gastric contents were diverted from the normal route through the pylorus and duodenum; in addition to this, the alkaline contents of the duodenum mingled with the gastric secretions and mitigated their acidity. They were aware that the natural functions can even be well performed after loss of the pylorus, and the screen had shown that the aperture in gastro-enterostomy might assume the function of the pylorus until such time as the ulcer healed. He had no desire to emphasise the surgical aspect of treatment, but as a rule posterior gastro-jejunostomy was recognised as the principal curative agent, but with it some surgeons believed that it might be combined with adjuvant treatment of the local lesion in the shape of excision of the ulcer, infolding or inversion of the affected area, or complete closure of the pyloric ring. Others again had not hesitated to excise the whole segment of the affected bowel, following this up by an end-to-end junction. That such measures should become a matter of routine he doubted; excision in any form meant increased risk. It might be admitted that total closure of the gastric outlet might ensure greater rest to the affected area, but it was questionable if the gain was so marked as it might appear at first sight, since in the presence of a gastro-jejunostomy all the food was apparently transmitted by the new route only, and the pylorus did not resume its function in this way until the ulcers had healed. It might be urged that closure of the pylorus effectively prevented a *circulus vitiosus*, but this did not occur in well-executed operations. It might also be advanced that greater security was afforded to the patient, and that by such additional measures less opportunity was

afforded for the return of ulceration. But it had to be remembered that recurrence might take place after surgical operation for duodenal ulcer, although personally Professor Caird had no such experience, and it had yet to be established that the various tempting additions to a simple gastro-jejunostomy lessened this tendency to any marked degree. The results of operation were brilliant, and he could not recall a single instance where a gastro-jejunostomy practised for a duodenal ulcer had been followed by a return. Examination of the gastric contents months after operation had given varied results. It might be noted that in some instances the excessive acidity had been restored to the normal standard. The question of interference to check hæmorrhage in the form of a melæna which threatened life was one in which he had had no experience. In one case a simple gastro-jejunostomy performed for duodenal ulcer with fibrous induration and adhesions, all left undisturbed, was succeeded immediately by severe pain and symptoms which simulated those of perforation. The pallor, small pulse, and lack of abdominal rigidity gave the key to the situation, and the evacuation of large quantities of blood proved what had occurred. Perforation of a duodenal ulcer exhibited symptoms which as a rule differed only in degree from those of similar gastric lesions near the pylorus. The history or lack of history of indigestion, right-sided tendency of the pain and tenderness might aid one in arriving at a diagnosis. A diagnosis between gastric and appendicular perforation was often not easy.

Dr. WILLIAM RUSSELL said that on the subject of duodenal ulcer there had been a great deal of confused writing. He ventured to submit certain propositions which were the result of his own experience: First, duodenal ulcers were in all respects analogous to gastric ulcers and might be classified as acute, chronic, and perforating; secondly, in both duodenal and gastric ulcers marked disturbance of the gastric functions preceded or was associated with the lesions. There were exceptions to this rule, however. The chief gastric disturbance was hyperchlorhydria. One point had to be borne in mind, and that was that the lesion in both acute gastric and acute duodenal ulcer might, judging by its speedy recovery, be a superficial erosion, although associated with hæmorrhage. In the diagnosis of duodenal ulcer one must be able to differentiate between, and to treat successfully, the different disorders of gastric function, because on the *failure* to remove certain symptoms the diagnosis of duodenal ulcer might depend. Acute duodenal ulcer often came on during the course of an attack of hyperchlorhydria. Acute ulcer was in his experience easy to cure as a rule. Within the last few months Dr. Russell had seen three cases of acute duodenal ulcer associated with severe melæna, and all had rapidly recovered on appropriate diet and medical treatment. Duodenal ulcer might heal as completely and speedily as gastric ulcer. The very fact that one failed to arrest melæna or the pain which ensued two hours or more after taking food was almost a certain proof that the case was one of duodenal ulcer. Then as to chronic duodenal ulcer, some physicians thought that they could cure such cases without gastro-enterostomy. He had doubts as to these being cases of chronic ulcer, and thought that possibly they were cases of derangements of stomach function. When he was convinced that he was dealing with a chronic duodenal ulcer he did not spend much time in endeavouring to effect a cure, but soon advised gastro-enterostomy. Lastly, as to perforated duodenal ulcer, it, of course, required operation. In a case of this kind to which he referred, the earliest symptoms of duodenal ulcer had been ignored in spite of melæna, the ulcer having developed after years of recurring hyperchlorhydria. Other points he had not time to refer to.

Dr. T. W. DEWAR (Dunblane) asked if Professor Caird had noted a history of heredity in such cases. He knew of a grandmother who died either from gastric or duodenal ulcer. She had a family of six; three of these suffered all their lives from dyspeptic symptoms, and one had four children of whom two had had gastrostomy performed. Dr. Dewar himself had suffered from duodenal ulcer with acute discomfort, attended with intervals of good health, though he did not think that the ulcer had ever really been healed. He was seized suddenly with vomiting, which persisted until he was operated upon. The cure had not been entire, and he had had two attacks of melæna.

Dr. GEORGE A. GIBSON said that on looking over his case-books he found that the general expression of hyperacidity was not borne out by his own observations in cases of true duodenal ulcer. The total acidity varied from 0·1 to 0·26 per cent., or a condition of hypo-acidity to slight hyper-acidity and the free acidity varied from 0·02 to 0·18 per cent.; the condition of acidity varied very widely. In cases of recent hæmatemesis or melæna he never dreamt of getting a test meal as its very withdrawal might do harm. He believed that the gastric spasm which accompanied duodenal ulcer prevented the passage of the acid gastric contents after operation. He found it very difficult to separate between acute and chronic duodenal ulcer, and even the diagnosis of this form of ulceration was difficult. He had diagnosed this affection, and at the operation either nothing abnormal was found or it might be a case of gall-stones or appendicitis. He doubted much as to the possibility of accurate diagnosis. He took a gloomy view as to treatment and was sceptical as to the healing of chronic ulcer, and indeed he was of opinion that it did not heal, though the acute ulcer might. He unhesitatingly called in the surgeon's aid at the earliest possible moment whenever he was sure of the disease, and he thought it best to close the pylorus completely as then the best results were obtained.

Mr. C. W. CATHCART said that the mortality in perforated duodenal ulcer was very high. Of 8 cases, 6 were fatal and 2 recovered. In 5 of these there was the typical hunger-pain from 1½ to 2 hours after taking food; in 3 symptoms of chronic dyspepsia were present, and in 1 only slight epigastric pain. Of 25 cases of perforated gastric ulcer, 12 died and 13 recovered, and in the majority of these dyspepsia and pain shortly after taking food were complained of, though in some typical hunger-pain two hours after food was present. The fact that pain disappeared was no criterion that the ulcer had healed. A duodenal ulcer could only be recognised by sight, and it might not be palpable at all.

Professor H. ALEXIS THOMSON said that it was only seven years ago since the first operation for chronic duodenal ulcer was performed, and one had to be gradually educated to the difficulties of diagnosis and treatment, as had been the case with appendicitis. The sex preference in duodenal ulcer was remarkable, as it occurred in only 5 women to 50 males. The relationship to malignant disease was peculiar: a chronic gastric ulcer often became carcinomatous, but he doubted if anyone had seen this change in the case of duodenal ulcer. He always thought that if the pain was much influenced by diet, then the ulcer was likely to be gastric; while if any food might be taken with impunity, then it was probably duodenal. In cases of ruptured duodenal ulcer the best method of transport of the patient was in the sitting attitude. He had not thought it necessary to close the pylorus in operating.

Dr. J. O. AFFLECK said that his own experience was that the diagnosis of duodenal ulcer was difficult; the symptoms were often of a negative character, and the first might be those of perforation or hæmorrhage or they might be masked by the symptoms of other co-existing disease, as in one case the symptoms of advanced aortic disease entirely masked those of duodenal ulcer which was present. An infant who died after acute abdominal symptoms was found to have a perforated duodenal ulcer, and in the case of a woman who died there were 20 ulcers in the stomach and four in the duodenum. As to treatment, he did not think that all cases should be handed over to the surgeon. He had seen many cases of perfect recovery in patients who presented all the clinical symptoms of duodenal ulcer. One patient was too ill for operation and yet made a complete recovery; he had to state, however, that those cases dealt with by the surgeon had been eminently satisfactory.

Mr. HAROLD J. STILES said there were cases which on account of their aberrant symptoms he could not diagnose as cases of gall-stones with adhesions, malignant tumour of the hepatic flexure, &c. He was led to think that hæmatemesis or melæna were not very definite symptoms. He had met with two cases of vicious circle which had resulted from operation for a duodenal ulcer which did not exist. He was not in the habit of closing the duodenum when there was a definite ulcer, but only when there was gastroptosis. He would be chary in diagnosing acute duodenal ulcer, but if the symptoms pointed to it and if severe hæmorrhage were present he would advise operation. He was convinced that gastro-enterostomy did not do any harm to the patient, and young children developed quite as well as healthy children. As explaining the site of duodenal ulcer he said that it

might be due to the vascular distribution. The blood-supply up to a certain line was from the cœliac axis, while on the other side it came from the superior mesenteric artery; at the border-line between these, ulceration was likely to be found.

Dr. G. LOVELL GULLAND referred to the extreme difficulty in diagnosis, and said that hyperchlorhydria might be the only symptom present; two-thirds of his cases showed this condition, while one-third did not, and better results were obtained from medical treatment in the latter, while surgical measures were more satisfactory in the former. He thought that the following class of cases required operation: 1. All cases where there was retention of gastric contents owing to stricture. 2. All cases with severe and repeated hæmorrhage. In such cases examination of the fæces for the presence of blood was most useful. 3. All cases of inflammatory enlargement. 4. Patients who could not study their diet, as commercial travellers. He said that gastro-enterostomy was not entirely devoid of danger, while in many cases complete recovery did not take place, and the patient might be in as bad a condition as before operation.

The PRESIDENT said that some observers seemed to have had a large experience of duodenal ulcer, but this had not been his. Duodenal ulceration as seen post mortem or at operation was a very much less frequent occurrence than the evidence of the meeting might lead one to expect. In diagnosis he laid special stress on the sex question, and he required much greater evidence before diagnosing the condition in women. He had noted that cold made these cases much worse, and he had noted jaundice in cases of true duodenal ulcer. He alluded to hæmorrhage which might result from superficial erosions which might heal before operation, and hence difficulty would arise in determining from where the bleeding had proceeded. His own feeling as to operation was that if symptoms had occurred for the first time, medical treatment should be employed, but if the ulcer did not heal readily or if relapses occurred operation should be performed at once, as death so often followed on perforation or severe hæmorrhage.

Mr. D. P. D. WILKIE, Mr. ALEXANDER MILES, Mr. J. W. DOWDEN, and Dr. F. D. BOYD took part in the discussion, and in reply Professor CAIRD said that occult hæmorrhage would help them very greatly in diagnosis. In performing gastro-jejunostomy for duodenal ulcer there was an absolute assurance of cure. There was good reason to believe that a protective spasm did take place and that it was of great use after operation. It would be very difficult to decide the question by statistics because it was a question of individual cases. He knew of one case where a duodenal ulcer developed a year after an operation for appendicitis.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF MEDICINE.

*Presentation of Cases.—Rheumatism in Childhood and in Adult Life.—Myasthenia Gravis.—Cerebral Tumour.*

A MEETING of this society was held on Feb. 10th, Sir JOHN W. MOORE, the President, being in the chair.

Dr. J. F. O'CARROLL showed a case of Athetosis in a schoolgirl, aged 9 years, who had had severe whooping-cough before the affection was noticed. He considered this had led to a cortical hæmorrhage into the right hand area of the brain, the athetosis resulting therefrom. Also a case of Occupation Neurosis in a barber, who exhibited weakness and choreiform movements in his right hand. Dr. O'Carroll considered the movements in the patient's hand were fatigue phenomena due to excessive use.—Dr. W. M. CROFTON discussed the share of toxins in producing the neuro-muscular condition in the second case, noting that the patient suffered from pyorrhœa alveolaris.

Dr. BOYD BARRETT read a paper on the Differences in the Manifestations of Rheumatism in Childhood and in Adult Life, in which he referred to the occurrence in children of rheumatic tonsillitis, chorea, "growing pains," rheumatic nodules, "stiff neck," and hip-joint affections of rheumatic origin, and cardiac trouble. Emphasis was laid on the absence of hyperpyrexia and the rare occurrence in children of early years of acute polyarthritis. He stated, in conclusion, that rheumatism in children was characterised by (1) the variety of its manifestations; (2) its insidious onset; and (3) the mildness of the arthritic symptoms and the corresponding severity of the cardiac trouble.—This paper gave rise to a lively discussion, in which the PRESIDENT, Dr. O'CARROLL, Dr. H. C. DRURY, Dr. J. M. DAY, and Sir W. J. THOMPSON took part.

Dr. T. GILLMAN MOORHEAD read a paper on Myasthenia Gravis, in which he summarised the various facts and theories connected with that disease and reported a case. There were well-marked bilateral ptosis, almost complete ophthalmoplegia, and drooping of the lower lip and lower jaw. The neck muscles were much atrophied. The myasthenia reaction was obtained. Death occurred quite suddenly ten days after admission to hospital. The necropsy showed a persistent, but not very large, thymus gland, nervous system normal, lymphorrhages very scarce and badly marked in the muscles, and some parenchymatous nephritis; other organs were normal.—Dr. CROFTON said he was much interested in the question of etiology raised by the condition of the thymus gland and the infiltration of the muscles with small round cells. He referred to a report which had been made of two cases of thymic asthma, in which there had been extremely flabby muscles and general muscular exhaustion, which were treated by X rays, and they got perfectly well; they lost their thymic asthma and their blood condition was restored to normal. He also referred to the effect of giving extracts of the sexual glands. The two lines of treatment might throw light on the condition of myasthenia gravis. First of all, X ray treatment of the thymus might be tried, then extracts of the testis might be given.—Dr. MOORHEAD said that in his case of myasthenia gravis he had hopes of being able to find an enlarged thymus, but there was no enlargement of the area of dulness on percussion, so he did not think X rays would be of use in that particular case. Dr. Henderson's researches had impressed him with the idea of working out the inter-relations between organs as regards the effect of certain obscure metabolic products. It might throw light on this case.

Dr. A. R. PARSONS, Dr. BENSON, Dr. J. T. WIGHAM, and Mr. G. T. JOHNSTON brought forward a case of Intracranial Tumour which was successfully localised in the right frontal lobe in the neighbourhood of the face and tongue centres. Mr. Johnston trephined over this region, and removed a hardened mass in three portions, which was handed to Dr. Wigham, who reported that the mass was syphilitic. The operation was followed by complete loss of power in the left arm and leg. His blood, tested by Wassermann's reaction, gave a positive result. He was discharged from hospital a little over two months after the operation in full possession of his mental and physical faculties except slight traces of optic neuritis in process of subsidence.—Dr. T. DONNELLY described two cases of a similar nature, in both of which cure seemed to follow the liberal administration of iodide of potassium.—Dr. G. E P. MELDON believed that iodide of potassium acted only in those cases which had been well treated with mercury.—Dr. PARSONS said that the patient had been given over 400 grains of iodide of potassium, but that, despite this, his condition had got steadily worse.

### SECTION OF OBSTETRICS.

*Presentation of Cases and Specimens.—Forty-six Cases of Wertheim's Operation.*

A MEETING of this section was held on Feb. 17th, Dr. H. JELLETT, the President, being in the chair.

The PRESIDENT showed a specimen of Adeno-carcinoma of the Cervix, taken from a middle-aged woman, which simulated a case of cervical myoma occurring in the same situation. There was nothing in the abdomen to be felt, and the diagnosis had to be made by splitting the cervix high up. The operation was a very extensive one.

Dr. GIBBON FITZGIBBON showed a case of Secondary Abdominal Pregnancy in the fourth month. The history was typical of ectopic gestation. The patient was aged 35 years, had two children, aged 9 and 7½ years. At the second confinement the child was very large, the presentation was a transverse one, and there was great difficulty in the delivery. Subsequently the patient evidently suffered from pelvic peritonitis or cellulitis. She had not been quite well for about five years after that, but

the two years previous to her admission to hospital she had been in fair health. She menstruated some time during last September. About Nov. 20th she was seized with severe pain in her abdomen and fainted. A few days after that she had profuse and continuous hæmorrhage which lasted for ten days, and intermittent hæmorrhage for a fortnight more. She went into hospital on Dec. 26th, but nothing could then be done. On Jan. 14th he opened the abdomen. The whole pelvic region was matted together. On taking out the tumour there was nothing between the fœtus and the intestines except the fœtal membranes. The front of the sac was formed by the anterior layer of the broad ligament. The uterus at the time of operation was of the size of a medium orange, and evidently contained a decidual formation, but no pieces were passed. The patient made an uninterrupted recovery, and went out on the twenty-sixth day after the operation.—Dr. R. D. PUREFOY wanted to know why Dr. Fitzgibbon had called it secondary abdominal gestation. Had Dr. Fitzgibbon ever read of primary abdominal gestation? He would like to know with what structures the placenta was continuous and on what structures the placenta had developed. There was a possibility of development of the decidua outside the cavity of the uterus.—The PRESIDENT said a case of primary abdominal pregnancy was recorded by Dr. Hurst. In this case the entire pregnancy structures were represented by a few layers of chorion.—Dr. FITZGIBBON said the entire pregnancy was closed up in an apparently closed sac. All through the abdomen there were pieces of very old brown leathery-looking blood clot which showed there had been bleeding into the abdominal cavity. The placenta was formed between the sides of the uterus running up over the top of the specimen. The rest of the placenta seemed to run over the top and front of the sac.

Mr. J. SPENCER SHEILL showed a Diseased Placenta. The patient was in the eighth month of her fourth pregnancy. The child was born dead. The pathological report by Dr. W. Boxwell was as follows: "The placenta is small, thin, and fibrous. On section it showed white areas of necrosis. Hæmorrhages are numerous, and there is a remarkable fibrosis of the blood-vessels, leading to more or less complete obliteration over considerable areas. The villi are atrophied." The diagnosis was probably syphilis, but syphilitic placentæ were said to be larger and paler.—Dr. E. H. TWEEDY said that small placentæ in syphilis were not uncommon, and were usually found with a dead fœtus, while in the large placenta the fœtus was usually born alive.—Dr. PUREFOY said that a syphilitic placenta associated with a dead infant was smaller than normal. In a syphilitic placenta the structural changes in the blood-vessels should enable one to diagnose the changes as syphilitic. Macroscopically he would be puzzled to say whether this placenta was not structurally deformed as a result of kidney disease.—Dr. W. M. CROFTON said as regards diagnosis it could be cleared up by doing a Wassermann.—Mr. SHEILL replied.

Dr. TWEEDY brought forward a series of 46 cases of Wertheim's Operation, with a mortality of 19·5 per cent. This percentage was swelled by the inclusion of his early cases, in which the mortality was 33 per cent. for his first year. He operated on 90 per cent. of the cases seen by him, and advocated operation in advanced cancer, not in the hope of bringing about a cure, but to mitigate pain and distress. The surgeon who could count a large percentage of cures after a two years' interval must have obtained them by selection of cases, and might, therefore, have consigned numbers of operable cancer patients to a hopeless outlook and a horrible death.—Professor W. G. SMITH said that Wertheim did well when he followed the general surgeon's method of removing the glands in operating on the breast. The operability of cases must be considered. The surgery of the ureter was of extreme importance. He described Dr. Latzko's method of implanting the ureter. The operation was a very simple one.—Dr. PUREFOY said the number of cases open to operative treatment had been enormously extended by Wertheim's method. Providing the patient was willing, operation should be attempted in any case where the patient was likely to survive the shock thereof.—Sir WILLIAM J. SMYLY said that Wertheim's method was still the best, and it would be best for beginners at least to stick closely to the rules laid down by him in a work just published founded upon an experience of 500 operations. The cause of ureteral fistula appeared to be still an unsolved riddle. Preparation of the patient before operation, he had read recently, was unnecessary, and only caused pain and hæmorrhage; but on thinking it over he thought it a great error to omit the preparation of the cervix, because should the vagina be opened the patient would undoubtedly get peritonitis.—The PRESIDENT said, with regard to the technique of the operation, there were two modifications—one, originally taught by Wertheim, in which the first step was to separate the bladder from the uterus; the other by Bumm, in which the infundibulo-pelvic ligament was divided, and the peritoneum at the base of the broad ligament cut through, after which the ureter was easily seen. It seemed to the speaker simple to find the ureter by this method, and it could then be traced into the cancerous mass. The only case where he thought this procedure was not preferable was where there was extensive involvement of the bladder wall, and this could be found out by cystoscopic examination.—Dr. TWEEDY, in reply, expressed surprise at the great number of cases of ureteral fistulæ and cystitis met with in Wertheim's cases, in spite of the most elaborate aseptic precautions and preparation of the patient. Preparation could be carried a great deal too far. An interval of two or three days should be the utmost to leave a patient without operating, as every hour was only adding to the chances of metastasis. In this operation especially gloves were required. If cancerous tissue got on the hands the bladder, ureter, and cellular tissue around the ureter might be infected, and he could quite understand cystitis and ureteral fistulæ occurring. Drainage of the cellular tissue was greatly advocated by Wertheim, but many great authorities hardly used drainage at all. Dr. Tweedy thought the great feature of Wertheim's operation was the complete shutting off of the peritoneum with drainage, and abdominal drainage was also at times a great advantage.

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WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 3rd, Dr. Phineas S. Abraham, the President, being in the chair.—Dr. Harold Pritchard read a paper on the Present Position of Vaccine Therapy. He said that bacterial vaccines had now become very generally recognised as valuable therapeutic measures in the treatment of infective processes. In the future they were probably destined to play a much more prominent part than now. A vaccine having been defined and its mode of action explained, the merits of the various methods of administration were entered into, preference being given to the subcutaneous method. It was pointed out that a slight local reaction was the end to be desired after an initial dose of vaccine; if the size of the subsequent doses was properly gauged, and the interval of administration carefully fixed, there ought to be no subsequent reaction. A general reaction should never be obtained. It was pointed out that a reaction depended on three factors: (1) size of dose; (2) virulence of vaccine; and (3) reaction of patient. The first factor was the only one which they had under complete control; so that it was impossible to lay down rules for the administration of vaccine which were applicable to every patient. Generally speaking, the more acute the case and the more general the infection, the smaller should be the dose. Many illustrative cases were quoted.—Dr. J. L. Bunch said that the immediate effects of treatment by vaccine could be more readily studied in diseases of the skin than in diseases of internal organs. One would not dream of asserting that every tuberculous, staphylococcal, or streptococcal skin disease could be cured by vaccine therapy, but their successes ought in the future to be greater than in the past. He did not himself feel inclined to dispense with opsonic estimation—the only method of estimating the antibacterial defences of the body at their disposal.—Mr. H. Wansey Bayly thought the method employed in the preparation of vaccines important. It was best not to expose them to a temperature above 55° C. Personally he did not use heat at all, but sterilised them with 1 per cent. carbolic in saline. He had seldom noticed either local or general reaction except with typhoid vaccines and occasionally gonococcal vaccines. He agreed that the opsonic index could not be considered a reliable method of estimating immunity or for controlling vaccine treatment. He agreed with Dr. Pritchard that gonococcal vaccines varied greatly in virulence, and

therefore the initial dose should be minimal. His experience of pneumococcal vaccine in the treatment of acute pneumonia, though limited, had been encouraging. He had, like Dr. Pritchard, not been successful in treatment of pyorrhœa alveolaris with vaccines, nor in acute gonorrhœa.—Mr. W. McAdam Eccles said that in many chronic affections the effects of vaccine were truly marvellous. For B. coli infections of the urinary tract vaccine therapy was very helpful.—The President said: "An authority once said in the future there would be no other method but vaccine treatment. Dr. Pritchard does not look at it as a panacea for all diseases, and has seen it produce an exacerbation. I am conservative both in politics and medicine. I admit it is an enormous advance. In my own experience many results have been the reverse of satisfactory. For instance, in acne, six of the worst cases I have seen have been made worse by vaccines; two of these are disfigured for life by the treatment. Acne can be cured by common-sense and rational treatment, external and internal. As regards boils, I fail to see why any case should be treated by vaccines. Many cases of boils treated by vaccines have recurred."—Dr. J. M. Bernstein, Dr. A. J. Rice-Oxley, Dr. H. Des Vœux, and Mr. Kenelm H. Digby also took part in the discussion.—Dr. Pritchard replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 1st, Mr. W. Morley Willis, the President, being in the chair.—Dr. J. W. Scott, in opening a discussion on General Anæsthetics, said that undoubtedly chloroform was the most dangerous anæsthetic employed, it having a death-rate of 1 in 3000. Surgical procedure played an important part in shock, especially if the patient were only partly under the influence of chloroform. It had been found that cases of death after chloroform contained a large percentage of acetone and diacetic acid in their urine. This acid poisoning occurred also in diabetes, acute yellow atrophy of the liver, and in phosphorus poisoning. As a prophylactic against chloroform fatality it was advisable to prepare the patients by giving glucose, avoiding prolonged fasting, by washing out the rectum and giving bicarbonate of soda and glucose to those patients whose urine contained acetone and diacetic acid. As regards ether, it was more difficult to administer, safer in its immediate effect, but very often led to serious pulmonary complications. The open method was the best method of administering it, and he had used it frequently in children without causing any bronchitis. A mixture of chloroform and ether was the most satisfactory of all, as it maintained a more constant blood pressure.—Dr. R. Alderson said the death-rate of chloroform was 1 in 2500, that of C.E 1 in 5000, and of ether alone 1 in 13,000. Therefore chloroform must be the most dangerous method. He advised the members not to limit themselves to one anæsthetic. He preferred giving a mixture of ether and chloroform by the open method. This did away with all the objections of a Clover and rendered the patient less liable to post-anæsthetic vomiting. The mixture should be slowly given. The chief objections to the open method of giving ether were: (1) the long induction period; (2) the difficulty of obtaining complete muscular relaxation; (3) the difficulty of getting some patients under its influence; and (4) the liability to subsequent chest complaints. He should advise ether to be always given for minor operations.—Dr. Amelia M. Le Pelley, remarking that emergency cases took anæsthetics well, thought the ordinary preparation of patients was too drastic; operations should be performed, when possible, in the morning and fright reduced as far as possible. As a rule the temperature of the operating room was too high. As the ordinary reflexes varied so much with different patients she paid most attention to the breathing.—Mr. Kenneth Black said that he had seen 30 patients die on the operating table—23 of these after chloroform. In all cases the cause of death was an overdose of the anæsthetic, some, of course, being more susceptible than others. He noticed that the special anæsthetists had a much smaller mortality. Most of the recorded fatalities occurred in institutions where the death was always followed by an inquest; he was quite sure that in general practice many deaths were unrecorded.—Mr. T. B. Gilbart-Smith always started anæsthesia with A.C.E. mixture and generally continued with chloroform. In abdominal operations the patients stood the operation better if they were deeply under.—Dr. J. A. Waring preferred A.C.E., and believed in giving as little as possible. He found heart disease no hindrance to giving an anæsthetic if it was administered slowly and carefully.—Mr. R. G. Hogarth preferred to have ether administered by the open method, but mentioned one case which was followed by acute bronchitis.—Mr. R. Wood (Ilkeston) always gave chloroform in midwifery cases with success.—Dr. W. Hunter preferred A.C.E. and regarded chloroform as most dangerous. He thought that the services of newly qualified assistant house surgeons were wrongly employed.—Mr. H. Bell Tawse said that chloroform was the only satisfactory anæsthetic in nasal cases. Ether caused too much hæmorrhage and mucus formation.—The President thought that chloroform was perfectly safe in the hands of skilled men. It certainly was quite pleasant to take and produced the best results from a surgeon's point of view.—Dr. Scott and Dr. Alderson briefly replied.

THE NEW LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held at 49, Berners-street, W., on March 9th, Dr. P. S. Abraham, the President, being in the chair.—Mr. Dennis Vinrace showed a man with Cicatricial Alopecia simulating Alopecia Præmatura.—Dr. Tom Robinson showed a man, aged 46 years, with Tubercular Lupus of the Back of the Hand, resulting from an injury 26 years previously.—Dr. David Walsh showed a little girl aged 9 years with Dermatitis Herpetiformis of three months' duration, a similar attack having occurred two years ago.—Dr. Morgan Dockrell showed: (1) A young woman, aged 19 years, with Bazin's Disease of four years' duration; and (2) a case of Ulerythema of the Scalp in a man aged 31 years; the left ear was also slightly affected.—Dr. W. Knowsley Sibley showed: 1. A woman, aged 31 years, with Erythema Bullosum. The attacks commenced at the age of 8 years, and the present one was widespread, many of the older lesions being scarred and slightly pigmented. 2. A case of Psoriasis in a man aged 38 years in which the mucous surface of the glans penis was affected, in addition to other parts of the body.—Dr. W. Griffith showed: 1. For Dr. M. K. Hargreaves, a woman, aged 25 years, of English nationality, with extensive Favus of the Scalp and Trunk which had existed since infancy. Much improvement had taken place from X ray treatment. 2. The young man shown at the previous meeting of the society with Mycosis Fungoides, to illustrate the improvement as a result of X ray treatment. The diagnosis had been confirmed microscopically.—Dr. G. Norman Meachen showed: 1. A Jewess with Ulerythema of the Scalp of four years' duration. 2. A case of Papulo-necrotic Tuberculides in a young woman, aged 30 years, affecting the legs and also the backs of the hands, where the condition was typically that described as folliclis.

CHILDREN'S HOSPITAL, BIRMINGHAM. — The management committee reports that the number of patients treated during 1910 was 15,261, as against 15,240 in 1909. The past year would always be remembered with gratitude by reason of the opening of a King Edward VII. Memorial Fund by the proprietors of the *Birmingham Daily Mail*, who decided to devote the proceeds to the erection of a statue in memory of the late King, and to place the balance at the disposal of the children's hospital committee. It was hoped that the amount would reach £30,000. Had it not been for this the future of the hospital would have been a source of great anxiety with the present lease expiring and very little prospect of sufficient funds being raised in time to erect new buildings elsewhere. The plans of the new hospital were not finally settled. The open-air treatment which it was hoped to make a special feature of the hospital involved the planning of the building on novel lines, and improvements in design and arrangement continually suggested themselves. It was hoped that the actual building operations would be commenced in the spring of next year. The accounts for the year showed a deficiency of £12 as compared with £466 for the preceding year. To this current deficiency had to be added the accumulated deficiency of £605 brought forward from last year, making £617 to carry forward. Operations on in-patients numbered 378, and on out-patients 2558, the latter being an increase of 483 on the previous year. There were 143 deaths among in-patients, giving a death-rate of 14·54 per cent.

# Reviews and Notices of Books.

*The Principles of Gynæcology.* By W. BLAIR BELL, M.D., B.S. Lond., Assistant Gynæcological Surgeon, Royal Infirmary, Liverpool. With 6 coloured plates and 357 illustrations in the text. London: Longmans, Green, and Co. 1910. Pp. 551. Price 21*s*.

IN writing this work the author has endeavoured to present a complete and modern survey of the foundations on which gynæcology is established. We may say at once that he has succeeded very well and has written a concise and readable text-book of much merit. It is drawn up on a simple and logical arrangement which certainly gives, as Dr. Blair Bell claims, greater lucidity and more consecutive reading than the classification usually adopted.

The first chapter contains a short but interesting account of the evolution of the female genital organs, and is followed by a good description of the anatomy of these organs. We notice that the author is in favour of the view, the wrong one in our opinion, that the cells of the membrana granulosa are derived from the stroma of the ovary. We have little doubt that the conclusions of Waldeyer, Schäfer, Nagel, and Van Winiwarter are correct, and that they are right in maintaining that these cells and the interstitial cells are in reality derived from the germinal epithelium of the ovary. This view finds acceptance from the great majority of modern workers, and to us this mode of origin appears much more consistent with the theory that the interstitial cells play an important part in the production of the internal secretion of the ovary. In the chapter dealing with the physiology of menstruation Dr. Blair Bell puts forward his view that the calcium metabolism of the body is largely concerned in the production of this function, and that the ductless glands also play an important part in the genital functions and in controlling the calcium metabolism.

After a chapter on the methods of examination of the pelvic organs, which is well arranged, a section is devoted to the congenital derangements of the normal anatomical conditions, followed by one on the acquired derangements. The method employed by the author of introducing a Hodge or ring pessary is not, in our opinion, the best, since it necessitates the introduction into the vagina of the index finger as well as the pessary—a needless complication. It is a pity that nothing is said as to the mode of action of a Hodge pessary, as this is a point on which much confusion exists among students. With the recommendation that the abdomen should be opened in cases where the gravid retroverted uterus is impacted, and replacement is impossible, we disagree. It is the usual experience in these cases that no such treatment is necessitated. In the section dealing with the treatment of chronic inversion of the uterus nothing is said of hysterotomy by the vagina instead of abdominal section.

In discussing the complications of fibromyomata uteri the statement is made that these tumours tend to produce relative or absolute sterility. This is very far from being proved, as in the majority of cases the sterility precedes the development of the fibroid tumours, and cannot therefore be caused by it. How does Dr. Blair Bell determine that there is no room in the abdomen for the development of a fœtus when large fibroids are also present? The softening that these tumours undergo during pregnancy is often so marked that it is most difficult to say to what extent they will or will not yield and give way to the developing fœtus. In the operative treatment of cases of retroversion of the uterus Gilliam's operation of drawing the round ligaments into the abdominal wall, and fixing them there, is strongly recommended, and according to the author gives good results. The section dealing with the main principles of gynæcological operations is a good one, and there is no unnecessary detail. In the two appendices, Electro-therapeutics in Gynæcology, contributed by Dr. Curtis Webb, is considered in the first, and in the second a useful classification of the causes of certain symptoms is given.

The book, as we have said, is a good one, and if we have devoted some space to what we consider its shortcomings, we are none the less aware of its merits. The author lays rather too much stress upon the quite unproved theory of the great importance of the calcium content of the blood, and the large part played by the secretions of the ductless glands in the causation of certain gynæcological conditions, but the lapse of time will prove or disprove the correctness of his views. The work is carefully printed, the index is accurate, and the illustrations are well reproduced. In the figure on p. 82, giving the levels of the fundus uteri at the different months of pregnancy, it is a pity the author has not relied on his own observations instead of copying the illustration from another book, and adopting the average positions as given by Whitridge Williams in his text-book of midwifery, as they are certainly inaccurate.

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*Appendicitis and other Diseases of the Vermiform Appendix.* By HOWARD A. KELLY, M.D. With 215 original illustrations, some in colours, and 3 lithographic plates. London and Philadelphia: J. B. Lippincott Company. 1909. Pp. 502. Price 25*s*.

A FEW years ago we reviewed a very elaborate work on the vermiform appendix which Dr. Kelly wrote in conjunction with Dr. Herdon. This formed a storehouse of facts and information relating to this organ, but we felt while reading it that a smaller work would prove more widely useful, and therefore are glad that the present work has been prepared. Not that the present volume is small, but it is decidedly less voluminous than its predecessor. After an interesting chapter on the history of our knowledge of the diseases of the appendix its anatomy is considered. Diagrams are given illustrating almost every conceivable part of the subject, and especially good are the illustrations showing the vascular supply of the organ. The bacteriology is next described and the more important organisms are discussed fully. The pathological section is very complete and the various affections from which the appendix may suffer are described. As to the etiology, Dr. Kelly tells us that he is acquainted with several instances in which an appendicitis was apparently promoted by the attachment of the appendix to the site of a previous operation. The disease appears to be rare amongst the negro race. Dr. Kelly considers disorders of digestion to be the most common exciting causes, and trauma is another factor which he looks upon as important. He agrees with all other observers in considering the presence of foreign bodies in the appendix a very rare cause indeed. In almost a thousand cases of appendicitis in the Johns Hopkins Hospital foreign bodies were found only in four instances. The clinical history and the diagnosis are then described. A valuable account is given of the leucocytes in appendicitis; Dr. Kelly lays very great stress on a differential count, and he considers an increase of the neutrophiles important, especially if associated with a decrease of the eosinophiles.

As to the treatment previously to operation, we are told that it is a good plan, if operation cannot be immediate, to give the patient just enough opium to relieve pain and afford a little ease. We agree that opium may be of use, but we think it would have been as well to mention that it is inadvisable to give opium before the case is seen by the surgeon who may have to operate. Opium may have a disastrous effect in masking the symptoms. We concur with

Dr. Kelly when he states that the ideal time for operation in acute appendicitis is within the first few hours after the appearance of symptoms, but unfortunately it is very exceptional for the surgeon who may have to operate to see a case in this period.

We need not follow the author through the descriptions of the operation. The various incisions which have been recommended are given, and in the case of each Dr. Kelly mentions its special field of usefulness. The chapter on post-operative sequelæ is good, and we may also mention with special approval the account of the relation between appendicitis and gynæcological affections. The chapter on the medico-legal aspects of appendicitis is necessary nowadays, when compensation arising for injuries received by workmen in the course of their employment is enforced by law. In this connexion the question of the relation of trauma and appendicitis deserves special attention.

We appreciate the extensive index of names, though we may point out that as a rule it is far better to have only one index to a book, but if necessary the different classes of items included in it may be distinguished by the employment of different forms of type.

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*A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.* By RAKHALDAS GHOSH, L.M.S., Calcutta University, Lecturer on Materia Medica, Calcutta Medical School. Edited by J. T. CALVERT, M.B. Lond., M.R.C.P. Lond., Lieutenant-Colonel I.M.S., Professor of Materia Medica and Therapeutics, Medical College of Bengal, &c. Fourth edition. Calcutta: Hilton and Co. 1910. Pp. 742. Price, rupees 5, or 7*s.* 6*d.*

A TREATISE on materia medica must from its nature be largely a compilation, and its value will be in proportion to the care and time expended in its preparation. Judged by this standard, Mr. Ghosh's book is a remarkable one, and bears striking testimony to the arduous and assiduous labours of its author. Previous editions have been edited by Lieutenant-Colonel Lukis, I.M.S., owing to the death of Mr. Ghosh, but this, the fourth edition, has been revised and edited by Lieutenant-Colonel Calvert, who acknowledges in the preface the help afforded him by Dr. B. N. Ghosh, the son of the author. The book is divided into seven parts, of which the first is devoted to materia medica proper. The general characters of drugs are described, their composition and impurities are discussed, and the various pharmacopœial and non-official preparations are tabulated, with their composition, strength, and doses when used internally. The second part deals with pharmacy and dispensing, the third with the methods of administration of drugs. Both of these abound in useful practical hints and valuable suggestions, difficulties in dispensing and pitfalls in prescribing being carefully indicated. The general pharmacology of medicinal substances forms the subject of the fourth part, in which drugs are classified according to their actions upon the different systems and organs of the body, drugs with a similar action being arranged in tables.

The major part of the book is occupied by a detailed consideration of the official remedies, including those in the Indian and Colonial Addendum to the Pharmacopœia, and of many unofficial ones. Their nature, source, general characters, official and non-official preparations, and doses are given, and then their pharmacology and therapeutics are discussed. In the case of drugs of Indian origin their names in the various Indian languages are given. Under the heading of therapeutics the chief uses of the drugs are indicated, and frequently prescribing hints are added in regard to the best methods of administration and sometimes actual prescriptions. The drugs in this section are considered in alphabetical order. The general principles of serum therapeutics and of treatment by vaccines form the subjects of a special section, in which all the chief methods of protective and curative treatment by these substances are discussed. The various applications of organotherapy are also described. A full and convenient index is appended.

Mr. Ghosh's book is a most useful work of reference, and as the material is well arranged, and the information given is generally reliable, it should prove of value to the practitioner as well as to the student.

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*Outlines of Zoology.* By J. ARTHUR THOMSON, M.A. Fifth edition. Edinburgh, Glasgow, and London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 855. Price 12*s.* 6*d.*

THE above edition of this well-known text-book is rather more than 200 pages longer than the first edition, which appeared in the year 1892. From this increase, which is obviously very great, we can measure in some degree the extremely rapid advance of zoological science in the last 18 years. For the scope of the work has not changed in any respects and about the same ground is covered. The vast increase of knowledge of fact has, however, compelled the author to extend his accounts of the various groups of animals at the expense of the more general parts of the treatise, and it is not without interest to observe the proportions which the classes and orders of the animal kingdom bear to each other in the present and in the first edition of this handbook. We find on a comparison of the space devoted by Professor Arthur Thomson to individual groups that the sections devoted to the protozoa, sponges, coelenterates, and worms have on the whole undergone the most considerable increase, a result which entirely harmonises with the progress of recent research. And among the vertebrated animals the account of the fishes is proportionately longer than that of any other group. It is not, of course, possible to base any very accurate statistics upon this summary comparison, but, on the whole, the author appears to us to be expressing the relative importance at the present time as compared with the past of these different orders of invertebrates and vertebrates. Moreover, Professor Thomson is engaged in the instruction of medical and zoological students at the University of Aberdeen, and is not likely from the nature of his avocations to be prejudiced in favour of this group or of that, as might be the zoologist who is only devoted to his own investigations.

It is something of a *tour de force* nowadays to cope with the anatomy of the whole animal department of nature in one volume. To conduct to a successful issue so large an undertaking needs a man fitted, as was said of Dr. Johnson, to grapple with whole libraries. A professor of zoology is really the only person who can, without excessive nervousness, undertake such a task. For in these days of possibly over-examination he has before his eyes the constant fear of "external" examiners, keen to note the deficiencies of his pupils in the most recently acquired knowledge. For the zoologist whose life is mainly spent in research it is not expedient that he should write a general text-book. Though his knowledge of some branch or branches is no doubt both vast and minute its depth shallows rapidly at the boundaries of the field of his own researches. We find, in fact, that Professor Thomson has evidently at his fingers' ends the main facts of zoology, and we have been at pains to test a large number of his statements. Among these there are one or two with which we do not agree. For example, the author

says of the bird that "the two valves between the right auricle and the right ventricle are in part muscular." This phrase seems to us to be misleading. There is but one flap to the valve, which is entirely muscular, and which only surrounds half of the atrioventricular orifice. The figure of the genitalia of the earthworm used is the well-known figure of Hering. But this figure is incomplete in that the receptaculum ovorum is not shown therein, though it must be added that the author has duly mentioned this structure in the text. There is a misleading sentence in the definition of the tapeworms, where these animals are said to possess "hooks, grooves, or suckers," the implication being that only one of these means of attachment is present. This is, of course, an error if it is read literally. But, as has been already implied, the misleading statements are not conspicuous, and the book may be recommended as trustworthy.

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*Thérapeutique Usuelle du Praticien.* By Dr. ALBERT ROBIN, Professor of Clinical Therapeutics in the Faculty of Medicine, Paris. Paris: Vigot Frères. 1910. Pp. 520. Price 8 francs.

A MORE comprehensive title of this large volume would be "Clinical Therapeutics." Dr. Robin has selected certain morbid conditions which yield more or less readily to systematic treatment and examines at length the general considerations which should determine the therapeutic measures to be adopted, and then explains in detail how these measures should be applied. He discusses many diseases of the stomach and intestines, including atonic dyspepsia, chronic gastritis, gastric ulcer, and mucous colitis. He records certain cases characteristic of the condition he is describing, and builds up his remarks on the progress which ensued. Under the heading of diseases of the liver he debates the treatment of cirrhosis of the liver. In speaking of the management of the diet in cirrhosis of the liver he expresses a favourable opinion of the employment of skimmed milk as a sedative to hepatic activity. The treatment of chronic nephritis, of arterio-sclerosis, and of certain nervous affections, e.g., facial neuralgia, and of psychical conditions of digestive origin is also described. The work cannot be regarded as a text-book, but is rather a series of articles on the treatment of separate maladies, of some interest to general practitioners, for whom it is mainly intended.

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## LIBRARY TABLE.

*Medizinal-Berichte über die Deutschen Schutzgebiete für das Jahr 1908-09. (Medical Reports upon the German Protectorates for the Year 1908-09.)* With 35 illustrations in the text, 2 maps, and 39 reproductions of photographs. Berlin: Published for the Imperial Colonial Office by Ernst Siegfried Mittler and Son. 1910. Pp. 522. Price, paper boards, 9 marks; bound, 10 marks.—This volume contains reports for the fiscal year ended March 31st, 1909, upon the medical and sanitary administration of Germany's eight protectorates—namely, German East Africa, the Cameroons, Togoland, German South-West Africa, New Guinea, the Caroline Islands, the Marshall Islands, and Samoa. Particulars are given of the medical and sanitary staff serving in each colony, and the hospitals provided for Europeans and for natives are described. Incidence of disease and the mortality from various causes are fully considered, tabular statements being given for each protectorate. Special attention is devoted to communicable diseases spread by infection, like small-pox, and also to those transmitted by the agency of insects, more especially malaria and sleeping sickness. The African colonies from their importance naturally occupy a considerable portion of the space, extending, indeed, to nearly three-fourths of the volume. The diseases of animals, particularly those due to biting insects, are dealt with from the veterinary point of view in some detail. In the African protectorates the subject of sleeping sickness receives due attention. The special report on Trypanosomiasis in East Africa is furnished by Professor Kleine, formerly a member of the German Sleeping Sickness Commission (of which Professor R. Koch was the chief), whose notable experimental work on the infectivity of the glossina palpalis is well known. The reporter on this disease in Togoland is Dr. Zupitza, who gives an account of the work done in that protectorate by the German Commission, and in it he describes the organisation of the campaign against the disease in Togoland, the distribution of the malady and of the glossina palpalis as well as of other tsetse flies in that colony. He discusses the reasons for the hitherto limited diffusion of sleeping sickness in the protectorate and the danger of extension of the infection in the near future. He also describes the measures taken against the fly and for preventing the importation of infection from without. A description is added of the sleeping sickness camps established for the treatment of natives suffering from the disease. After the reports is given a list of the papers published during the year on tropical medicine and veterinary science by the members of the Government medical and veterinary staff, as also by the surgeons attached to the native troops. In the appendix are also given reports on the health of the troops employed in German East Africa and in the Cameroons for the fiscal year 1907–08. The volume contains a considerable amount of information, not only as to diseases in the tropics, but also as to sanitary administration among native populations. The book is plentifully illustrated by sketches, maps, charts, and photographs; there is much in it that is highly interesting and instructive.

*The Medical Examination of the School Child.* By D. A. CARRUTHERS, M.D. Edin., D.P.H., Education Medical Officer to the County of Buckingham, &c. London: Office of *The Medical Officer*. 1910. Pp. 91. Price 2*s.* 6*d.* net.—This is a handy reprint of articles written originally on request to summarise the conditions of which the school medical officer should take cognizance. Naturally, therefore, the schedule of medical inspection issued by the Board of Education is followed. The author very properly lays stress on the importance of cleanliness of the teeth, and combats the opposition that he seems to have found on the part of "some medical practitioners who consider it is a mistake to clean the teeth of children in elementary schools or to give them directions for so doing." The articles are necessarily somewhat sketchy, and a fuller index is desirable; but the book will prove useful to school medical officers.

*Allergie.* Von Dr. CLEMENS FRH. VON PIRQUET, Professor der Kinderheilkunde an der Universität Breslau. 30 illustrations. Berlin: Julius Springer. 1910. Pp. 96. Price M.3.60.—It is well known that persons who have suffered from measles, small-pox, or whooping-cough are not usually again affected by the same disease. They are said to be immune. On the other hand, some diseases, like pneumonia and erysipelas, are apt to leave an increased susceptibility to the recurrence of these maladies. This subject, so far, has attracted the attention chiefly of the experimental pathologists. The author has coined the word "Allergie"—not a happy combination—for the clinical picture of this changed reaction—increase or decrease of susceptibility. Richet coined the word anaphylaxy for increased susceptibility. The author in the special part of the memoir gives cases of "serum disease"—by which term he indicates a condition in which a second dose of a serum increases the susceptibility to the serum, either in animals or man. There may, however, be the opposite condition of diminished susceptibility. Leaving experimental pathology, he proceeds to deal

with urticaria, hay-fever, vaccines, and variola, measles, tuberculosis, syphilis, diphtheria and many other diseases in their relation to the injection of various sera. It is an interesting little monograph, based on the author's experience, which should prove useful both to the dermatologist and the physician. The bibliography extends to 272 references to papers dealing with this "change of reaction."

*Childhood.* Edited by T. N. KELYNACK, M.D. Vict. London: Charles H. Kelly. 1910. Pp. 152. Price 1*s.* net.—This is the second of a series of National Health Manuals, presenting to those interested or engaged in social service special aspects of personal, domestic, or national well-being in non-technical language. It is recognised that social reform is still in an experimental stage. After an introduction on Childhood by the editor the following subjects are considered: the Growth of Children, by Dr. G. F. Still; the Psychology of Childhood, by Dr. W. B. Drummond; the Hygiene of Child Life, by Dr. Leonard Findlay; A Child's Diet, by Dr. J. G. Emanuel; the Preventable Diseases of Childhood, by Dr. John McCaw; Tuberculosis in Childhood, by Dr. Clive Rivière; Alcoholism and Childhood, by Dr. G. Basil Price; Dependent Children, by Dr. Frances M. Dickinson Berry; Prevention of Cruelty to Children, by Dr. T. Eustace Hill; Legal Protection of Childhood, by Mr. Digby Cotes-Preedy; and Moral Health of the Child, by Dr. Mary Scharlieb. The appendices contain bibliographies classified according to each subject. The chapter on the moral health of the child particularly contains much that though in no wise new is lamentably overlooked by too many on whom the task of the bringing up of children devolves.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on March 9th, Mr. BUTLIN, the President, being in the chair.

In accordance with the recommendation from the Board of Examiners in Dental Surgery it was resolved that the first professional examination for the Licence in Dental Surgery shall consist of two parts—Part I., Mechanical Dentistry, and Part II., Dental Metallurgy, and that these parts may be taken together or separately.

A report was received from the museum and finance committees in which it was recommended that the specimens illustrating general pathology be exhibited on the ground floor of Room III. of the museum, and that the librarian's old house be reconstructed to provide additional accommodation. The report was approved and adopted.

A letter was read from Mr. C. H. Golding-Bird, the representative of the College on the Central Midwives Board, reporting the proceedings of that Board during 1910. The best thanks of the Council were given to Mr. Golding-Bird for his services as the representative of the College.

The PRESIDENT reported the delivery of the Hunterian Oration by Mr. Edmund Owen on Feb. 14th, and it was resolved that the best thanks of the Council be given to Mr. Owen for his oration, and he was requested to publish it.

The PRESIDENT reported the delivery of the various lectures—Hunterian Lectures and the Arris and Gale Lecture. After much discussion it was resolved—

That, as it has been found to be impossible to proceed with the suggestion adopted by this College for combined examinations for medical degrees by the Royal Colleges and the University, the Council do not lay any detailed proposals before the Royal Commission, but instruct their delegates, besides stating their individual views, to point out:—

1. The disability under which London medical students are placed owing to the difficulty of obtaining degrees in the Faculty of Medicine of the University, a disability not experienced in other parts of the United Kingdom.
2. The action taken by this College in the past with the object of removing this disability.
3. Its continued willingness to coöperate in any scheme for making the degrees in the Faculty of Medicine more accessible to London medical students.

The delegates are Mr. Butlin, Sir Henry Morris, and Sir Alfred Pearce Gould.

# New Inventions.

## A VAGINAL GUIDE FOR HYSTERECTOMY.

IN the performance of total hysterectomy it is often of value to be able accurately to define the limits of the vagina, and I have found the instrument here described of service.

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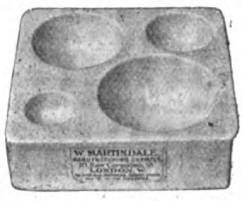
A straight handle, 10 inches in length, carries at one end a flat piece slightly curved like the end of a duckbill speculum which fits the vaginal fornix. After cleansing the vagina this is introduced into the anterior fornix. When the broad ligaments have been ligatured and divided the nurse or third assistant pushes the instrument upwards and the vaginal limits are at once well defined. After ligaturing the uterine arteries the anterior vaginal wall is divided upon the flat surface, this giving a firm base upon which to cut. The assistant then turns the instrument into the posterior fornix and the posterior vaginal wall is similarly defined and divided. I have found this manœuvre of assistance not only in defining the position of the vaginal incision but in shortening the time expended in determining the extent of tissue to be removed. It is equally useful if the incision is made by the cautery, as the metal plate allows one to burn through the vaginal wall with confidence that no underlying parts will be injured. With reference to the possibility of infecting the abdominal wound when the cancerous uterus is removed, I think this would be obviated by the following procedure. Before the operation begins a heavy tenaculum is placed on the cervix. As soon as the uterus is freed from its connexions, the organ is withdrawn per vaginam, unless, of course, of a very large size. This will obviate the necessity of curetting and closing the mouth of the uterus and save a certain amount of valuable time. The instrument is supplied by Messrs. Down Bros., of St. Thomas's-street, London, S.E.

P. CLENNELL FENWICK, M.D. N.Z., F.R.C.S. Edin.
Christchurch, New Zealand.

## A COMBINED PORCELAIN SOLUTION TRAY, STAINING BATH, AND EMBEDDING MOULD.

I HAVE designed this tray for use as a temporary receptacle for different solutions during minor operations. By reason of its stability, cleanliness, shape, and size it is specially adapted for the consulting-room table of all practitioners, especially those engaged in aural, nasal, laryngeal, ophthalmic, gynæcological, or dental work. Its use will be found to economise the employment of cocaine, adrenalin, and other costly solutions, while it is readily cleaned and cannot be upset. It is specially useful in preparing "606" for syringe injection, and to pathologists for embedding tissue of all sizes either in paraffin or celloidin, while the same time it affords excellent staining baths for sections. The cells should be wiped out with a very thin film of vaseline before embedding tissues. These wells are of 3, 5, 15 and 20 c.c. capacity, which experience has proved to be the most convenient sizes for the different purposes for which they may be employed. The dish can be obtained from Messrs. W. Martindale of 10, New Cavendish-street, W.



WYATT WINGRAVE, M.D. Durh.
Chenies-street, W.C.

DEVON AND EXETER DENTAL HOSPITAL.—Mrs. Nosworthy of Dawlish (Devon) has given £500 to the Devon and Exeter Dental Hospital. This makes a total of £3000 which Mrs. Nosworthy has given to this charity during the last few years.

# THE LANCET.

*LONDON: SATURDAY, MARCH 18, 1911.*


## The Problem of Sunday Entertainments and the Metropolitan Hospital Sunday Fund.

As will be known to most of our readers from articles in the daily press, or as may be learned from a report in this issue of THE LANCET, a serious division of opinion was witnessed at a meeting of the Council of the Metropolitan Hospital Sunday Fund held at the Mansion House on Friday in last week. The gathering of the Council, which was presided over by the LORD MAYOR, was a strong one, and the principal reason for the meeting was the fact that the attitude of certain hospitals in associating themselves with cinematograph entertainments held on Sunday, and benefiting by the receipts, had come to the unfavourable attention of some supporters of the Fund. There were members of the Council of the Fund, both clerical and lay, who held such association to be inadvisable on various grounds, while certain leading churches, Nonconformist as well as Church of England, had signified their feeling in the matter in an unmistakeable way by asking permission to allocate their contributions definitely to those hospitals which were not deriving profit from these shows. The matter had been considered previously by the General Purposes Committee of the Fund, whose attitude was shown by a recommendation to the Council to adopt a resolution disapproving of hospitals, while receiving grants from the Fund, being concerned in any movement "contrary to the spirit of its supporters," and suggesting the penalising such hospitals at the next distribution of awards, if any diminution in the receipts of the Fund seem attributable to Sunday shows. It is clear that the decision of the Council must depend largely upon the interpretation put upon the ambiguous phrase quoted, for the spirit of a movement can seldom be exactly defined.

Archdeacon SINCLAIR moved the adoption by the Council of the views and recommendations of the General Purposes Committee, although he disclaimed any intention of condemning in the name of the Fund the establishment of Sunday theatrical shows at the various cinematograph establishments. Archdeacon SINCLAIR'S speech was made from the point of view that the integrity of the Fund would be impaired and possibly its future endangered by not dealing with a situation, on which there were avowedly great difference of opinion, in the manner indicated in his resolution. He pointed out that among the supporters of the Fund there were people who objected to the holding of these entertainments on Sunday, either because they considered them to be an evasion of the law or because they objected to such entertainments being held on the day of rest. He considered that for the salvation of the Fund it was necessary to appease the apprehensions of this large section of its supporters by registering formal disapproval of any hospitals receiving grants from the Fund while they are concerned in a movement which had caused a scandal among some of their constituents. Archdeacon SINCLAIR put forward his views, and those of the General Purposes Committee, as might have been expected from him, with no narrow Sabbatarianism; as far as was possible for a distinguished clergyman, he backed up the recommendation of the General Purposes Committee from the point of view of expediency. The same may be said of his main supporter, Sir ALFRED PEARCE GOULD, who held that the action of those hospitals which were interested in these shows and received money therefrom was perilous, in that a charity which can trade for profit may lose certain of its eleemosynary support. Mr. SYDNEY HOLLAND moved an amendment that the Council of the Fund should take no action in the matter, and his vigorous speech showed how deep is the difference of opinion on the Council on the matter, a fact which furnishes obvious reasons why the Council should not attempt to come to any decision at all in a hurry. Like Archdeacon SINCLAIR, Mr. HOLLAND also spoke largely from the point of view of expediency, believing that the recommendation, which aimed at consolidating the Fund by speaking in behalf of the spirit of the foundation, was certain to act in the exactly opposite manner and to alienate, in a degree which might be disastrous to the Fund, the goodwill of the public by which the Fund exists. He admitted that the London Hospital, of which he is chairman, received a large annual sum from Sunday entertainments, and considered that it was no business whatever of the Metropolitan Hospital Sunday Fund to attempt to dictate to any charity what should be the sources of its receipts by threatening to consider such sources when making the annual awards. Mr. HOLLAND was immediately found to be quite right in believing that the recommendation of the General Purposes Committee had behind it no solidarity of opinion, for two well-known clergymen, the Rev. H. R. GAMBLE and the Rev. C. H. GRUNDY, seconded and supported his amendment, thereby showing that some clergymen considered that money obtained from Sunday cinematograph shows had not an origin so discreditable as to make it necessary for the Council to punish by any system of fines those charitable institutions which benefited thereby.

An interesting debate led, as will be seen by our report, to the adoption in the first instance of the recommendation of the General Purposes Committee, but it was agreed to refer the matter back to the General Purposes Committee, so that Mr. SYDNEY HOLLAND, who had previously been, through some blunder, deprived of the opportunity, should be able to place his views in detail before the committee. We trust that the committee will think very seriously before forcing the Council to action upon this matter. A very serious situation has arisen in one of the most important of the metropolitan charities, a charity the good work and success of which we have always had deeply at heart, and an ill-considered movement may do serious damage. It must be admitted at once that those responsible for the Fund are in a very difficult situation. No course that they can possibly take will please all their

constituents; the Fund is dependent upon the public, mainly through the churches, for its support, and if the public is not satisfied with the way in which the Fund is administered it will cease to subscribe. How far can the Council allow itself to be swayed by such a situation? Where does honest administration, having regard to the spirit of the foundation, end, and where does mere opportunism begin? We believe that if these questions are faced, the answer will be found different to the one which the Council last week was prepared to give. We are perfectly certain that there are just as many good clergymen and honest observers of religious tenets who are for as who are against the holding of public entertainments on Sunday. This being so, the Council cannot be accused of losing sight of the religious nature of the foundation of the Fund because in a religious matter where there is room for honest differences of opinion it takes one side more than another. On mere grounds of expediency the Council would be well advised not to move in the matter. We cannot imagine good Christians withholding their subscriptions because other persons, equally good Christians, interpret the ties of religion in a looser manner than themselves. The views of any persons who consider that the money earned by cinematograph shows is infamous, in the manner in which, say, the revenues were infamous of those bishops who for years farmed the brothels of South London, are hardly worth attending to. It will be gathered from this that we sincerely hope that when Mr. SYDNEY HOLLAND has put his views before the General Purposes Committee that body will alter the form of its recommendation. It is our opinion that the Metropolitan Hospital Sunday Fund, without derogating whatever from its high functions as a mainly religious foundation, can well afford to take no action in the matter of Sunday shows.

## Polycythæmia and Plethora.

THE conception of plethora occupied an important place in the pathology of the early and middle parts of the last century, but owing to the experiments of LUDWIG and his pupils upon the effects of artificially increasing the total volume of the blood by transfusion it fell into discredit, and the adjective plethoric applied to the individual of rotund and rubicund appearance was practically all that remained of it. The study of the cytological characters of the blood, more especially by hæmacytometric methods, showed, however, that variations in the individual elements of the blood were common, and on this foundation the modern work upon the various anæmias and upon conditions of leucocytosis is based. It was soon found that the number of red corpuscles might under certain conditions be increased, and to this alteration the names of polycythæmia, polycythæmia rubra, erythrocytosis, and polyglobulia have been variously applied. So early as 1854 it was recognised by J. VOGEL that such a condition might be relative or absolute, depending upon the total number of red corpuscles in relation to the total quantity of the blood. An interesting examination of conditions of polycythæmia and plethora and of their relations to one another is given in a small book[1] recently published by Professor H. SENATOR of Berlin. He differentiates conditions of oligæmia with relative polycythæmia, produced by severe loss of fluid from the body or by the exudation of abnormally great quantities of plasma from the vessels into the lymph spaces, from conditions of plethora serosa—i.e., polyæmia with relative oligocythæmia, and plethora vera—i.e., polyæmia with or without a relative polycythæmia. He goes on to point out that modern teaching in regard to this matter practically dates from the recognition by H. VAQUEZ of the peculiar chronic disease often called after him and characterised by cyanosis, enlargement of the spleen, and polycythæmia, which is more generally known as polycythæmia rubra megalosplenica. Professor SENATOR lays considerable emphasis upon the importance in any condition in which excess of red corpuscles is a feature, of repeated determinations of the red corpuscles, and of collecting the blood for counting from different parts of the body in order to recognise those conditions of polycythæmia which are physiological or which are merely temporary.

A physiological polycythæmia occurs in conditions where considerable loss of fluid takes place without being replaced by drinking, as, for example, after severe muscular exertion and hot-air baths. It may also be observed after heavy meals rich in protein-containing substances, in conditions of convalescence after bleeding and after certain blood diseases, and in newly born infants. Different natural or artificial conditions — living in rarefied air and in high mountain districts, or in the neighbourhood of the sea, and the use of KUHN'S suction-mask—all lead to an increase in the number of red corpuscles. VIERORDT in 1854 described a similar condition in marmots during hibernation. A condition of polycythæmia which must be regarded as pathological occurs as a secondary change in a variety of abnormal states. Among the more important of these may be mentioned a relative polycythæmia occurring after abstraction of fluid from the body by severe vomiting and diarrhœa and by diabetes insipidus, the marked increase in the red corpuscles in conditions of cyanosis resulting from congenital heart disease, emphysema, and that occurring with certain intoxications and infections, especially in poisoning by phosphorus, carbon monoxide, benzine, and certain tar products. It can also occur after administration of tuberculin prepared from the human type of bacillus and in certain cases of chronic tuberculosis, particularly in those in which the spleen is affected. Less commonly it has been seen in association with influenza, trichinosis, malaria, chronic interstitial nephritis, Addison's disease, neurasthenia, and chorea. It is probable here that the excess of red corpuscles is due to diminished oxygen tension in the blood, leading to increased activity of the blood-forming tissues. When all these conditions have been excluded there still exist two forms of primary or idiopathic polycythæmia —viz., the form already mentioned as having been described by VAQUEZ, and a form charactered by high blood pressure and usually by enlargement of the left ventricle, but without splenic enlargement, and known as polycythæmia hypertonica or Geisböck's disease. On the basis of about 50 cases of the former condition at present recorded Professor SENATOR reviews its general clinical and pathological characteristics. The subjective symptoms of which the patients usually complain are vertigo, sensations of blood

[1] Polyzythaemie und Plethora (Polycythæmia and Plethora), von Professor Dr. H. Senator, Geheimer-Medizinrat in Berlin. Berlin: August Hirschwald. Pp. 80. Price M.2.40.

rushing to the head, attacks of headache and sickness like migraine, feelings of fatigue and heaviness of the limbs, dyspnœa, and disturbances of digestion. Among the objective signs is a dark-red appearance of the face, ears, and hands, which is not like ordinary cyanosis. It varies in degree, increasing when the patient is warm. TRUNECEK has drawn attention to a prominence of the supraclavicular fossæ caused by the distension of the blood-vessels, especially the veins. There is often a tendency to hæmorrhage from the nose and gums. The spleen in typical cases is more or less enlarged, but its size may vary in the same patient at different times. Examination of the blood reveals an excess of red corpuscles, the highest values recorded being 13,600,000 and 14,180,000 per cubic millimetre. The specific gravity of the blood may be greater than normal, and values up to 1072 have been noticed. The viscosity of the blood is always greatly increased, even up to four times the normal. Analyses have shown that the total solids of the blood, the iron, fats, and lecithin, are all considerably increased, the blood serum on the other hand being lower in its specific gravity and poorer in solid constituents than the normal. The hæmoglobin is increased usually in about the same proportion as the red corpuscles. The oxygen capacity of the blood is not diminished and may be greatly increased, unlike the condition of polycythæmia occurring in cyanosis from congenital heart disease, in which it is diminished. Recent observations have established that there is an increase in the total quantity of blood, and that therefore the condition is one of true plethora, which, however, does not, as might have been expected, lead to an increase of blood pressure or to cardiac hypertrophy. Professor SENATOR describes the results of some interesting observations upon the respiratory gaseous exchanges in this disease, which are found to be greatly increased. This is attributed to some specific stimulation of the tissue respiration and not to the increase in the red corpuscles and in hæmoglobin. The pathological changes found after death comprise general plethora, enlargement of the spleen, and certain changes in the bone marrow. After reviewing the chief facts in this connexion, Professor SENATOR concludes that the condition is due to a primary disturbance of function on the part of the blood-forming organs.

The other form of primary polycythæmia—viz., Geisböck's disease or polycythæmia hypertonica—has been much less often observed, and only about a dozen undoubted cases are on record. The symptoms are not unlike those of the splenomegalic form, but in about half of the cases apoplectic seizures occur and chronic nephritis and arterio-sclerosis are much more frequently apparent. The patients usually present a typical apoplectic habit of body. Although polycythæmia is obvious and the appearances suggest a true plethora, actual determinations of the total quantity of the blood have not yet been made in this condition. The blood pressure is greatly increased, being often above 200 millimetres of mercury, and values as high as 320 have been observed. Various hypotheses have been put forward in explanation of the pathogenesis of these cases, but none of them are satisfactory. NÄGELI supposed the high pressure was due to increased viscosity of the blood, but it has been shown that a similar increase occurs in the splenomegalic form without rise of blood pressure. MÜNZER attributed the polycythæmia to general arterio-sclerosis, but, as has been pointed out by GEISBÖCK himself, arterio-sclerosis is not a constant accompaniment of this disease. Professor SENATOR suggests that the two varieties of polycythæmia may prove to be related to one another, since cases of polycythæmia without splenic enlargement and with normal blood pressure occur on the one hand, and, on the other hand, splenic enlargement in the splenomegalic form is variable and is not necessarily an early feature of the cases. He suggests a careful search for possible transition cases. It is of interest in this connexion to note that in a paper by Professor R. STAHELIN,[1] published since Professor SENATOR'S book, records are given of seven cases of polycythæmia with increased blood pressure observed during one year, an observation which suggests that the hypertonic form of polycythæmia is more common than the number of cases on record might suggest. The subject is one of practical interest, and offers a field for further observations which may yield valuable information regarding the pathology of the blood-forming organs.

## A Question for Italy.

THE "Third Italy," which celebrates in the year now passing the fiftieth anniversary of the proclamation of its independence, has still much leeway to make up if it would justify, morally and socially, its subversion of the old order in favour of the new. Crime, of a frequency and an atrocity scarcely to be paralleled in its mediæval or pagan predecessors, is as yet a constant quantity in its daily life, maintaining for it what one of its public notabilities has called a sinister priority among its Latin sisters in rapine, brigandage, and homicide itself. No page more sombre in its recent history has, however, been yet disclosed to a painfully impressed world than that which records the assassination of a dama d'onore in waiting on Queen ELENA, the rank and profession of the assassin, the previous history of the latter, and the incidents preparatory to the crime. The "serena e modesta austerità" of the Italian Court, as the leading Roman journal calls it, a moral atmosphere maintained, if not indeed created, by an exemplary King and Queen, throws the lurid tragedy into still stronger relief, and explains the urgency with which, in the Chamber of Deputies, the War Minister was asked to account for the presence in the army of an officer so degraded as the assassin, who, himself a patrician like his victim, had forfeited his right to hold command in a distinguished regiment and enjoy free access to the Royal palace. The Minister could only admit that, in spite of repeated admonishment and even punitive discipline, the Baron VINCENZO PATERNÒ was still tolerated in the service, though a notorious evil liver, whose rôle at his native Palermo, at Rome, Florence, Siena, Lucca—wherever, indeed, he was quartered,—was that of the seducer and the extortioner, seduction and subsequent extortion being his "stock-in-trade" to meet the expenses of a life luxurious and self-indulgent beyond his means.

[1] Berliner Klinische Wochenschrift, Jan. 16th, 1911, p. 101.

With the promise to take stringent measures to prevent such scandals in the service as the continuance of abandoned LOTHARIOS on the official staff, the War Minister seems to have satisfied his interpellants, leaving the well-conducted citizen to moralise on the maxim, "Noblesse oblige," and naturally to infer that crime and violence in so-called "good" society must have their counterpart in the less "good." Imitation, indeed, is ever a potent factor towards degradation of character and breach of the law, and, in proportion to the degenerate individual's retrocession to the animal type, the imitative or mimetic instinct becomes accentuated or reinforced. Herein lies the significance of an awful story.

At this moment the superior Italian press, in full recognition of this instinct, is lamenting the publicity given to the tragedy and anticipating with dismay the recovery of the Baron from the wound inflicted by his attempt at suicide, his removal to prison, and thence to the criminal court, where the revolting details of his career and crime will be served up anew with all the particularity and the repetition familiar to Italian tribunals. In the official organ of the Prime Minister, Signor LUZZATTI, the ablest of Italian publicists and men of letters, GUGLIELMO FERRERO, is utilising the occasion to dwell on the "intellectual bequest of CESARE LOMBROSO," and, while alive to the exaggerations of that strenuous pioneer, is insisting on the scientific value of his main thesis—to wit, that anthropology, particularly in backward nationalities like his own, should have State recognition not only in the establishment of university chairs devoted to the subject but in the opportune surveillance of tender youth, in anthropometric examination reinforced by medical inquiry into family history, and in the adjustment of elementary education in harmony with their findings. From Palermo comes testimony as to the type to which the assassin and would-be suicide Baron PATERNÒ belonged—one in which the animal instincts were abnormally and precociously strong,—the unbridled gratification of these inducing a physical and moral deterioration till the adult was already a victim to neurasthenia and morally as well as physically septic. Gambling for high stakes; plunging into the vortex of pleasure uncontrolled by any feeling of professional responsibility, or, indeed, of self-respect; hopelessly enmeshed in the toils of the money-lenders; and sticking at no device for raising funds; paying court to married ladies of his own class, and if possible compromising them till he could extort hush-money to save them from the scandal he had contrived,—such were the methods, such the career, of this young cavalry officer till, on his latest victim, the amiable, accomplished, universally beloved, if weak, Contessa TRIGONA, refusing him a sum which would have ruined her (already sorely reduced in means by his exactions), he decoyed her to an obscure hotel in Rome, and there drove a stiletto into her throat from which she died instantaneously, while the revolver which he discharged below his ear seems to have taken but partial effect. And all this transacted in an aristocratic *entourage*, nay, involving one of the *personnel* of the Court, and in the year when Italy is proclaiming to the world the blessings of the new departure she took 50 years ago! Verily, the cynic may be excused for asserting that sin and crime are a constant quantity, in spite of "progress" and "civilisation" and "culture," but it is the duty of medicine to reinforce the educational efforts necessary to prove the fallacy of the creed that "man was made to mourn" for ever.

# Annotations.

"Ne quid nimis."

## THE ROYAL SOCIETY OF MEDICINE: THE SOCIETY'S NEW HOUSE.

WE publish this week a brief account of the new house which is now being built for the Royal Society of Medicine on a very appropriate and convenient site where Wimpole-street runs down into Henrietta-street, Cavendish-square. The exigencies of our space have compelled us to reduce greatly the reproductions of the plans, but a key to the size of the various departments is furnished by the noble dimensions of the library. The library extends the whole length of the building, being 110 ft. long, and appears in Fig. 5 on p. 759 as 2½ in. long only. The Council and officers of the society are, in our opinion, to be warmly congratulated on their choice of plans and on the design of their architect, Mr. John Belcher, R.A., which is well shown in the special plate. It now remains for the medical profession to take its part in supporting an institution which is playing, and is destined to play more fully, the rôle of an academy of medicine in this country. The financial position of the society is perfectly clear, and is one that justifies the belief of all who have looked into the matter that great prosperity lies ahead. To some extent, however, that prosperity is bound up in the society's house—it is important that the house should go up quickly and that there should be left behind no legacy of debt. When the society possesses its noble headquarters the membership is bound to increase, but in the meantime the building has to be paid for. The lesson seems to us to be that the intending member should not wait till the house is erected before joining the society, and that the intending donor should take his cheque-book and sit down quickly and write the figure suggested in the parable, or more.

## THE END OF THE CHOLERA EPIDEMIC AT MADEIRA.

NEARLY three weeks having elapsed since any case of cholera was reported, Madeira has been declared officially free from the disease. The first cases are believed to have occurred about Oct. 14th, and the nature of the disease was officially recognised only on Nov. 26th. The official returns show that the disease attacked 1769 persons and that the deaths were 556. An analysis of cases which, it is understood, will be issued later by Dr. Carlos França will throw much light on the merits of different modes of treatment, and perhaps also on the manner in which the disease spread amongst the people, but meanwhile the following facts are available and are of general interest. The onset was acute in 75 per cent. of the cases; insidious and gradual in 25 per cent. The duration of the disease was from three to ten days. Cramps during the first 24 hours were present in 95 per cent. The vibrio was found in hardly 10 per cent. in the vomit. A very small percentage lapsed into a quasi-typhoid condition subsequent to the cholera symptoms, a condition which lasted some 10 days. Of five pregnant women four aborted; 10 per cent. of those attacked were known to be habitual alcoholics. Amongst about 350 persons who having been in contact with cholera patients were

placed in isolation, many were observed to carry the bacillus for more than three weeks without any cholera symptoms, but out of 71 nurses and attendants at the lazarette hospital not one contracted the disease or showed the presence of the bacillus in the excreta. Amongst the complications only two or three died from uræmic coma, but many suffered from protracted anæmia. Twelve cases of urticaria were observed, and there were nine cases of intestinal hæmorrhage. There were ophthalmic symptoms, mainly conjunctivitis, in more than 30 instances. The epidemic spent itself amongst the most careless, the dirtiest, and the least instructed of the people; and the general mortality would have been greatly mitigated if the cases had been notified earlier, and if some effective treatment had been possible before collapse set in and before it was attempted to remove patients so gravely ill to a distant hospital. "But all is now over," writes our correspondent on the island. "Holidays are decreed, and Funchal is *en fête*. It becomes us, nevertheless, to press upon the authorities the urgent need of works, both of amelioration and development. During the last few weeks the barometer, standing at a high level, has hardly varied 1-10th of an inch. The temperature has been steady at about 65° F., and the island has been bathed in a dry, gentle, descending current of air. The registered sunshine has been about 10½ hours per day. The hygrometer has shown 8°–10° of difference (dry and wet) at the temperature of 65° F. In a more concrete way the climate is illustrated by the profusion of flowers, the abundance of strawberries and English summer vegetables at this season. Madeira is hardly more than three days distant from England, and the policy of the Government, which in Republican form is working smoothly, should be to make their priceless possession generally available."

## PAINFUL DOUBLE TALIPES VALGUS OF TUBERCULOUS ORIGIN.

IT has been known for a good many years that under the term "rheumatism" there lies concealed a number of different causal factors united only in the common clinical features of pain, chronicity, and the absence of marked physical signs in the parts affected. Various micro-organisms have been described and figured by different workers as related to rheumatism; the gonococcus has been proved responsible for some varieties; "painful heel," thanks to skiagraphy, has been successfully operated for; and results have been published showing the success of various vaccines and serums in ameliorating or curing certain conditions. The fact, however, that the tubercle bacillus may be the underlying cause in certain of these rheumatic conditions, more especially of the feet, has not been sufficiently recognised in this country, although so long ago as 1905 Molinar, working under Poncet, published a thesis on the subject.[1] No apology, therefore, is necessary for drawing the attention of the profession to a case of painful double flat foot of tuberculous origin described by Professor Poncet in the *Gazette des Hôpitaux* of Dec. 31st, 1910. The patient was a sempstress, 30 years of age, who came complaining of pains in the calves of the legs and soles of the feet. As a child she had been rather delicate. At the age of six she had eye trouble lasting from 16 to 24 months, and leaving a permanent opacity on the right cornea. Menstruation started at the age of 13, and was regular. In 1901 she had a normal confinement, and it was from that time that she dated the frequent rheumatic pains and persistent slight cough from which she had suffered every subsequent winter. In 1906, owing to the persistence of this cough and a gradually increasing loss of weight, she was medically examined and found to have signs of pulmonary tuberculosis in both apices. For this she was admitted to a sanatorium, where she remained six months, being discharged much improved but not cured. In February, 1907, during a busy season for her, she first noticed pain in the right foot. The pain grew gradually during the course of the day, was made worse by standing and walking, and was situated in the sole of the foot in the region of the astragalo-scaphoid articulation, and underneath the external malleolus. Rest in bed at night caused it to disappear, though an indefinite tenderness persisted. Gradually, however, during the year pain became more constant, rest had less effect on it, the left foot also became involved, and eventually in November she had to give up work. At that time, when examined by Professor Poncet, there was no apparent lesion, swelling and discolouration were absent, and the joints moved freely. There was, however, some wasting of the calf muscles. When seen again, however, four months later, on account of the severity of the pain, she had in the interval acquired marked valgus, most pronounced in the right foot. The soles of the boots were worn away on the inner side, and with the boots off there was seen to be a marked sinking of the plantar arch. The internal malleolus and the scaphoid projected abnormally, the heel was inclined inwards, and the fore part of the foot made with the hind part an angle open outwards. There was marked loss in the power of the peroneus longus, and a finger could be inserted between the ground and the head of the first metatarsal. The left foot was not so markedly involved, but in both feet the plantar arch was obliterated. When fitted with specially designed cork boots she was able in a few months to walk a little without much pain. Walking in slippers, however, was impossible. A course of waters at Aix-les-Bains in 1909 seemed to improve her condition, but in the spring of 1910 the pains had spread to other joints, so that she was unable to move or do any work. The shoulders, knees, and articulations of the fingers became involved in succession, and the clamminess characteristic of joint affections was present. The pains, however, were not constant, but moved from one articulation to another. In August, 1910, she returned to Aix for another "cure," and at the time of writing is so much better that she is able for a short time to discard the orthopædic boots for ordinary footwear. The case as described is one of ordinary rheumatism. There is apparently no suspicion of gonorrhœal taint, and there is no leucorrhœal or other vaginal discharge; and Professor Poncet does not hesitate to ascribe a tuberculous origin to the affections of the feet.

[1] Tarsalgie des Adultes d'Origine Tuburculeuse, Lyon, 1905.

## THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE Seventeenth International Congress of Medicine will meet in London in the summer of 1913, as perhaps our readers hardly need to be reminded. The exact date is to be fixed by the International Permanent Committee, which will assemble in London on April 21st and 22nd next, under the presidency of Dr. F. W. Pavy. At the same meeting the list of sections of the Congress will be constituted. Any wishes or propositions concerning the arrangement of this list may be sent, up to April 1st, to the honorary general secretary of the Permanent Committee, Professor H. Burger, Vondelstraat 1, Amsterdam, or to the Bureau of the committee, Hugo de Grootstraat 10, The Hague, Holland. The committee will be glad to receive, before the same date and at the same addresses, any information or propositions concerning the organisation of the Congress which interested parties may desire to forward. Our last references to the arrangements for the Congress will be found in THE LANCET of Oct. 22nd (p. 1234) and Nov. 5th, 1910 (p. 1368), and some particulars of the International Permanent Committee will be found in THE LANCET of April 16th, 1910, p. 1091.

Dr. W. P. Herringham, of 40, Wimpole-street, London, W., is the secretary of the 1913 Congress.

## QUARANTINE FOR DIPHTHERIA CARRIERS.

THE energetic measures taken in Chicago to place antitoxin at the disposal of the entire population have already been described.[1] Though last year there was a recrudescence of this disease, it is encouraging to see that the death-rate has on the whole been enormously reduced. Nevertheless, this has not prevented a great increase in the number and the severity of the precautions taken. The statistics of the last five decades have just been published by the Chicago health authorities, and these show that from 1860 to 1869 the average annual death-rate from diphtheria amounted to 159 per 100,000 of the population. From 1870 to 1879 it was 112, from 1880 to 1889 it was 174, from 1890 to 1899 it was 93, and from 1900 to 1909 there were only 22 deaths per annum due to diphtheria per 100,000 of the population. Undoubtedly this wonderful result is in the main due to the use of antitoxin, and even more lives would have been saved if in all instances the proper measures had been taken as soon as the diagnosis of the disease had been established. With the use of antitoxin must also be associated measures of isolation and disinfection, and these later precautions have now to be applied not only to patients but also to disease carriers. This latter measure is especially difficult to enforce. But the Chicago Health Department has boldly seized the bull by the horns. The throats of apparently healthy school children have been examined. If a single case of diphtheria occurs in a school cultures are made from samples taken from all the throats of the children attending that school. When it is thus demonstrated that, though a child is apparently in good health, it is a carrier of diphtheria bacilli, the child is at once isolated and kept in quarantine till there are no more pathogenic bacteria in its throat. Outside the door of the room where the child is thus confined a card is suspended, bearing the following inscription:—

CARRIER OF DIPHTHERIA
HERE.
KEEP OUT.

Then in smaller type there is the following explanation:—

A diphtheria "carrier" may not be sick, but has diphtheria germs in the throat and can spread diphtheria. Such persons will be required to stay in the house until the throats are free from germs. Cultures will be taken to determine this. Other persons in the house can go in and out. Neighbours and friends must stay out. Milkmen must take the usual precautions. These rules must be obeyed until this warning card is taken down by the Department of Health.

Naturally not a few parents have rebelled against the severity of such enactments, and in some instances have been supported by local medical practitioners. The latter called in had looked at the child's throat in the usual way, and had failed to detect that there was anything suspicious. But these practitioners are now realising that such measures are only taken by the authorities after bacteriological analyses. This service entails a very great increase of work. At one moment the Chicago Municipal Laboratory received more than 1000 throat cultures to examine per day. In two schoolrooms, where there had been cases of diphtheria, no less than 25 per cent. of the children, though apparently in good health, were found to be carriers of the diphtheria bacilli. When such a crowd of children had to be put in quarantine it will easily be imagined that these novel and stringent measures caused no small commotion. This new service was first instituted last December, and for the week ending Dec. 16th, 1910, there were 239 new cases of diphtheria notified and 258 carriers. But for the next week there were not more than 150 carriers, though the new cases were nearly as numerous—namely, 224. A week later—that is, the last week of last year—the number of carriers had fallen to 53, and the cases of actual disease were reduced to 146. Only five carriers had been discovered the first week and seven the second week of the new year, so that this source of danger has been largely overcome, and the disease itself seems to be slowly dying out.

[1] THE LANCET, Dec. 27th, 1910, p. 1782.

## GONORRHŒAL INFLAMMATION OF THE VAS DEFERENS SIMULATING APPENDICITIS.

IN the *Bulletin de la Société de l'Internat des Hôpitaux de Paris* for January M. René le Fur has reported seven cases in which gonorrhœal inflammation of the vas deferens simulated appendicitis. Statistics have been published to show that in about 40 per cent. of cases of gonorrhœal epididymitis the vas deferens, prostate, and vesiculæ seminales are involved. M. le Fur goes much farther than this, and states that, having systematically examined these parts per rectum in all cases of gonorrhœa, acute or chronic, he has always found them involved in cases of epididymitis. The cases of inflammation of the vas simulating appendicitis may be divided into two classes—those which are accompanied by epididymitis and those which are not. The former cases may clinically take several forms—acute, subacute, or chronic, just as may appendicitis. Cases of very acute epididymitis, with severe pain in the abdomen and right or left iliac fossa, vomiting, obstinate constipation, tympanites, and a temperature of 104° or 105° F., due to an intense peritoneal reaction and exactly simulating the symptoms of acute appendicitis, are well known. These symptoms are due to concomitant inflammation of the vas and vesicula seminalis which has involved the cellular tissue and even the peritoneum covering the pelvic part of the vas and the vesicula seminalis. The following is an example of inflammation of the vas simulating appendicitis. A man, aged 25 years, had slight epididymitis about the fifteenth day of a first attack of gonorrhœa. In the fourth week on returning from a railway journey he was seized with violent pains in the right side of the abdomen, tympanites, vomiting, and a temperature of 105° F. There was absolute constipation and flatus was not passed. He showed the pinched peritoneal face. He and his famlly were very uneasy, and thought he was suffering from appendicitis. M. le Fur reassured them, though he was himself uneasy, and prescribed opium and the application of ice to the abdomen, which relieved the pain. But on the following day the vomiting and the fever persisted, there was some delirium, the tongue was dry and furred, the pulse was rapid and weak, and the tympanites had increased. M. le Fur then diagnosed appendicitis and called in Professor Berger, who confirmed the diagnosis of appendicitis, but advised against operation, and recommended that the treatment be continued. For two days the condition of the patient was serious. There were a frequent and imperious desire to micturate, and a feeling of weight in the lower abdomen and fundament. On the fifth day the urethral discharge, which had disappeared completely, reappeared in an abundant form. Rectal examination showed that the right vesicula seminalis was much enlarged and painful; the vas deferens could be followed along the pelvic wall as an elongated painful swelling. On pressure on these organs and on the prostate pus exuded from the urethra. Further, there was in the pouch of Douglas a median swelling of the size of a Tangerine orange, which was painful and soft. The urethral injections were resumed, suppositories of thigénol were inserted, and the bladder was washed out with a 1 in 4000 solution of permanganate of potassium. Rapid improvement took place. The diagnosis

was altered from appendicitis to spermatocystitis and inflammation in and about the vas deferens with intense peritoneal reaction. Under massage of the vesicula seminalis and vas deferens, warm injections, and suppositories the swollen vas diminished, but complete absorption of the swelling as well as of the tumour in the pouch of Douglas occupied a long time.

## THE SANITARY OFFICERS (OUTSIDE LONDON) ORDER, 1910.

A MEETING of medical officers of health, representing 30 sanitary districts in the Administrative County of Devon, was recently held for the purpose of discussing with the county medical officer the extra duties imposed on them by recent legislation in public health matters. Among the subjects discussed was the Sanitary Officers (Outside London) Order, 1910, upon which a resolution was passed requesting from the various authorities "an increase of salary as suggested by the Local Government Board, on account of the many extra duties thrown on medical officers of health" by recent Orders and enactments. In a leading article in THE LANCET of Jan. 21st, p. 175, we discussed this Order of the Local Government Board and the memorandum which accompanied it, and we drew attention to the expressed opinion of the Board that "it is not sufficient merely that a medical man is found who is prepared to accept the salary offered; it is more important that the salary should be such that it will be worth the while of a capable man to accept it and to give a sufficient amount of time to his duties." We also stated that the particular risk which the medical profession runs at the present moment is that insufficient salaries should be offered and accepted for the discharge of amalgamated duties. It is in part-time appointments especially that the imposition of extra duties is a sufficient justification for the request for an increase in salary, owing to the loss that is incurred from lessened opportunities for other work. We trust that the legitimate requests of those part-time officers of the sanitary districts in Devon for increase of salary will be met by the various authorities concerned with understanding and compliance.

## THE PREVALENCE OF TRACHOMA IN FINLAND.

FINLAND has long been the home of trachoma, which under the name of catarrhal ophthalmia was stated in 1832 by Sanmark to be the cause of illness in more than half the patients in the hospital for infectious diseases in Vasa. Improved hygiene has now bettered matters considerably, but the result of an *enquête* by the Finnish Government in 1908 shows that the disease and its sequelæ, such as entropion and pannus, still are a national scourge. This material has been recently analysed by Grönholm and Kuhlefelt,[1] who estimate the present incidence of the disease at the high figure of 130,000, or 4·3 per cent. of the total population. In 1908 5273 patients were treated for this disease, and of the 83,052 Finnish imigrants in the years 1903–08 3511 were affected. In schools, factories, prisons, and other public institutions 1293 patients were discovered in a total of 26,000 persons examined. The disease was found less frequently in men than in women, 3·3 per cent. of the former and 5·2 per cent. of the latter being affected. The disease was most frequent in early adult life, but it was common at all ages. Of the labouring communities, the peasants on the land suffered more frequently than mechanics and factory hands, while among the upper classes the disease was relatively rare. The population of Finland consists of a Swedish-speaking and a Finnish-speaking element; the disease was found to be almost exclusively confined to the latter element, probably owing to its insanitary habits. Several charts illustrate the prevalence of the disease in various districts, and the similarity, on the whole, in the geographical distribution of trachoma and tuberculosis. The astonishing observation is made that only 4·1 per cent. of the total number of patients sought medical aid in 1908. Many factors contribute to this apathy on the part of the patients. The disease may exist for years as granular conjunctivitis without troubling the patient to any great extent. The condition may even heal spontaneously without being recognised. Again, in the later stages of granular conjunctivitis scar formation, entropion, and trichiasis may attract but slight attention. Many patients also who realise that their blindness is incurable find little comfort in medical attendance. Unfortunately, even in the active stage of the disease, when there are lacrymation, œdema, defective vision, and pain, medical aid is not invariably sought, though more frequently in the towns than in the country. Thus in Helsingfors 25·1 per cent. of the patients consulted medical men in 1908, while in a country district the contemporary percentage was 1·9! This deplorable neglect of the disease naturally leads the writers to the vexed question of compulsory notification, and the treatment of patients at the cost of the State. Their proposals are based on the regulations in force in Hungary and Germany, where the disease has been materially reduced by compulsory notification, by medical inspection of school children and other groups of the community, and by the establishment of polyclinics and labour colonies for the patients. The appointment of medical officers specially trained for the work in the worst districts is also desirable. These regulations may be costly enough, but the annual loss to the nation from total and partial blindness warrants considerable expense in stamping out the disease. About 1000 (or one-third) of all cases of blindness in Finland are due to trachoma. Add to this figure the number of workers whose productive powers are more or less reduced by partial blindness, and the nation's pecuniary liability (if insurance against sickness existed on German lines) would, indeed, be heavy.

[1] Bidrag till Kännedomen om Trakomendemien i Finland samt Förslag till Atgärder för dess Bekämpande, Supplementhäfte till Finska Läkaresallskapets Handlinger, December, 1910.

## PLAGUE IN GERMAN EAST AFRICA.

IN February last there was published in the *Archiv für Schiffs und Tropen-Hygiene* an account of a plague epidemic, mainly in rats, in the vicinity of Lindi. The date is not mentioned, but seems to have been in August and September, 1910. The infection was virulent—a native baby died after only two hours' illness, but only three cases of human plague occurred, and this is ascribed to the early recognition of disease in rats and to strenuous measures at once taken for their destruction. Of 520 rats caught in the first month 5 per cent. were infected; later in the epidemic the proportion increased to 14 per cent. The writer of the report, Dr. Manteufel, agrees with the opinion of the Bombay Plague Commission, that the epidemic must be very widespread among rats before it begins seriously to attack men. He found that mus decumanus was more attacked than mus rattus (8 per cent.: 1½ per per cent.). Few mice were caught, but they were heavily infected. In Hong-Kong it may be said that mus rattus is two or three times as often infected as mus decumanus. Dr. Manteufel considers that his experiences at Lindi prove the spread of plague by fleas because the guinea-pigs, exposed as flea-traps, contracted plague and died, and pulex cheopis (three males, one female) were found on one of those that died; they had all buboes in the neck, none in the mesenteric glands. Mesenteric buboes occur in animals infected by feeding on plague material, and no mesenteric buboes were found in rats that died during this epidemic. Rats that were healthy when caught carried few

fleas. Plague-infected rats had many fleas, two-thirds of those enumerated being carrier fleas, pulex cheopis. One rat covered with fleas had ulcers on the skin of the abdomen in which flea larvæ were found. If there were plague buboes in rats bipolar-staining bacilli were also found invariably in the spleen, but these might be found in the spleen though there were no buboes. He concludes that plague can be best prevented if the rats are carefully watched and their having become infected be discovered before the epidemic is widely generalised among them. Then they are to be assiduously diminished, and the danger will have passed away before the general public has come to a knowledge of its danger. On April 2nd, 1910, we noted an epidemic of plague which had occurred at Dar-es-Salam in German East Africa.

## THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT ROME.

THE arrangements for this country for the forthcoming International Congress on Tuberculosis, which will meet in Rome from Sept. 24th to 30th, 1911, have been placed in the hands of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, 20, Hanover-square, London, W., at the request of the Italian authorities. An executive committee has been formed for the purpose of arousing interest in the congress in this country, and for collecting information, papers, &c., and inducing local authorities to send delegates to the congress. The following form the committee: Sir Shirley Murphy, Professor William Osler, Professor G. Sims Woodhead, Dr. Arthur Newsholme, Dr. Theodore Williams, Dr. T. D. Acland, Dr. Hector Mackenzie, Dr. E. W. Hope, Dr. Nathan Raw, Dr. R. W. Philip, and Dr. J. J. Perkins, who will act as honorary secretary. A representative national committee has also been formed. Anyone who is interested in the congress should apply to the honorary secretary of the National Association for the Prevention of Consumption, 20, Hanover-square, W., for particulars, and any intending contributors should send in their papers to the same address.

A CONFERENCE was held on Tuesday afternoon last, March 14th, at the Local Government Board, over which Dr. A. Newsholme, principal medical officer to the Board, presided, the subject of consideration being what steps should be taken to arrest the present epidemic of measles in London. The majority of the metropolitan medical officers of health were present in addition to Dr. R. H. Crowley, representing the Board of Education, Dr. Theodore Thomson, assistant medical officer of the Local Government Board, Sir Shirley Murphy, and Dr. J. Kerr. Mr. Burns, at whose instigation the conference was held, took part in the proceedings.

THE King has sanctioned the promotion of the following gentlemen from Honorary Associates to Knights of Grace of the Order of the Hospital of St. John of Jerusalem in England: Dr. P. Frank, Dr. F. A. Brooks, and Mr. Edwin Lee.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON.—The committee of management of the Sussex County Hospital at Brighton on March 8th received an official letter from the Home Office stating that His Majesty the King had been graciously pleased to command that the hospital shall henceforth be known as the Royal Sussex County Hospital. The institution was inaugurated in 1828, and has had each reigning monarch as its patron. The hospital has been extended from time to time, and its present extent can be gathered from the figures for 1909, when the in-patients numbered 2359 and the out-patients 10,046. The cost of maintenance is in round figures £15,000 per annum.

# AN EGYPTIAN HOLY MAN.

BY C. G. SELIGMANN, M.D. LOND., M.R.C.P. LOND.

THE title of this note has been chosen because it deals—though doubtless incompletely—with the outward manifestations of the spiritual development of Mohammed Moussa, an Egyptian *fellah*, which led to this man being recognised as especially holy (*maburak*) by his companions. My opportunity of studying Mohammed Moussa occurred while a guest at Professor Petrie's camp at Qurneh in January, 1909, and I desire to take this opportunity of thanking him and his assistant, Mr. Ernest Mackay, for much kindness and assistance, while I am also greatly indebted to Mr. Brian Hatton for the drawing of a *zikr* which illustrates this paper.

Mohammed Moussa is a native of Qift, and is one of the men who for some years have worked each winter for Professor Petrie. He is recognised by his fellow workmen as distinctly holy; in fact, those to whom I talked concerning him admitted that if he persevered in holiness he might after his death be honoured as a holy man. Mohammed Moussa is rigorous in the observance of the prayers and customs which are enjoined on all Muslim, but these virtues are so general in his fellows that they can have had little part in producing the belief in his exalted spiritual status, which at the time of my visit was in fact due to the ease with which he passed into a condition of ecstasy.

Mohammed Moussa, whose photograph, taken by Mr. Mackay, is reproduced in Fig. 1, is a middle-aged man of the usual stout build and moderate stature of the Egyptian *fellah*. He is a good and steady worker, and presents no tricks of manner or behaviour to differentiate him from his fellow workers. He had not been subject to any form of fit or seizure when a child, though even as a young boy he was very religious. His first ecstasy appears to have occurred during adolescence—certainly after puberty, and probably between 17 and 20 years of age.

FIG. 1.

Mohammed Moussa.

The occasion of my becoming aware of Moussa's attacks of ecstasy was a *zikr* held by his fellow workmen in thanks for the recovery from sickness of one of their number, Mohammed Osman. Osman had during his sickness vowed that on his recovery he would hold a *zikr* and kill a sheep; the sacrifice of the sheep he postponed until his return to Qift, but after the *zikr* sweetmeats and *karob* beans which he provided were distributed among all present. *Zikr* usually, but not invariably, takes place after sundown. They may be held on any day, but my Qift informants considered Fridays, Mondays, and Thursdays the most appropriate days. Though especially in the nature of a thanksgiving they are popularly regarded as meritorious, and their performance is, in fact, a religious act to all who take part in them. The

literal meaning of *zikr* is "remembrance" or "bringing to mind" (of God's glories), and Lane has recorded their occurrence among the Cairenes at a number of public and private ceremonies. They may be held in honour of a dead man, and there seems to be a popular and entirely unorthodox belief that his soul may thereby be helped in Paradise.

The *zikr* during which I first saw Mohammed Moussa pass into ecstasy began by a number of men standing in two parallel rows facing each other, one row being longer than the other, the latter consisting largely of small boys, and as they wearied of the dance this row ceased to exist. Between the two rows at the far end was one man Ali Hamid, assisted by Mahmud Ghalad, who is a *sayid*—i.e., a descendant of the Prophet. These men intoned certain songs said to be very old, which Mr. G. D. Hornblower (to whom I am indebted for much information relating to the *zikr* and kindred subjects) informs me were probably *medh*, i.e., praises of the Prophet, the men forming the rows dancing vigorously between the songs. Their rhythmic bowing and swaying motions were accompanied by a loud throaty inspiration or by the ejaculation of one of the names or attributes of Allah. The commonest ejaculations were *Allahu qaim*, "God is the established"; *Allahu qadir*, "God is omnipotent"; *Allahu daim*, "God is everlasting"; and *Allah haq*, "God is just." The words were by no means clearly articulated—indeed, the last expression was shortened till all that could be heard was a deep expiratory grunt. Each expression of praise was repeated continuously during the whole of one figure, regulating or being regulated by the rhythm of the movement it accompanied. The movements, which usually started with a moderate flexion of the neck and upper part of the body, became wider and more vigorous as each figure proceeded; sometimes a loud thudding noise was produced by raising the heels, the row bringing down the feet simultaneously. In one figure the feet were planted thus \/ and not moved, but the body rotated at the hips to the greatest possible extent each way so that the faces of the dancers turned through nearly 120°. In another figure the left foot was advanced with each flexion of the body and the weight of the body supported upon it. Perhaps each "figure" lasted five minutes, the intervals of rest being half as long.

FIG. 2.

The beginning of a *zikr*.

After about one and a half hours the dance had dwindled to six men, of whom Mohammed Moussa was one. He had joined the dance late and had probably not been dancing more than 20 minutes before he passed into ecstasy. At the end of a figure he several times recited the confession of faith, *La ilaha ill'Allah Mohammedu rasul Allah*, in a harsh guttural voice. This was evidently considered as the beginning of ecstasy, for his right-hand neighbour, Nasr-ud-din, firmly linked his arm in his, but the first physical signs I noted were general rigidity of the body, accompanied with tremors from the legs upwards, the neck was strongly extended, the eyes shut, and at first the lips moved. Then Mohammed Moussa jumped up and down on the tips of his toes several times, after which with head thrown back he struggled violently, but was held by his neighbour while another man patted his breast and back as though to soothe him. His struggles became more violent, his head was thrown back, his teeth tightly clenched, each inspiration was deep and laboured, he frothed at the mouth and his saliva was blown about during expiration. At first supported upright by his companions he was soon lowered to the ground, where he was sustained in a sitting posture, his pulse at this time being 96. His lips moved, and I was informed that he was now having a vision; his head was slightly bent forward, so that he looked on the ground; his arms were rigidly extended at his sides and could only be flexed slowly. The onlookers carefully bent his left arm into a position of maximum flexion, so that the hand touched the shoulder; the rigidity of the right arm was similarly overcome and the arm and hand placed in the same position. All the men sat down and began chatting; Moussa sat still, occasionally swaying his body and muttering, while the people around him now and then patted his chest and back. This probably lasted about three minutes until Mahmud Ghalab whispered something in Moussa's ear. He started and appeared to come to himself instantly, looking round as if puzzled, while his neighbours laughed; then draping a cloth over his head he recited what I was told were his trance experiences, every now and then kissing a cloth in which he had wrapped his hand. After kissing it he passed the cloth and hand across his forehead, this being a form of thanksgiving. During his recital the crowd filled his pauses with a chorus of the confession of faith in a low impressive murmur. When this was over Moussa took his head in both hands and twisted it round as far as possible in each direction. He was left sitting down and appeared perfectly rational, for when one of the party said "Good night" he answered correctly in a perfectly normal manner. Sweetmeats and *karob* beans were then handed to all.

In answer to my question I was told that Moussa had never bitten his tongue during ecstasy, in which state he visits Paradise (*Genna*), where he sees the saints and prophets and many green birds. His visions do not vary. On his return to the common state of existence he is neither giddy nor nauseated—indeed, as the whole matter is directly from Allah he could suffer no hurt. The flexion movements and the whispering in Moussa's ear are avowedly to restore consciousness.

On another occasion when a *zikr* was held Moussa thrice failed to keep time and twice laughed loudly and appeared to be on the point of ecstasy, but each time after a slight struggle, during which his neighbour Nasr-ud-din took hold of his arm, he again took up the rhythm of the dance. The fourth time that this occurred Moussa struggled violently with Nasr-ud-din, attempting to rush away into the darkness, and succeeding in dragging his friend a yard or two from the line before he became rigid and collapsed in his arms. Moussa was brought round in the manner already related, but on this occasion he did not relate his experiences while in ecstasy.

It is, I think, obvious that Moussa's ecstasy is an example of the condition known as hysteria major or hystero-epilepsy. I do not now propose to discuss the diagnosis and will only refer to the rigidity of the arms to say that I took part in bending one of Moussa's arms and was able to

convince myself that the rigidity of the muscles was only overcome slowly under influence of firm pressure continued for some little time. At the time of my visit Moussa had not during ecstasy or at any other time performed, or attempted to perform, any unusual acts such as are by repute commonly performed by Egyptian dervishes during ecstasy. Perhaps the commonest of these acts is to eat living snakes and to handle scorpions, and Moussa's comrades had no doubt as to his capacity should he wish to do either. This was because he was recognised to be under the protection of Sheikh Rifa'i, to whose devotees snake-bite is harmless, while scorpions, it is alleged, do not bite them.[1]

The next manifestation of Moussa's holiness is described by Mr. Mackay as follows, my own interpolations being placed between brackets. "On May 7th, 1909, I was informed by my head man that two strangers from the Fayum were giving in the village of Mitrahinch performances of various conjuring tricks, together with the handling and biting of red-hot bars. The two men were accordingly invited by myself to come in the evening and show what they could do, a large fire of wood and several irons for heating being provided outside the courtyard of the house. When the work for the day had finished, and after the workmen had had their evening meal [i.e., in the late twilight], the two men from the Fayum made their appearance provided each with a drum. Our men from Qift quickly formed a circle by sitting around the fire, and the two bars were placed in the centre of the fire to get hot. The proceedings opened by a *zikr* being performed by the two strangers sitting down, and in the intervals of this the elder of the two repeatedly told the onlookers to repeat the Fatiha. When about a quarter of an hour had elapsed with this, one of the men, the elder again, walked to the fire and took out one of the irons which was glowing hot [at the other end], walking around the ring and showing it to everybody. He then stood close to the fire and said a few prayers calling upon Sheikh Hussein [Egypt's principal saint, brother of Hassan and of Ali and grandson of the Prophet]. By the time these were finished the iron had become a dull red. It was then repeatedly and carefully licked by the man, who, I noticed, had his tongue well moistened and who drew it in after contact with the iron. The bar was finally held between the teeth of the man for a few seconds. A clumsy and long conjuring trick followed this. I then requested one of my men to ask the performer to lick the other iron in the fire with a dry tongue, and he at once advanced to the fire and took out the remaining bar, which, as it had been longer in the fire, must have been hotter than the first. He then was about to go through his previous performance, when with a loud cry Mohammed Moussa, who was one of the onlookers, rushed into the ring, and, snatching the iron from the man, held it [for more than ten seconds] at both ends and walked around the circle crying, 'Allah! Allah! Allah!'[2] He did this several times, and finally stood in the centre of the ring, close to the fire, holding the iron between his lips for at least ten seconds or more, swaying about as he did so. He then dropped [threw down] the iron and went into the usual *zikr* fit [i.e., a hystero-epileptic attack, *cf. supra*]. Directly the iron was dropped [thrown down] he went into a fit, and his attitude in putting [dropping] it down was as if he had grown tired of it. No word was spoken by any of the men while he was using it to my knowledge. He did not apparently try and cover any special distance, but just walked in the circle formed by our men. At this juncture I had the irons removed, fearing serious consequences to Mohammed Moussa if he should get hold of them again. After he had recovered from this fit, which lasted two or three minutes, in which he was not attended, he cried out again, 'Allah!' and rushed to the fire, and, seeing the irons were not there, demanded them. On being soothed by one of our men he stooped over the fire and threw some of the red hot embers over himself with his bare hands, burning his garments in one or two places. The irons were then again demanded, and one or two of his friends tried in vain to make him sit down; he dragged them around the ring together with a third man who got up to give assistance. Someone then suggested that a *zikr* be started to quiet the man, and this was done, a row of men being quickly formed and Mohammed Moussa placed in their midst. As soon as the performance was started he quieted down and joined in, shortly after retiring with a few of his friends to smoke a cigarette. I then went up and found him quite rational and self-possessed and examined his hands with the aid of a lantern, but could find no trace of burns or any injury. The next day a further examination was made by me, but no signs whatever of burns or even a redness could be seen either on his hands or lips. Also he worked all day as usual with the pick, and though I closely watched him he showed no signs of any tenderness in his palms. The men all tell me that this was the first time he had ever performed this feat to their knowledge, and they were accordingly all astonished. Mohammed Moussa informed me, when I asked him as to what made him get up as he did that he saw the man from the Fayum was a fraud, and something told him that he could perform the feat properly himself. He also seemed rather surprised at my wanting to look at his hands, and said that when he was under the protection of Sheikh Rifa'i no harm could possibly come to him. I may mention before closing that the juggler from the Fayum told me, to cover his discomfiture, that Sheikh Rifa'i was a much more powerful saint than his own—namely, Sheikh abu Salaam, and to this he ascribed the success of Mohammed Moussa." Concerning Mohammed Moussa's condition when he picked up the iron Mr. Mackay writes that he "was not to my mind unconscious when he took up the iron; he seemed in the condition you observed at Qurneh (just before a fit); I think it would be safe to say he was semi-conscious." Further, on examining Moussa's hands by lamplight Mr. Mackay found that he remembered what he had done.

The events which took place before May 7th, 1909, present the ordinary features of ecstasy, and accord with what we know of the physiology and pathology of the nervous system and are certainly not opposed to the accepted teachings of the biological sciences. The reverse applies to the manifestation of special power or holiness witnessed by Mr. Mackay on May 7th, 1909, and although I am not convinced that Mohammed Moussa was at the time able to handle red-hot iron without being burnt, I have reproduced Mr. Mackay's written account of Moussa's performance for two reasons. In the first place, whether or no Moussa in fact held a red-hot iron bar without incurring any lesion of the skin or mucous membrane visible at the time by lamplight or next day by daylight, there is no doubt that his companions believe that the power to do this was suddenly given him. Yusuf, the son of the sheikh of the Qift Ababdeh, of whose honesty I have had much experience, was present at the time and had not a shadow of doubt as to the reality of what he had seen; he had heard of plenty of other instances, and he absolutely failed to see any difficulty in accepting the facts at their face value, or to sympathise with me in my doubts.

Hence, Mr. Mackay's experience at its lowest value is worth recording as an example of one method by which a reputation for holiness may be acquired in the Near East. But I hope that by putting this matter upon record I may help to bring about a result of greater value than this—namely, that my example may encourage observers among native races to study and describe the facts of all instances of the state, or states, which are commonly grouped under the titles of "ecstasy," "possession," and "shamanism," for there is at least *prima-facie* evidence suggesting that these three states in certain cases are due to "depersonalisation" or to "multiple personality," and are in many ways comparable with the examples studied and recorded by alienists and psychologists. Moreover, the accumulation and study of instances like the present, in which harmful substances are reported to fail to produce the lesions which in ordinary circumstances follow their action, seems to be the only way of testing the credibility of a number of unusual and "non-natural" events which are recorded as occurring among savage and civilised peoples at the present day.

[1] Mr. Hornblower tells me of an instance within his own knowledge in which a man was bitten by a snake while pulling down an old house. The man laughed, said he was a Rifa'i, and that the snake therefore could not hurt him; nevertheless, he died in a few hours.

[2] The bars were placed end on in the fire, and therefore one end got hot while the other was used as a handle. The iron was taken hold of at each end and held above the head like the small stick used by dancing girls in Egypt.

WEST CORNWALL INFIRMARY, PENZANCE.—Several young people in Penzance recently collected £100 for providing the West Cornwall Infirmary with the X ray apparatus, and last week it was presented to the institution.

# ROYAL SOCIETY OF MEDICINE.

## THE SOCIETY'S NEW HOUSE.

ON a site at the corner of Wimpole-street and Henrietta-street, Cavendish-square, a house is now being erected which will provide ample accommodation for the Royal Society of Medicine for many years to come, even if the society continues to increase, as it is confidently expected it will do. On this area of nearly 10,000 square feet a handsome building of classical design, by Mr. John Belcher, R.A., will have its main entrance in Henrietta-street and a second and commodious entrance from Wimpole-street.

The building, as recommended by the Council, and approved by the Fellows at a recent special general meeting, will consist of a large, well-lighted, and excellent basement, a ground floor, and three additional floors. On the ground floor will be a handsome and spacious vestibule, two meeting halls—one capable of holding about 500 persons, the other somewhat smaller holding about 150 persons—and patients' rooms (for both sexes), cloak rooms, cashier's and porters' rooms.

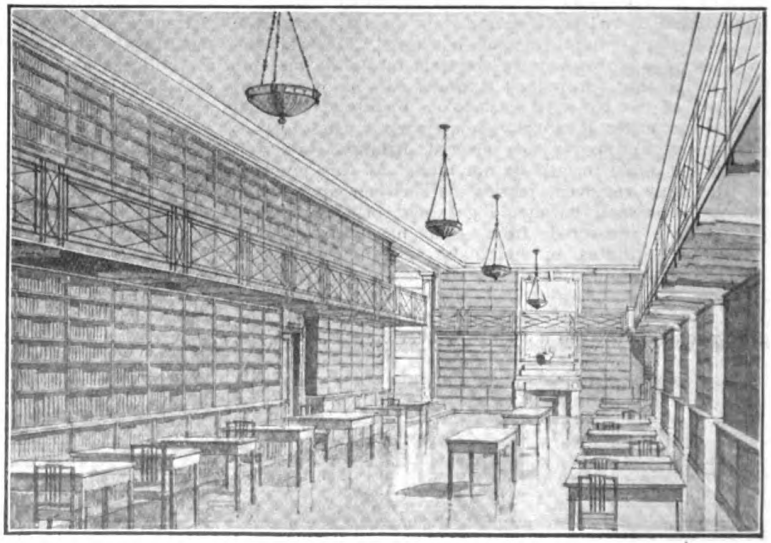
The whole of the first floor will be taken up by the library and by the offices of the secretary, editor, and clerks. The library will extend the whole length of the building, and will be 110 feet long, 28 feet wide, and 19 feet in height. The periodical room will be an annex extending back 21 feet from the library proper at its eastern end. The library will have a gallery; and a mezzanine room with additional tables for readers will open off the gallery, and extend back the whole depth of the building at the Wimpole-street end. The main part of the second floor will be occupied by the council room—over the centre of the library; and by two committee rooms—one over each end of the library—each of which will communicate with the council room. There will also be a tea and conversation room, and lavatories for Fellows. On the third floor there will be a museum; a room, properly fitted and equipped for examining specimens and for histological work; a smoking-room; and a tea and conversation room, and lavatories for lady Fellows. In the basement there will be dressing-rooms and lavatory, and storage for 250,000 volumes.

The financial position of the society is as follows: The debenture debt is much more than amply secured by the property in Hanover-square, and the rent received from the present leaseholders of that property not only covers the interest on the debenture debt, but provides over £1600 a year, without which the subscriptions of the Fellows and members would not be sufficient to enable the society to pay its working and ordinary expenses out of income. The site of the new house has been paid for by money realised by the sale of investments. It was decided by a resolution passed at a special general meeting of the Fellows in February, 1910, that an effort should be made to raise the whole amount of the cost of the building by means of voluntary gifts from the Fellows of the society, the members of the sections, and the friends of Fellows and members. Though

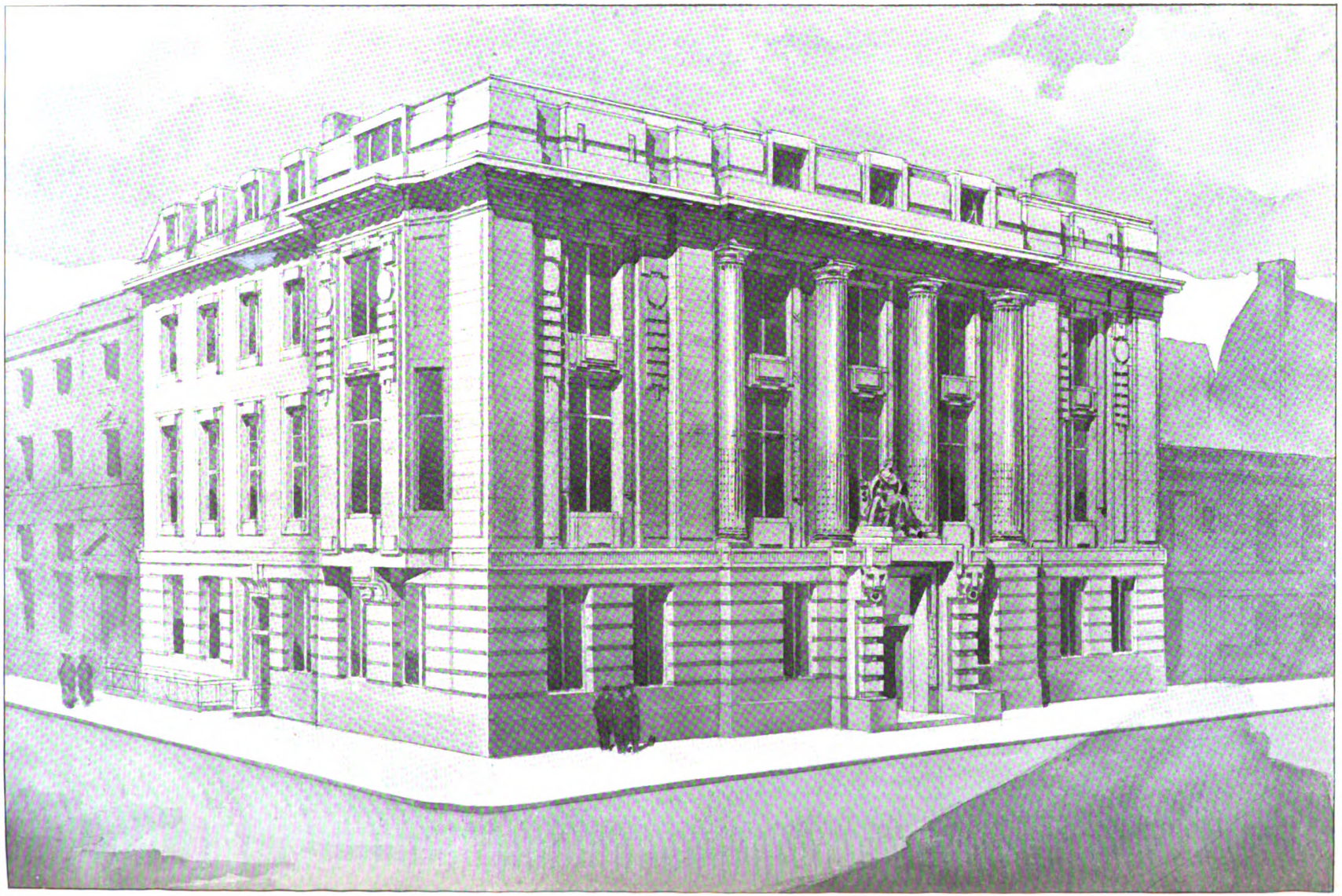
FIG. 1.

Hall and lounge.

FIG. 2.



Library.

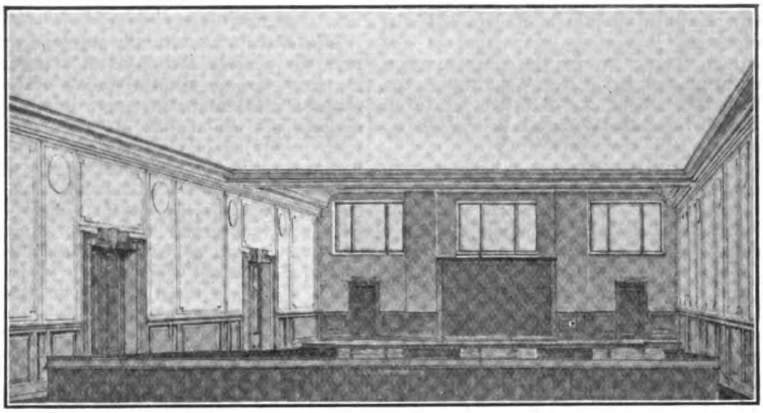


NEW BUILDING OF THE ROYAL SOCIETY OF MEDICINE
to be ready for occupation at the end of the present year.

£12,224 have been promised or given (by 614 out of 2313 Fellows, 112 out of 976 members, and by other subscribers), yet up to the present time only £7558 have actually been received by the treasurers. The Council, however, hopes that with the assistance of all, or many, of the Fellows who have not yet contributed, the whole amount — £30,000 —will be raised before the building is completed, as it is expected to be by December in this year.

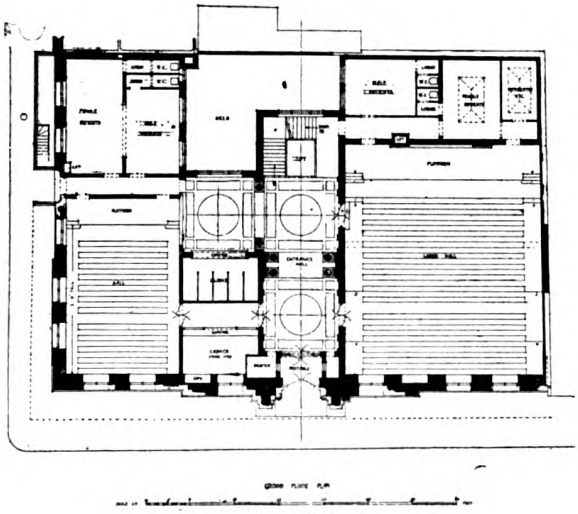
As the building is rapidly being proceeded with and the builder's certificates of charges and the architect's fees are now having to be met, as the several stages of the work are reached, it would be a great assistance if the amounts promised and the donations and subscriptions which Fellows are intending to give, were forwarded to the treasurers as soon as possible. It is desirable that Fellows in considering the amount of their contribution to the building fund should bear in mind that before the amalgamation many of them belonged to several of the societies now amalgamated, and paid annual subscriptions of £5 5*s.* or more, some even as much as £10 10*s.* The inclusive annual subscription since the amalgamation is now only £3 3*s.*, and Fellows of the Royal Society of Medicine, besides receiving the costly and admirable volumes of "Proceedings," obtain much greater advantages than were formerly enjoyed by Fellows of the Royal Medical and Chirurgical Society, whether they were also members of one or more of the other societies or not.

FIG. 3.



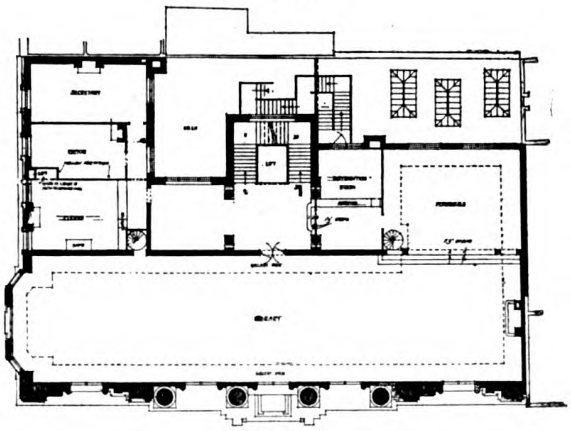
Large meeting room

FIG. 4.



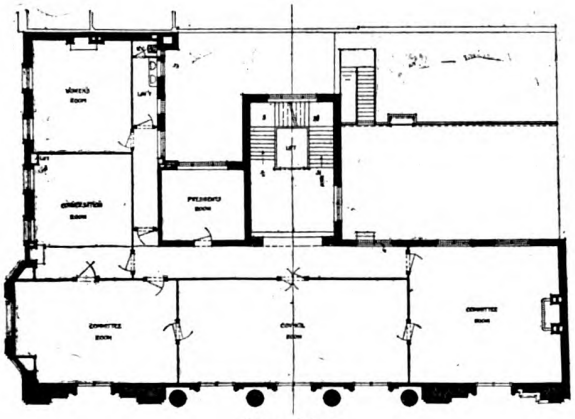
Ground floor.

FIG. 5.



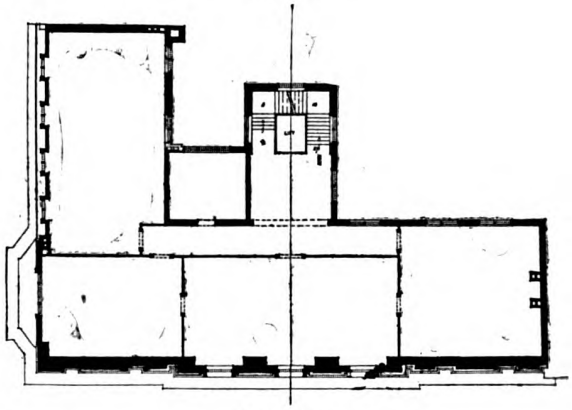
First floor.

FIG. 6.



Second floor.

FIG. 7.



Third floor.

# THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

*Medical Inspection and Treatment of London School Children: Debate on the Reorganisation Proposals.*

AS indicated in THE LANCET of March 4th, p. 627, the proposals brought before the Education Committee of the London County Council on March 1st for the reorganisation of school medical work by placing Dr. J. Kerr definitely in the department of the education officer, Mr. R. Blair, led to an interesting debate. Members evidently found themselves on the horns of a dilemma; they were conscious of the disadvantages (pointed out in THE LANCET of Feb. 25th, p. 520) of placing the medical officer for education under a lay authority, and, on the other hand, they feared it would be difficult to secure coöperation with school managers, teachers, and local care committees if medical inspection and treatment were organised from the public health department of the Council. A proposal by the chairman of the Council's General Purposes Committee to make Dr. Kerr a chief officer of the Council received an equality of voting, the chairman not exercising his casting vote. We were not able to find space last week for this interesting debate.

Mr. R. A. BRAY opened the attack on the recommendations of the Children's Care Subcommittee by moving an amendment which would make Dr. Kerr directly responsible to the general medical officer, Sir Shirley Murphy, instead of to Mr. Blair. Mr. Bray said it was generally agreed that medical inspection and treatment must go together, and difficulty had arisen because the first named was under the control of the medical officer for education purposes and the second was under the direction of the education officer. He agreed that there must be close coöperation between Dr. Kerr and Mr. Blair, but close coöperation did not mean absorption. Surely Mr. Blair had enough to do without being responsible for work of which he had no first-hand knowledge. Mr. Bray claimed that his amendment meant comparatively little change because Dr. Kerr was already a member of the staff of the medical officer of the Council. If his proposal were carried the Education Committee would remain the authority, but the advantage would be that the local care committees would be brought into much closer relationship with the medical and nursing staffs. The proposal of the subcommittee, on the other hand, was contrary to the whole system of classification adopted by the Council. It was much more satisfactory to classify the staff by professions; thus one valuer attended to valuations for all branches of the Council's service; one solicitor was responsible for all legal work, whether it arose in the department of the tramways or of education. The same principle should be followed with regard to medical work, but instead it was proposed to set up a medical staff not under the medical officer but under the education officer. The recommendation meant breaking up the fundamental principle of committee work. Committee-men were not experts, but their duty was to judge the reports of experts and decide what action should be taken. That system was based on the principle that the committee got the reports of its experts pure. They wanted to know what the medical officer recommended, and not what the education officer recommended after consultation with the medical officer. The promise that the medical officer would have free access to the committee did not amount to very much. A subordinate officer could not be constantly bringing up reports differing from those of his chief. The result would be an intolerable position for the subordinate and his superior. It was of vital importance that the committee should get the pure undiluted reports of its medical officer because many of the questions to be decided had a medical and an educational side, and the committee needed to see the position from every point of view and not see both sides as the education officer saw them. Mr. Bray also said that at a time when it was becoming generally agreed that some greater unifying of the medical services of London was needed, the establishment of a new medical service was to be deprecated, especially when it was proposed to place it under the guidance of a layman. Medical inspection and treatment were only part of the medical supervision that children required. There was the immensely important part of supervision of the homes. This work was carried on for the most part by the medical officers to the borough councils, but the London County Council medical officer had very large powers with regard to the local health authorities. Insanitary houses were dealt with under by-laws made by the County Council, and the same remark applied to infectious diseases. Under the subcommittee's scheme this work was to be carried on through two separate departments.

*Objections to Public Health Committee Control.*

Miss SUSAN LAWRENCE objected to the amendment. She said Sir Shirley Murphy was a purely advisory official and Dr. Kerr was an administrative officer, yet the amendment proposed to place a great administrative work under a department which did not concern itself to any degree with questions of organisation. The Education Committee had to do with the child, not merely with regard to its school but as to its general health conditions. (Mr. BRAY: "Hear, hear.") Therefore, the medical officer for education purposes, who was concerned with the physical condition of the children as well as with treating them, should be an officer of the Education Committee. It was the machine of the school that gave them a hold on the child, and the Public Health Department would not be able easily to keep in touch with that machine. It was an extremely difficult question, but she thought the proposals of the subcommittee would make for greater efficiency.

The Rev. Dr. SCOTT LIDGETT feared that the Public Health Committee had not the experience that would enable it to preside over the genesis of a totally new way of dealing with the children in the schools. If the work was put under the public health medical officer they would alienate all those helpful influences in developing "the new science and practice of the care of the child" which the medical officer for education purposes was beginning to build up. At the present largely experimental stage this work should be kept free from the overshadowing influence of the public health department.

Mr. GILBERT JOHNSTONE, as a member and ex-chairman of the Public Health Committee, declared that the relationship which was formally maintained until recently between the public health medical officer and the medical officer for education purposes was a farce. The Public Health Committee had only an elementary knowledge of what the medical officer for education was doing. Only once during three years was his work brought before the committee.

The Rev. STEWART HEADLAM said he wanted the medical officer for education to be predominant, and all detail work to be left to Mr. Blair. Dr. Kerr should have a free hand to organise the medical side of the work, and he was reluctant to place him under the control of "the high people at County Hall." (The Education Department has offices of its own in a separate building.)

Mr. SHEPHEARD, deputy chairman of the Council, urged the committee to look at this matter from a general administrative point of view. The Council was the authority for education, and the organisation of the education staff must follow the general lines laid down by the Council. The subcommittee's proposal was contrary to the principles formulated by the Council in other departments on several recent occasions. If the educational medical work was placed under the Public Health Department he believed the head of that department would leave Dr. Kerr a pretty free hand.

Miss ADLER said that more and more the Education Committee was coming to deal with the whole lives of young people, and medical inspection and treatment should be retained under its control.

Mr. FREEMAN BARRETT, chairman of the Public Health Committee, thought the proposal of the subcommittee was contrary to the policy of the Council and would be disapproved. The arrangements adopted for medical inspection and treatment during the past year or 18 months had been very unsatisfactory indeed. He did not in the least blame Dr. Kerr—rather he sympathised with him because he knew Dr. Kerr might have been desirous of pursuing one line and have been held in check by members of the Education Committee. It was not very satisfactory to find the Board of Education again blaming them in regard to inspection and treatment. Medical questions should be placed entirely in the hands of medical men. If Mr. Blair were pla ed in supreme control of the Education Department difficulties would occur when questions of a medical character arose on which only a medical opinion was of any value.

Mr. HOBSON thought it would be a fatal error to place the treatment of many thousands of children under a lay officer, in conjunction with whose administration all sorts of difficulties would arise in relation to medical etiquette.

On a division Mr. Bray's amendment to make Dr. Kerr responsible to Sir Shirley Murphy was lost by 19 votes to 10.

*Education Medical Officer a Chief Officer.*

Mr. ERNEST GRAY, chairman of the General Purposes Committee of the Council, which has to revise all administrative proposals by other committees, then moved the following amendment:—

That the medical inspection and treatment of school children be placed under the control of the medical officer for education purposes, and that he be directly responsible to the Education Committee and be a chief officer of the Council.

This amendment was put to the vote forthwith and there were 14 votes for and 14 against. The chairman declined to exercise his casting vote and the amendment fell to the ground.

The reference back of the whole question was then suggested, but Mr. F. R. ANDERTON, chairman of the subcommittee, said it was important that the report should go forward, because until a conclusion was arrived at the consideration of schemes for supplying the deficiencies in the medical treatment scheme pointed out by the Board of Education would have to be suspended. The committee had to meet the objections of the Board of Education within a reasonable time.

Mr. GRAY said everyone was struggling with an illogical position. Medical treatment must be swallowed up in the public health department if one scheme were carried, or a layman must be placed in authority over Dr. Kerr if the other scheme were put into operation. The committee might overcome the difficulty by taking a step which he believed it would be driven to take ultimately if they did not take it now. School medical work would grow and it would demand the services of a chief officer of the Council. In his opinion it could, and should, be dissociated from the ordinary public health work. That was why he moved his amendment: to test the feeling of the committee. It received more support than he thought possible, and that method of dealing with the difficulty should have further consideration in subcommittee.

Mr. JOHNSTONE objected that Mr. Gray's proposal was sprung on the committee without discussion.

Mr. BRAY and the Chairman of the Committee both urged the desirability of coming to an immediate decision. The Chairman remarked that the whole question of reorganisation of medical treatment was being held up, and he regarded this as a matter of extreme urgency.

Only seven members voted for the reference back and the subcommittee's recommendation to place the medical officer for education purposes under the control of the education officer was then carried by 19 votes to 11.

*Notification of Chicken-pox.*

On Tuesday, March 14th, on the recommendation of the Public Health Committee, the London County Council decided to make chicken-pox a notifiable disease under the Public Health (London) Act, 1891, for three calendar months from March 22nd, 1911. The committee stated that slight cases of small-pox were sometimes mistaken for chicken-pox and so were not isolated as early as they would have been had the real nature of the disease been recognised.

## THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE Lord Mayor presided on March 10th over a meeting of the Council of the Metropolitan Hospital Sunday Fund, which was convened for the purpose of considering a recommendation of the Finance Committee with reference to the appointment of new trustees, and also of discussing the question of the contributions of Sunday cinematograph shows to the funds of hospitals which participated in the awards of the Metropolitan Hospital Sunday Fund.

With regard to the question of trustees, Mr. John Hale explained that the Lord Mayor, the Governor of the Bank of England, and the City Chamberlain for the time being were the trustees of the Fund, but although that arrangement had worked well the continual transference of securities was a source of expense which could be obviated by the appointment of permanent trustees. It was subsequently agreed that Mr. J. Hale, Mr. J. H. Buxton, Sir John Bell, and Sir Ernest Tritton should be appointed trustees, and that powers should be sought for this alteration.

*Sunday Cinematograph Entertainments.*

Archdeacon SINCLAIR then moved the adoption of the recommendation of the General Purposes Committee, which had recently debated this subject. The recommendation read as follows:—

That the Council has fully considered the recommendations of the General Purposes Committee on the subject of Sunday cinematograph entertainments run by hospitals, as well as the proposal of certain places of worship to earmark their collections for hospitals which do not participate in the proceeds of such shows, and while not expressing any opinion upon the expediency or otherwise of Sunday entertainments as such, disapproves of hospitals receiving grants from this Fund (which consists mainly of church collections) being concerned in any movement which is contrary to the spirit of its supporters. The Council further resolves that in the event of the collections for the Fund suffering any diminution which may be fairly attributable to the continuance of these entertainments, as aforesaid, it shall be a recommendation to the Committee of Distribution to take the same into consideration when making their awards for the year. It is ordered that a copy of this resolution be forwarded to the committee of management of each of the hospitals concerned.

Archdeacon Sinclair said that three or four of the leading churches in the metropolitan area—both Church of England and Nonconformist—were so displeased at the method by which four hospitals were receiving part of their funds that they asked the Council to earmark their contributions for hospitals which did not employ that method. The London Hospital, the Evelina Hospital for Sick Children, and two others had held entertainments at electric theatres on Sunday afternoons. The London Hospital made about £1300 a year in this way. Two sets of people objected to the holding of these entertainments on Sunday—those who regarded the proceeding as a serious evasion of the law and those who regarded it as an infringement of the day of rest by which the customs of this country had hitherto been regulated. The churches which made the objections were not in the least degree jealous, because those churches were always full. The committee felt bound to safeguard the interests of the Fund and to do all in their power to protect the scruples of those congregations and preserve the integrity and harmony of the Hospital Fund, so long and so happily maintained. They did not express any condemnation of the electric theatres. That was a matter for the public and the London County Council, but as this particular method of raising money had caused a scandal amongst certain of their constituents, they wished to show that they dissociated themselves from it.

Lord CHEYLESMORE seconded the adoption of the recommendation. He thought that to recognise Sunday cinematograph entertainments would be most detrimental to the interests of the Fund, though he had nothing to say against them as entertainments. It should be remembered that the bulk of the money collected by the Fund came from the clergy and the people who attended places of worship. The Fund should hold to the clergy and their congregations.

The Hon. SYDNEY HOLLAND complained that although he had been invited by the General Purposes Committee to discuss the matter with them at a certain hour on a particular day, when he arrived, even before the time appointed, the matter had been decided and the recommendation printed. He moved as an amendment that the Council take no action in the matter. The London Hospital received between £1200 and £1400 a year from Sunday cinematograph entertainments. He thought the public would dissent from the narrow-minded policy recommended by the committee. If that recommendation was adopted it would mean that the money collected by the Hospital Sunday Fund would not go to the hospitals that were best managed, but to those institutions whose managers were most pliable to dictation. The principle of the Fund hitherto had been that it would not interfere with the way in which a hospital got its money, but would interfere with the way in which it was spent. The poor people who attended cinematograph entertainments were people who would not contribute to the Fund. If the proposed policy was pursued the next step would be for clergymen who were teetotalers to allocate their subscriptions to hospitals where no drink was given. There would be no end to the number of views that would be pressed upon the Council of the Fund. The proposal they were considering would not be popular with the people nor with all the clergy.

The Rev. H. R. GAMBLE, seconding Mr. Holland's amendment, thought that by accepting the committee's report the Council would be entering upon an extremely dangerous course the consequences of which they could not see. It was inexpedient that the sources of the money received should be investigated, and if some churches allocated their collections to one hospital and some to another it would lead to an exceedingly dangerous warfare. It was in the ultimate interests of the Fund that he asked the Council to hesitate before coming to a conclusion in the matter.

Sir A. PEARCE GOULD, who supported the resolution, said that Mr. Holland was departing from the voluntary system. He was earning money for the hospitals. If the principle that hospitals could be supported by other than voluntary contributions were once admitted the support of hospitals by the rates would follow. Why did Mr. Holland stop at Sunday shows? why did he not run public-houses? (Mr. HOLLAND: I do.) If that were done the public would say that hospitals could be supported as business institutions, and would cease to contribute to them. It was impossible to close one's eyes to the fact that the hospitals had been supported by those who were interested in religion and in the religious movements of the country.

The Rev. C. H GRUNDY, speaking in behalf of Mr. Holland's amendment, hoped that the Council would have nothing whatever to do with a question that did not concern them.

The amendment, "That this Council resolves to take no action in the matter," on being put by the CHAIRMAN, was lost by 10 votes to 19.

The Rev. C. H. GRUNDY then moved the previous question, which was also lost.

Deputy M. WALLACE moved that the matter be referred back in order that Mr. Holland might have an opportunity of discussing the matter with the committee.

Sir A. PEARCE GOULD pointed out that Mr. Holland had already fully discussed the matter, and Mr. HOLLAND then appealed to the Lord Mayor, who was present at the committee meeting, as to the truth of his (Mr. Holland's) statement with regard to the consideration of the recommendation before Mr. Holland's arrival. The LORD MAYOR admitted that Mr. Holland was technically correct, but said that the meeting in question had been reopened to allow Mr. Holland to discuss the matter.

Mr. HOLLAND opposed the sending back of the report to the committee as they had already made up their minds on the matter.

It was, however, after some discussion decided to refer the report back.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8180 births and 4911 deaths were registered during the week ending March 11th. The annual rate of mortality in these towns, which had been equal to 17·6, 17·2, 16·2, and 15·3 per 1000 in the four preceding weeks, further declined to 14·9 in the week under notice. During the first ten weeks of the current quarter the death-rate in these 77 towns averaged 16·0 per 1000, and the mean recorded rate in London during the same period was 15·9. The annual death-rates during last week ranged from 7·6 in Wallasey, 7·7 in Handsworth and King's Norton, and 8·1 in West Hartlepool, to 22·4 in Devonport, 22·6 in Sheffield, 27·5 in Dewsbury, and 28·3 in Middlesbrough. The 4911 deaths from all causes in the 77 towns showed a further decline of 129 from the numbers returned in the four preceding weeks, and included 702 which were referred to the principal epidemic diseases, against numbers increasing from 477 to 663 in the five preceding weeks; of these 702 deaths, 474 resulted from measles, 80 from whooping-cough, 56 from diphtheria, 49 from diarrhœa, 24 from scarlet fever, 13 from enteric fever, and 6 from small-pox. The fatal cases of measles, which had steadily increased from 160 to 397 in the first nine weeks of the current quarter, further rose last week to 474; they caused the highest annual death-rates of 3·4 in Rochdale, 3·9 in Wigan, 4·6 in Leyton, 9·1 in Devonport, and 10·3 in Sheffield. The deaths from whooping-cough, which had been 91 and 108 in the two preceding weeks, declined to 80 last week; the highest death-rates from this disease last week were 1·1 in Leyton and in Wigan, 1·9 in Middlesbrough, and 2·0 in Dewsbury. The 56 fatal cases of diphtheria showed a decline of 8 from the number in the previous week, and included 15 which were recorded in London and its suburban districts, 4 in Birmingham, 3 in Bolton, 3 in Barrow-in-Furness, 5 in Leeds, and 3 in Gateshead. The deaths of infants under 2 years of age attributed to diarrhœa, which had been 53 in each of the two preceding weeks, declined to 49 last week, and were fewer than in any previous week of this year. The 24 fatal cases of scarlet fever showed a further slight decline from the number in the two previous weeks; 4 occurred in London and its suburban districts, 4 in Liverpool, and 2 both in Wolverhampton and in Sheffield. The 13 deaths referred to enteric fever also showed a decline; 2 were registered both in Manchester and in Nottingham. Six deaths from small-pox were recorded in London, 3 being of young children and 3 of adults; 10 deaths from this disease have occurred in the Metropolitan Asylums Hospitals during the past two weeks. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had been 1276, 1242, and 1197 in the three preceding weeks, had further declined to 1166 on Saturday last; 120 new cases of this disease were admitted to these hospitals during last week, against 166, 138, and 129 in the three preceding weeks. These metropolitan hospitals also contained on Saturday last 944 cases of diphtheria, 748 of measles, 253 of whooping-cough, 47 of small-pox, and 23 of enteric fever. The 1391 deaths from all causes in London last week, showing a further slight decline from recent weekly numbers, included 328 which were referred to diseases of the respiratory system, against 421, 395, and 318 in the three preceding weeks. In the 77 towns 142 deaths from different forms of violence were registered during last week, showing a further decline from the numbers in recent weeks; and 342 inquest cases were recorded. The causes of 38, or 0·8 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Leicester, and in 50 other smaller towns; the 38 uncertified causes of death in the 77 towns last week included 9 in Birmingham, 4 in Liverpool, 4 in Sheffield, 3 in Portsmouth, and 2 in St. Helens.

## HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 894 births and 583 deaths were registered during the week ending March 11th. The annual rate of mortality in these towns, which had been equal to 19 8, 19·0, 17·4, and 16·9 per 1000 in the four preceding weeks, further declined to 15·9 in the week under notice. During the first ten weeks of the current quarter the death-rate in these towns averaged 16·9 per 1000, and exceeded by 0·9 the mean rate during the same period in the 77 English towns. The annual death-rates last week in the eight Scotch towns ranged from 11·0 and 11·3 in Paisley and Aberdeen to 24·9 in Perth and 25·3 in Greenock. The 583 deaths from all causes in the eight towns last week showed a further decline of 38 from the numbers returned in recent weeks, and included 60 which were referred to the principal epidemic diseases, against 76 and 57 in the two previous weeks; these 60 deaths were equal to an annual rate of 1·6 per 1000, being 0·5 below the rate from the same diseases in the 77 English towns; the highest rates from these diseases last week in the Scotch towns were 2·7 in Dundee and 3·0 in Leith. Of these 60 deaths from the principal epidemic diseases, 36 resulted from whooping-cough, 7 from diarrhœa, 5 from measles, 5 from diphtheria, 4 from scarlet fever, and 3 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 45, 39, and 32 in the three preceding weeks, rose again to 36 last week, and included 19 in Glasgow, 8 in Dundee, 4 in Leith, and 2 in in Edinburgh and in Paisley. The 7 deaths attributed to diarrhœa were fewer by 5 than the number in the previous week, and were all of infants under 2 years of age. The 5 fatal cases of diphtheria corresponded with the number in the previous week, including 2 in Edinburgh. The 5 deaths from measles, of which 3 occurred in Glasgow and 2 in Edinburgh, exceeded those

in the previous week by 3. The 4 fatal cases of scarlet fever, of which 2 occurred in Edinburgh, corresponded with the number in the previous week. The 3 deaths referred to enteric fever included 2 in Glasgow and 1 in Leith. The deaths referred to diseases of the respiratory system in the eight towns, which had been 181, 139, and 118 in the three preceding weeks, further declined last week to 108. The 20 deaths referred to different forms of violence exceeded the number in the previous week by 5; and 177 of the 583 deaths from all causes in the eight towns, or 30 per cent., occurred in public institutions. The causes of 15, or 2·6 per cent., of the deaths registered during the week were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·8 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 627 births and 431 deaths were registered during the week ending March 11th. The annual rate of mortality in these towns, which had declined in the four preceding weeks from 24·1 to 20·4 per 1000, further fell to 19·3 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these 22 towns averaged 20·7 per 1000; the rate during the same period did not exceed 16·0 in the 77 English towns, and 16·9 in the eight Scotch towns. The annual death-rate during last week was equal to 21·0 in Dublin, 15·4 in Belfast, 27·4 in Cork, 15·4 in Londonderry, 24·6 in Limerick, and 17·5 in Waterford; in the 16 smallest of the Irish towns the mean annual death-rate last week was equal to 20·8 per 1000. The 431 deaths from all causes in the 22 towns last week showed a further decline of 24 from recent weekly numbers, and included 26 which were referred to the principal epidemic diseases, against 41 and 25 in the two preceding weeks; these 26 deaths were equal to an annual rate of 1·2 per 1000, which was 0·9 below the mean rate from the same diseases in the 77 English towns. Of these 26 deaths in the Irish towns from the principal epidemic diseases, 10 resulted from whooping-cough, 8 from measles, 3 from enteric fever, 3 from diarrhœa, and 2 from diphtheria, but not one from scarlet fever or small-pox. The 10 fatal cases of whooping-cough showed a decline of 12 from the number in the previous week, including 3 in Dublin and 2 in Newtownards. The 7 fatal cases of measles, the 3 of enteric fever, and the 2 of diphtheria were all recorded in Dublin. Of the 3 deaths attributed to diarrhœa, 2 were of infants and 1 of an adult. The deaths in the 22 towns referred to diseases of the respiratory system, which had declined in the four preceding weeks from 141 to 108, further fell last week to 100. Of the 441 deaths from all causes last week, 133, or 31 per cent., were recorded in public institutions. The causes of 19, or 4·4 per cent., of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death last week did not exceed 0·8 per cent. in the 77 English towns, and 2·6 per cent. in the eight principal Scotch towns.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: T. W. Philip to the *President*, additional, for Greenwich Hospital School and Royal Naval College, temporary; J. H Stenhouse to the *Africa;* A. G. Andrews to the *Egmont*, additional, for Malta Dockyard; E. B. Townsend to the *Superb;* J. Menary to the Chatham Division, R M.L.I.; H. B. Beatty, G. A. Waters, R. Hill, M V.O., A. Gaskell, B. F. Parish, and L. Kilroy to the *President*, additional, for three months' hospital course; F. D. Lumley to the *Defence*; H. C. Arathoon to the *Formidable*, J. K. Robinson to the *Cæsar*, and J. A. Keogh to the *Cochrane*, all on recommissioning. Staff-Surgeons: W. E. Mathew, G. Ross, and A. X. Lavertine to the *President*, additional, for three months' hospital course; L. E. Darnell to the *Mercury*, additional; J. H. Lightfoot to the *Vivid*, additional, for disposal; R. S. Osborne to the *Berwick;* H. Huskinson to the *Bulwark;* A. T. Gailleton to the *Halcyon*, on recommissioning; G. E. Macleod to the *Dreadnought*, temporary, on recommissioning; and J. A. Forrest to the *Andromache*. Surgeons: A. L. Robinson to the *Africa;* P. M. Rivaz to the *President*, additional, for three months' hospital course; G. A. Bradshaw to the *Formidable*, F. M. V. Smith to the *Cochrane*, both on recommissioning; and H. Cooper to the *Pomone*, additional, lent, for Dartmouth College, temporary.

### ARMY MEDICAL SERVICE.

Colonel Arthur E. J. Croly is placed on retired pay (dated March 9th, 1911). Lieutenant-Colonel Edmund J. E. Risk, from the Royal Army Medical Corps, to be Colonel, *vice* A. E. J. Croly (dated March 9th, 1911).

Surgeon-General Sir Thomas J. Gallwey, K.C.M.G., C.B., retires on retired pay (dated March 15th, 1911).

Colonel George W. Robinson to be Surgeon-General, vice Sir T. J. Gallwey (dated March 15th, 1911).

Lieutenant-Colonel William G. Birrell, from the Royal Army Medical Corps, to be Colonel, vice G. W. Robinson (dated March 15th, 1911).

### ROYAL ARMY MEDICAL CORPS.

Lieutenant Reginald C. Galgey resigns his commission (dated March 11th, 1911).

Colonel W. G. Macpherson, C.M.G., from Malta, has taken over duty as Principal Medical Officer of the Fourth (Quetta) Division, India. Colonel E. Butt, Principal Medical Officer of the Presidency and Assam Brigades, has been transferred from Darjeeling to Calcutta. Lieutenant-Colonel S. Westcott, C.M.G., commanding the Station Hospital at Mhow, has been selected to command the Station Hospital at Chakrata. Lieutenant-Colonel N. Manders, Senior Medical Officer in Ceylon, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel R. H. Hall, from Colchester, has taken over duty as Senior Medical Officer at Bermuda. Lieutenant-Colonel S. R. Wills, commanding the Station Hospital at Agra, has been granted eight months' leave of absence from India. Lieutenant-Colonel H. H. Brown has been transferred from Murree to Rawal Pindi. Major H. I. Pocock, commanding the Military Hospital at Nowshera, has been granted six months' leave of absence in India. Major E. G. Browne has taken over charge of the Station Hospital at Delhi. Major D. D. Shanahan has been appointed Staff Officer for Medical Mobilisation Stores, Ninth (Secunderabad) Division, in succession to Major H. A. Hinge, tour-expired. Major A. Pearse, at present serving at Chatham, has been noted for appointment as Senior Medical Officer, West Africa. Major G. J. Buchanan, from Chaubutha, has taken up duty at Agra. Major E. M. Morphew, commanding the Station Hospital at Roorke, has been granted eight months' leave of absence home from India. Major H. S. Thurston, from the London District, has joined for duty at Malta. Major G. A. Moore has been transferred from Woolwich to Chatham. Major E. B. Steel, commanding the Military Hospital at Neemuch, has been granted leave of absence to Sept. 30th next. Major E. W. Slayter, from Wellington, has been appointed to command the Station Hospital at Bellary. Major A. E. Milner, from Tidworth Park, has joined for duty at Birmingham. Major G. M. Goldsmith, staff surgeon, Burma Division, has been granted eight months' leave of absence home from India with effect from March 15th. Captain J. H. R. Winder has been transferred from Shorncliffe for duty in the Aldershot Command. Captain J. A. Bennett, from Mhow, has been granted six months' leave of absence home. Captain J. Fairbairn, from Glasgow, has taken up duty at Sierra Leone. Captain J. G. Gill, commanding the Station Hospital at Cherat, has been granted six months' leave of absence home from India. Captain B. Johnson, from Wellington, has been appointed to command the Section Hospital, St. Thomas's Mount, Madras. Captain W. F. M. Loughnan has been transferred from Amritsar to Bareilly. Captain R. E. U. Newman, from Kuldanna, has joined at Rawal Pindi. Captain J. T. McEntire, from the Irish Command, has been posted to Newcastle. Lieutenant D. H. C. MacArthur, from Rawal Pindi, has taken up duty at Ambala Cantonment. Lieutenant A. T. J. McCreery has been transferred from Birmingham to Bulford. Lieutenant F. H. Somers-Gardner, from Pontypridd, has joined at Cosham.

### INDIAN MEDICAL SERVICE.

Lieutenant-Colonel S. H. Henderson, superintendent of the Central Prison at Agra, has been appointed by His Honour the Lieutenant Governor of the United Provinces to officiate as Inspector-General of Prisons in the United Provinces during the absence on leave of the Honourable Lieutenant-Colonel C. Mactaggart. Lieutenant-Colonel W. Vost, on return from leave, has been appointed Civil Surgeon at Saharanpur. Lieutenant-Colonel W. D. Sutherland, civil surgeon at Sangor, Central Provinces, has been granted three months' privilege leave. On return from combined leave Lieutenant-Colonel H. E. Banatvala has been placed on special duty at Nagpur, under the orders of the Inspector-General of Civil Hospitals in the Central Provinces. Major B. H. Deare, civil surgeon of Hazaribagh, on return from leave, has been appointed Civil Surgeon at Darjeeling. Major R. H. Price has been appointed Specialist in Midwifery and Diseases of Women and Children to the Fourth (Quetta) Division. Major J. L. Macrae has been confirmed in the appointment of Civil Surgeon of Coorg. The services of Major W. D. Hayward have been placed permanently at the disposal of the Army Department as Medical Storekeeper to the Government of India at Calcutta. Captain L. Reynolds has arrived home on leave of absence from India. Captain A. W. Overbeck-Wright, Supernumerary Superintendent of the Central Prison at Agra, has been appointed to officiate as Superintendent in succession to Lieutenant-Colonel S. H. Henderson. Captain O. St. J. Moses has taken over duty as Police Surgeon at Calcutta during the absence of Major W. D. Hayward. Captain H. Buckley has been appointed to the medical charge of Manipur State. Captain C. Dykes, civil surgeon of Saharanpur, has been placed in charge of plague operations in the Ghazipur, Azmgarh, and Ballia Districts. Captain W. H. Leonard, attached as medical officer to the 55th Sikhs, has been granted eight months' leave of absence from India. Captain H. C. Brown has been appointed Specialist in the Prevention of Disease to the Jullundur Brigade. Captain H. A. Williams, D.S.O., resident medical officer of the general hospital at Rangoon, has been granted two years' furlough and study leave. Lieutenant R. B. Lloyd, officiating medical officer of the 58th Rifles, has been transferred to the 31st Lancers and attached for duty.

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

1st South Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: Captain Samuel Maclean, from the list of officers attached to units other than medical units, to be Captain (dated Dec. 28th, 1910).

2nd South Midland Field Ambulance, Royal Army Medical Corps: Captain Seymour Gilbert Barling, from the 1st South Midland Field Ambulance, Royal Army Medical Corps, to be Major (dated March 11th, 1911). Captain George William Craig, from the 1st South Midland Field Ambulance, Royal Army Medical Corps, to be Captain (dated March 11th, 1911).

### DEATHS IN THE SERVICES.

Captain William Harold Gillatt, R.A.M.C., at Cairo on March 8th. He entered the service as lieutenant in 1906.

Brigade-Surgeon Thomas Turville Gardner, retired pay, late Army Medical Department, on Feb. 18th, at Engalee, East Grinstead. He entered the service in 1858 as assistant surgeon, was promoted to surgeon-major in 1873, and retired with the honorary rank of brigade-surgeon in 1881.

### JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the March issue of this journal Major W. H. Horrocks contributes a long paper on the Viability and Possible Variation of the Bacillus Typhosus, his experiments seemingly confirming the opinion that the viability of the B. typhosus is of short duration. The value of tuberculin in the treatment of tuberculous affections is discussed in a paper by Lieutenant-Colonel F. H. Treherne, who gives the result of 34 cases, most of which received benefit from the treatment, and in no case can the treatment be said to have been a failure. Captain W. Byam writes on Malaria in Kassala in 1909, and Major M. Sykes, of the 5th Battalion, Yorkshire Regiment, makes an interesting report on a forced march, concerning which Lieutenant-Colonel C. H. Melville contributes a short appreciatory note. The needs of ambulance units are again met by a note on Improvised Stretchers from the pen of Colonel H. E. R. James. The first part of an abridged report of a tour from Freetown to Monrovia through the Protectorate of Sierra Leone and Liberia, by Major A. Pearse, makes very interesting reading; as does also an illustrated account of the Eland of the Bahr-el-Ghazal Province, contributed by Major H. Ensor, D.S.O.

### THE OUTBREAK OF MEASLES AT DARTMOUTH.

Surgeon B. Pick, R.N., is suffering from measles, and 21 fresh cases have occurred at the Royal Naval College.

# Correspondence.

"Audi alteram partem."

## CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

*To the Editor of* THE LANCET.

SIR,—It will greatly assist to settle the claims of Sir Charles Bell as the discoverer of the functions of the roots of the spinal nerves if it be fully admitted that by July 22nd, 1822, Magendie had designed and carried out a series of experiments which demonstrated beyond any further question that the "anterior roots are destined for motion while the posterior belong more particularly to sensation." Professor Waller in assigning the full merit of the discovery to Magendie leaves out of consideration certain essential circumstances. At the end of August, 1821,[1] Mr. John Shaw, Bell's brother-in-law and assistant, went to Paris; amongst the men he met there and to whom he explained the experiments and discoveries of the Windmill-street School was Magendie.[2] How much Magendie was impressed by Bell's work can be judged from two circumstances: first, he sent a message and afterwards a letter[3] to the English surgeon asking for a short account of his work in order that a "prize medal" might be awarded him; secondly, he published[4] at once (October, 1821) an account of Bell's theory and discoveries, founded on the communication made to him by Mr. Shaw. From that account we learn that he proceeded there and then to repeat Bell's experiments on the facial nerve, and on the fifth nerve, verifying the general accuracy of Shaw's communication. Further, he was placed in possession of two important facts: that the roots of the spinal nerves were different in function, and that the fifth cranial nerve belonged to the spinal series, from which it naturally followed that the results obtained by Bell's experiments on the fifth cranial nerve might be transferred to the spinal nerves. In 1821 Magendie's experimental work was connected with the mechanism of the circulation; in 1822 it concerned the results of sections of nerves. Dr. Leonard Guthrie[5] has already given an account of Magendie's surprise when after publishing the results of his first experiments in July, 1822, he received a note from "M. Schaw" claiming priority for his master, "M. Ch. Bell." From the facts narrated here there is no question as to who was the pioneer in opening up a scientific knowledge of the nervous system—it was Bell and not Magendie. An English student, however, on reading Professor Waller's "Introduction to Human Physiology," must conclude that Bell had no part in the discovery of the function of nerve roots.

The real point of difference, as far as concerns Professor Waller and myself, is in the interpretation of what Sir Charles Bell meant by "cerebral" and "cerebellar." By "cerebral" Professor Waller understands him to mean motor and sensory nerve fibres, and by "cerebellar" fibres "which serve to govern vital actions." On the other hand, I translate "cerebral" to mean motor and "cerebellar" to mean

[1] Letters of Sir Charles Bell, London, 1870, p. 271.
[2] Narrative of the Discoveries of Sir Charles Bell, by Alex. Shaw, London, 1839.
[3] Letters of Sir Charles Bell, p. 275.
[4] Journal de Physiologie Expérimentale, 1821, tome i., p. 384.
[5] THE LANCET, March 11th, p. 697.

sensory, for the following reasons. Sir Charles Bell's inquiry was primarily devised to find out the function of the cerebrum and cerebellum. He traced the connexion of cerebrum to the anterior columns of the spinal cord through the pyramidal tracts and the relationship of the cerebellum to the posterior columns by means of its inferior peduncles. From the very commencement of his investigations in 1807 he recognised the difference between what we now call motor and sensory nerves, and knowing that the cerebrum received and gave out both kinds of fibres expected, when he came to experiment on the anterior roots and anterior columns, to find evidence of both kinds of fibres. What he actually found is most clearly and briefly related in his letter to his brother George (March 12th, 1810):—

> It occurred to me that as there were four grand divisions of the brain, so were there four grand divisions of the spinal marrow; first, a lateral (bilateral) division; then a division into the back and fore-part (dorsal and ventral divisions). Next it occurred to me that all the spinal nerves had within the sheath of the spinal marrow two roots—one from the back part, another from before. Whenever this occurred to me I thought that I had obtained a method of inquiry into the function of the parts of the brain.
>
> *Experiment 1.*—I opened the spine and pricked and injured the posterior filaments of the nerves—no motion of the muscles followed. I then touched the *anterior* division—immediately the parts were convulsed.
>
> *Experiment 2.*—I now destroyed the posterior part of the spinal marrow by the point of a needle—no convulsive movements followed. I injured the anterior part and the animal was convulsed. It is almost superfluous to say that the part of the spinal marrow having sensibility comes from the cerebrum; the posterior and insensible part of the marrow belongs to the cerebellum.
>
> Taking these facts as they stand, is it not most curious that there should be thus established a distinction in the parts of a nerve and that a nerve should be insensible?

No statement could be clearer as to the function of the roots. At this early date Bell recognised that the spinal roots were different in function and that the anterior root was "sensible" (motor in modern terminology) in function and the posterior "insensible," or sensory, for at this date Bell had concluded that there were two kinds of nerve, those carrying impulses to the brain and those carrying impulses from it (afferent and efferent, in the modern sense). The results of these experiments were accurately noted. The anterior or "cerebral" part of the spinal cord and its corresponding root did not yield quite the results he expected; he expected both motor and sensory disturbance, and only obtained motor. The results, however, gave him a clue to one function of the cerebellum, and shows how clearly he recognised the afferent or sensory nature of the posterior root. He had inferred that muscles were supplied with afferent as well as efferent nerves, and were coördinated while in action by impulses streaming in by the afferent nerves. He assigns to the cerebellum the function of "controlling the actions of the bodily frame." That followed as an inference from his discovery that the posterior roots and posterior columns of the cord were "insensible," "silent," or "secret." It will be thus seen how unjust Professor Waller is to his countryman when he infers that Bell found that "the anterior or 'cerebral' roots are motor and sensory, and that the posterior or cerebellar roots serve to govern vital actions." Bell expected them to be so in function, but when he applied the test of experiment he found the one sensible (motor) and the other insensible (sensory).

I have no wish, indeed it would be impossible for me, to obtain a dialectical victory over a brilliant exponent of the methods of Magendie, nor do I desire in any way to touch on the great and well-founded reputation of Sir Charles Bell. But I do wish again to emphasise the importance of his method. From a consideration of the anatomy of the brain and nerves he sought to formulate a theory which would account for the arrangement of parts. He proceeded to test his theory by observation and experiment year after year from 1807 to 1821, his only means of publication being his daily lectures. The discovery of the function of the spinal roots was merely an incident in the prosecution of a great endeavour. Since Bell's time anatomy and physiology have been divorced to their mutual loss, for I am certain no great discovery can be made in the mechanism of the animal body unless the problems suggested by a consideration of structure are resolved by the methods of experimental physiology.

I am, Sir, yours faithfully,

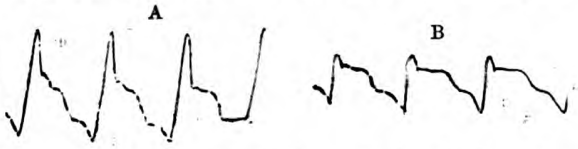
ARTHUR KEITH.

Royal College of Surgeons of England, London, W.C., March 9th, 1911.

## THE SPHYGMOMANOMETER AND THE SPHYGMOGRAPH IN RELATION TO THE MEASUREMENT OF ARTERIAL BLOOD PRESSURES.

*To the Editor of* THE LANCET.

SIR,—Dr. C. O. Hawthorne, in his interesting article in THE LANCET of Feb. 18th on this subject, pointed out how the readings of the two instruments may give diametrically opposite results interpreted in the terms of "high blood pressure" and "low blood pressure"; that the sphygmomanometer may give a low record—e.g., 75 mm. of Hg of blood pressure—whilst at the same time the sphygmograph may indicate what has hitherto been interpreted as a "high-tension" record, and, conversely, that a high reading of the sphygmomanometer may coincide with a "low-tension" picture on the sphygmograph taken at the same time, and he points out the difficulty of reconciling the readings of the two instruments. He attempts to do this by drawing attention to the varying *duration* of the "pulse pressure" in different cases, and he thinks the type of sphygmographic tracing which has hitherto been called a "high-tension" one should really be named the "well-sustained blood pressure" record, and the "low-tension" sphygmogram should be called the "ill-sustained blood pressure" record, and he says "then all apparent contradictions of the sphygmomanometer and the sphygmograph disappear"; but I venture to think this is not the whole story or even the true explanation. These two sphygmograms were taken from the same patient at the same time on the same piece of paper as it was running through the instrument, yet how different they are. A answers to the




description of a "low-tension" or an "ill-sustained" pulse, B corresponds to that of a "high-tension" or "well-sustained" pulse. How is this to be explained? The blood pressure did not vary and it is inconceivable that the *duration* of the rise of pressure varied so quickly; moreover, these "well-sustained" and "ill-sustained" rises of pressure in the sphygmograms can be produced at will in the same pulse within a few seconds of each other, and this simply by *varying the pressure of the sphygmograph lever* on the artery—the apparent "ill-sustained" pulse is produced by light pressure of the lever and the "well-sustained" pulse by heavier pressure. In fact, the sphygmograph as at present made is useless as an exact scientific instrument for indicating either the "tension" of a pulse or the "well" or "ill-sustained" blood pressure, it simply records the whim of the operator.

I am, Sir, yours faithfully,

Leicester. REGINALD PRATT.

## MUSCULAR SPASM IN CARIES OF THE SPINE.

*To the Editor of* THE LANCET.

SIR,—I have no wish to minimise the value of the excellent practical work done by Mr. H. J. Gauvain at Alton. Already his published results of treatment form a valuable contribution to surgery. But when he forsakes the concrete for the abstract, and, to support his theory of muscular spasm, assumes the action of a whole system of muscles *which does not exist*, it is, I think, right to protest.

If you will turn to his article in your issue of March 4th, and look at page 569, left-hand column, line 21, and onwards from there to the middle of the next column, you will find the following statements: (*a*) "The degree of deformity depends on numerous factors, of which may be enumerated ..... amount of muscular spasm." (*b*) "The causes of the primary deformity are ..... (3) muscular spasm secondary to the inflammatory process." (*c*) "The next point to be most strongly emphasised ..... is the effect of the muscular spasm." (*d*) "The eroded vertebral body under the constant

strain of its investing irritated muscles is gradually compressed and at length gives way. Deformity once commenced proceeds more rapidly as the mechanical advantage under which *the anterior spinal muscles* act becomes more pronounced, while the opposition offered by the posterior muscles simultaneously decreases." (*e*) "'As soon, however, as the body bends forward, as it must at the seat of the disease, the posterior muscles, because obliged to pull round the angle of the knuckle, work at a distinct disadvantage. ..... *The anterior muscles* improperly antagonised draw the body forward.' (Quoted from Goldthwait, Painter, and Osgood.) The muscles once contracted, if left to themselves, do not relax, but remain permanently shortened. Even if the disease does become arrested they still anchor down the bent and by this time the commonly ankylosed spine. ..... In dorsal caries the baneful effects of this are particularly apparent."

Now, Sir, where are these *anterior spinal muscles?* You will admit that they exist only in the imagination of Mr. Gauvain. If Mr. Gauvain were to examine a cadaver he would find that the longus colli ceases at the third dorsal vertebra, and that the psoas magnus commences at the twelfth. Between these vertebræ there are no anterior muscles at all, yet he speaks of their "baneful effects" as particularly apparent here. Moreover, in the very regions, the cervical and lumbar, where there are muscles which could conceivably act as he describes, the angular deformity is least marked. (I need not enter into the reasons for that here.)

If Mr. Gauvain's theory—or is it Dr. Goldthwait's?—of muscular spasm as a cause of deformity in spinal caries be correct, it must surely hold good for the dorsal region, which the disease most frequently attacks, and where that deformity is most marked. But it does not hold good, for there *are* no muscles. Is it possible that Mr. Gauvain has been unconsciously led away by the plausible and voluminous output of Dr. Goldthwait, M.D.?

I am, Sir, yours faithfully,

London, March 7th, 1911. PAUL B. ROTH, F.R.C.S.

## THE TREATMENT OF MALIGNANT STRICTURE OF THE ŒSOPHAGUS, WITH ESPECIAL REFERENCE TO INTUBATION AND TO RADIUM.

*To the Editor of* THE LANCET.

SIR,—I notice in your issue of March 4th a letter from Dr. William Hill in which he is kind enough to mention my name in connexion with anæsthesia during endoscopic procedures.

Having had the privilege of being associated with Dr. Hill as anæsthetist in a great number of his cases it was with great regret that I found myself unable to be present at his demonstration before the Medical Society, and I should like to take this opportunity of corroborating and slightly amplifying his remarks as to the methods I have so far found useful in meeting the requirements of the operator during the passage not only of the gastroscope but the œsophagoscope and laryngoscope as well. Whatever method of induction may be used it is obvious that anæsthesia can only conveniently be maintained by means of the Junker bottle and tube and, as Dr. Hill says, either chloroform, C.E., or pure ether may be administered by this method according to the circumstances of the case. I early learnt from Dr. Hill that there were three important desiderata in these cases—absence of mucus, a perfectly quiet anæsthesia free from cough and retching (and this in spite of alterations in the position of the head and occasional intermissions in the administration), and, lastly, in laryngoscopic examinations a tender consideration for the examiner's eye on which chloroform vapour acts as an irritant. The secretion of mucus may best be avoided by a preliminary injection of atropine and by abstaining from the use of ethyl chloride or closed methods of ether administration during the induction; C.E. slowly administered on a mask is my usual procedure. To obtain the necessary type of anæsthesia I find a preliminary injection of scopolamine and morphine of the greatest possible service; this also generally allows of fairly long intervals in the administration of the anæsthetic, during which the examiner can explore the larynx or trachea in comfort, free from the irritation of expired chloroform vapour. For intra-laryngeal cases I use the Bellamy Gardner tube, though I think there is room for some improvement here, and should like to see a laryngoscope made with an arrangement for the delivery of the anæsthetic vapour near its lower end. When the œsophagoscope or gastroscope is being used the respiration is not infrequently embarrassed, the patients are often old and feeble, and I find a slow stream of oxygen passed through the Junker bottle of great service.

I am, Sir, yours faithfully,

Talbot-road, W., March 9th, 1911. G. A. H. BARTON.

## AUTUNITE (HYDRATED URANIUM-CALCIUM PHOSPHATE).

*To the Editor of* THE LANCET.

SIR,—Your readers may be interested by a brief account of the radio-active mineral referred to by Dr. Churchward in his article in your issue of March 11th.

Hydrated uranium-calcium phosphate, or "autunite," is a natural uranyl phosphate known for some time as existing in France (notably at Autun—whence the name) and in Cornwall, and recently proved to occur in great quantities in certain districts in Portugal. It is now worked for radium. The precise origin of the ore is debated, but it occurs largely as a crystalline deposit in tracts of decomposed granitic rock. The average mineral, as worked, contains between 1 and 2 per cent. of the uranium; but here and there are found "couches" containing clusters of uranite crystals, often of some size and of great purity. This, I take it, is the mineral used by Dr. Churchward. The pure hydrated crystal contains approximately the equivalent of 50 per cent. uranoso-uranic oxide; its theoretical "activity" is therefore patent to any student of radio-activity.

A most interesting point arises here. Certain French chemists, now engaged on the separation of radium from this ore, maintain that the available radium therein is in excess of the theoretical "radium-uranium constant" hitherto recognised. I think I am correct in stating that this has not yet been formally substantiated; but it would be interesting in this connexion to see Dr. Churchward's experiments repeated with an equal amount of, say, pitch-blende containing the same percentage of uranium as the phosphate. On the "constant" theory the activity should be approximately equivalent.

If Dr. Churchward would state the amounts required I would gladly lend any medical man interested the requisite autunite from my collection should he care to go into the matter practically. I might add that the medical use of crude radio-active mineral is not entirely new. It has been employed in France, and also, I believe, by Professor His, of the Charity Clinic in Berlin, though on different lines from those indicated by Dr. Churchward. As a layman I naturally write of these matters with diffidence, but the subject is one in which I am much interested, as I have been connected with the scientific side of this industry since it first attracted attention in this country some few years back.

I am, Sir, yours faithfully,

B. HUGH ROLFE, M.A. Oxon., C.E.

Parliament-street, S.W., March 11th, 1911.

## THE DISEASES OF MALNUTRITION.

*To the Editor of* THE LANCET.

SIR,—The agitation in favour of what is described as "standard bread" is one of those public movements which, rightly supported, are likely, both directly and indirectly, to be productive of good. Anything which has a tendency to improve the quality of the food upon which the poorer classes mainly rely for their sustenance must react beneficially upon the well-being of the community generally. The extent to which malnutrition is concerned as a primary cause of disease has probably never been fully considered nor accorded the measure of attention which its importance demands. The danger which environs everyone who has drifted into an advanced condition of "diminished resistance" cannot be disputed. The tissues are prone in such cases to become the prey of every pathogenic organism to the infection of which they may be exposed. One of the causes

of this diminished resistance is improper and insufficient food, precisely those exigencies to which, for the most part, the poor are subject. Take, for example, the case of corneal ulcers, so frequently met with among ophthalmic out-patients. In the great majority of instances this disease—practically never seen among the better classes—is unquestionably the result of nutritional defect. The cornea receives probably a small accidental abrasion of its epithelium, the repair of which in a healthy person would be generally effected in a few hours. But in those in whom diminished resistance is present no repair occurs and a corneal ulcer results, as seen so frequently among the children of the poor applying for relief at a hospital. When centrally situated these ulcers after repair are the cause of much diminution of vision, and an eye so affected is permanently damaged for visual purposes. It follows, therefore, obviously, from this, that if the staple food of the poor—namely, bread—can be rendered more nutritious by the introduction of a standard quality, the diseases of malnutrition, of which corneal ulcer is one, would become presumably less frequent in their incidence. Underlying this question there is, however, a national aspect from which it may be viewed. Corneal opacities, incurred in childhood, owing to the diminution of vision to which they give rise, become the cause of rejection of many an otherwise eligible candidate for the combatant services. Anything, therefore, which tends to improve the nutritive qualities of the food upon which the poorer classes mainly subsist must indirectly prove advantageous to the State as a whole.

I am, Sir, yours faithfully,

Wimpole-street, W., March 11th, 1911. PERCY DUNN.

## THE ETIOLOGY OF "LATE RICKETS."

*To the Editor of* THE LANCET.

SIR,—In an article which appeared in THE LANCET of Oct. 23rd, 1909, I described a case of the type to which the term "late rickets" is usually applied. The child, a girl, was perfectly healthy up to the age of 13, about which time there appeared deformities of the lower limbs and curvature of the spine. She was treated without avail for nine months, at the end of which time the family left the district. I have recently traced the case, and regret to say that the condition shows no improvement, though the child's general development corresponds with her present age (15). She has had no medical treatment since I saw her in 1909.

A case of this kind has recently been shown before the Royal Society of Medicine, when the suggestion was made that the changes in many instances of so-called late rickets are in reality allied to those found in mollities ossium. In this connexion I may perhaps be permitted to recall that I made a similar suggestion in the article above referred to, and that you were kind enough to endorse this opinion in an editorial note.

I am, Sir, yours faithfully,

Bishop Auckland, March 6th, 1911. F. HERNAMAN-JOHNSON.

## THE INTERCOMMUNICATION OF NERVES.

*To the Editor of* THE LANCET.

SIR,—In St. Thomas's Hospital Reports of the year 1874 a paper entitled "Intercommunication of Nerves" is published under my name, laying before the reader evidence in proof of three propositions—namely: 1. That structures bearing a functional relationship to one another are generally supplied by the same nerve. 2. That in regard to parts thus related, though not supplied by the same nerve, communications are often established between their respective cerebro-spinal nerves through ganglia. 3. That certain branches of the sympathetic have in their distribution a definite relation with cerebro-spinal nerves arising from the same region.

In this paper appears the hypothesis of the protective reflex and the basis of the doctrine of referred pain. Having read somewhere lately that the new views on pain, now almost universally entertained, took their origin from ideas expressed by Ross first published in the year 1888 in an article in *Brain* I hope you will give me space to draw attention to a prior claim of originality for these views.

I am, Sir, yours faithfully,

Streatham-hill, S.W., February, 1911. H. WALTER VERDON.

## EYE-STRAIN IN RELATION TO GENERAL HEALTH.

*To the Editor of* THE LANCET.

SIR,—Mr. A. A. Bradburne, in his letter to this week's LANCET, avers that: "Brain-fag arises from congestion of the high visual centres owing to the difficulty of interpreting 'slightly fogged' pictures and unequal visual representations, and leads to anæmia of other centres and the various organs which demand a good blood-supply." Admitting the ingenuity of the argument, it is very doubtful, however, if the cerebral circulation is under the influence of the vaso-motor system. Leonard Hill persistently failed to get any vaso-motor effects by stimulating the sympathetic nerves supplying the brain, and Bayliss holds that the cerebral vessels are devoid of vaso-motor control. But, assuming the local-anæmia-cum-congestion hypothesis of Mr. Bradburne to be correct, how can it explain "eye-strain" in view of the fact that the brain itself is insensitive!

I am, Sir, yours faithfully,

London, March 11th, 1911. KENNETH CAMPBELL.

## A CORRECTION.

*To the Editor of* THE LANCET.

SIR,—In your report in THE LANCET of March 11th of the pathological specimens shown at the Medical Society of London on Feb. 27th, the account of my case of Cyst of the Upper Extremity of the Femur has been so curtailed as to omit the most important fact—viz., that the cystic portion of the femur was resected. It was only after this had been done that the head of the femur appeared to be too small to serve any useful purpose and was resected, allowing the upper end of the shaft to be secured in the acetabulum. From your account it would appear as if the only treatment had been resection of the head of the femur. The portion of bone involved in the cyst was shown at the meeting.

I am, Sir, yours faithfully,

P. MAYNARD HEATH.

Weymouth-street, W., March 13th, 1911.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*New Maternity Hospital for Liverpool.*

THE committee of the Maternity Hospital and Ladies' Charity has secured an admirable site for the proposed new hospital by the purchase of the old almshouses in Cambridge-street. By means of the sale of the present maternity hospital in Brownlow-hill, the committee will be enabled to pay for the site of the almshouses and other incidental expenses. The surplus, if any, will be devoted to an endowment fund of £20,000, which Sir William Hartley made a condition antecedent to the erection, at his personal cost of not less than £15,000, of a new hospital capable of meeting the demands of the charity. Towards the £20,000 endowment, over £10,000 have already been raised, and as soon as £5000 more are forthcoming building operations will be commenced. The site has had the approval of Sir William Hartley, and if it had not been promptly secured the lands would have passed into other hands as a site for carriage works. Situated midway between the University of Liverpool and the Infirmary for Children, the old almshouses for widows will appropriately give place to a hospital for women and a training school for nurses and midwives. The almshouses were erected in 1789, while the Ladies' Charity was founded in 1796, its first maternity hospital being erected in 1841. In 1869 the charity was amalgamated with a kindred institution, so that it has been continued for upwards of 40 years on the present basis, and for 115 years since the foundation. The need for a new maternity hospital is pressing. Within the boundaries of Liverpool 23,600 children were born in 1910. The maternity hospital, with its 23 beds, was the only provision outside the workhouses for all the cases from the poorer classes presenting difficulties. Over 100 cases, after having been deemed suitable for admission, were refused for lack of room—a fact amply demonstrating the need for larger accommodation.

*Mr. F. W. Lowndes and the Liverpool Police.*

Mr. F. W. Lowndes has resigned his post as medical officer of the Liverpool police force after a distinguished career of 34 years, and will terminate his duties in connexion therewith on June 30th. Mr. Lowndes has always been recognised as a man brimming with public spirit. By his persistent advocacy of a united effort to further and to assist the monetary condition of the local charities, now 40 years ago, Liverpool is mainly indebted to him for its early foundation of the Hospital Sunday collections. He was also the first to suggest the establishment in Liverpool of an annual medical service on St. Luke's day, an institution which has now become very popular, and which has been ministered to by some of the best-known preachers of the day. During a long and useful career at the Liverpool Lock Hospital, with its 50 beds (now a special department of the Royal Infirmary), he was always in the van of any movement for the betterment of the female patients, and he greatly interested himself in promoting their welfare on their discharge. He contended almost single-handed in this worthy cause. The closing of the hospital, in so far as the in-patients were concerned, was a great grief to him, as none knew better than he the value, physically and morally, of such an institution. He was greatly interested in toxicology, and figured in many sensational criminal cases, notably at the trial of Flanagan and Higgins, the sordid child poisoners, who were convicted and hanged in 1884; and was also a telling medical witness at the trial of John Conway, who was hanged for the brutal and mysterious murder of a young lad. Mr. Lowndes was instrumental in securing an up-to-date mortuary at the Prince's Dock, and also interested himself in gaining better accommodation for medical witnesses at the assizes. He was, if not the first, one of the earliest pioneers in advocating the abolition of the dirty practice of "kissing the book" in courts of law.

*The Liverpool Medical Institution.*

The council of the aforesaid society, with the sanction of the trustees, unanimously decided to propose a change of name from "The Liverpool Medical Institution" to that of "The Medical Society of Liverpool," to the members at the annual meeting held on Jan. 12th. The proposition of the council was then carried by more than the requisite majority. An agitation shortly afterwards sprang up in favour of reverting to the old name, and, after a discussion at a special meeting called for the purpose, a reversal of the decision arrived at in January took place.

March 14th.

## NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

*Royal Victoria Infirmary, Newcastle-on-Tyne: Annual Court of Governors.*

ON Saturday, Feb. 25th, the annual court of governors was held in the out-patient hall of the infirmary, the Lord Mayor (Sir William Stephenson) presiding. There was a very large attendance of governors, including Sir George Hare Philipson, Sir Thomas Oliver, and Sir Riley Lord. The Lord Mayor moved the adoption of the reports, commenting on the fact that the income had not come up to the expenditure, though the deficiency was less than that of last year. The workmen's subscriptions showed an advance during the year of £784—excellent considering the labour difficulties, stoppages, and inconveniences, and this was very hopeful. His lordship then referred in a brief way to the chapel dispute, which he hoped might now be in a fair way of being settled. Sir George Philipson seconded the motion, which was adopted. Mr. William Sutton then presented the financial statement for adoption. The total income had been £33,559, as compared with £31,242 of last year. The total expenditure had amounted to £36,593, as compared with £35,540 of last year. The deficit on the year's working amounted to £3034, that in 1909 to £4297, showing a reduction of £1263. He hoped they had begun a successful movement in this matter and that their income and expenditure might be more equal. He referred in terms of satisfaction to the gift of £1000 from the Newcastle Coöperative Society to endow two cots in celebration of its jubilee. Referring to the workmen's subscriptions, he said they amounted in 1901 to £5000, while last year they were £17,000. The number of out-patients in 1906 was 50,000, and now in 1910 it had reached 90,000. Mr. Blake, in seconding the adoption of the financial statement, wished to urge upon the governors that the committee was not in any way extravagant, and he said that taking the whole of the people with whom they had to deal the expenditure per patient per day is less than 2*s.* 10*d.* The expenditure on sisters and nurses was higher than in other places because there were fewer patients per nurse. Moreover, in the feeding arrangements only the very best possible food was supplied. The report was adopted. Sir Riley Lord then presented the report of the subscriptions committee and gave some interesting figures showing how meagrely certain districts, from which large numbers of patients were sent, supported the infirmary. He controverted the impression that the institution should be solely supported by the working-classes, saying that the wealthy classes benefited quite as much from the infirmary as the working classes, for the former had the benefit of surgeons who had gained wide experience, knowledge, and skill from infirmary practice. With regard to subscriptions, he regretted to say that there were many serious deficiencies from some places as between the amount subscribed and the number of patients sent in. In some of the large works the deficiency was as much as £300. Twenty-four collieries round the city of Durham sent patients costing the institution £422 more than was subscribed. Twelve of those collieries did not subscribe a penny and the rest subscribed something. Other instances were given as to this failure to subscribe. The report was seconded and adopted. The house committee and selection committee for the ensuing year were then elected.

As to the above account of the proceedings at the Royal Infirmary governors' annual meeting, the dominant feature of the report seems to be the increased support given by the workmen to the institution, the amount being collected in an organised way over the whole of Tyneside and the various colliery parts of Durham and Northumberland. It will be seen that thus subscribed in a coöperative fashion the income from this source is more than half the total income of the institution. So far so good, there could be no complaint of such organised measures. The consideration of the remarks falling from the mover of the adoption of the report of the subscriptions committee compels one to wonder what the end is to be. He manifested complaint that there was some lack of response on the part of collieries and their workmen, having regard to the fact that some of the latter had been treated in the institution, and instances of this were given. To ask for the subscriptions of a colliery because some of its workmen have been treated in a charitable institution, and to urge a continuance of subscriptions collected by means of small weekly donations of 1*d.* or 2*d.*, carries with it the almost inevitable corollary that a subscription given means the right to free treatment. There is a positive danger that the whole object of the infirmary as a charitable institution may be lost sight of, and, indeed, examples of this are not infrequently met with in this district; for instance, remarks are constantly made to practitioners who have lost patients: "I took the child to the infirmary; my husband pays to it!" While there are undoubted advantages to be gained mutually both for the house committee and for the workmen from the large subscriptions collected for the infirmary, there is a source of danger underlying the system, which may perhaps only be realised when it is too late, and thus the whole character of the institution may be altered.

*Barrasford Sanatorium.*

On March 7th the annual meeting of the Newcastle-on-Tyne and Northumberland Sanatorium was held in the Royal Infirmary, under the presidency of Lord Armstrong. The committee were able to produce a favourable report from several points of view. The number of patients treated during the previous year was 163, while some 62 were rejected as unsuitable for such treatment. Financially the sanatorium appears to be satisfactory, since the committee can report a reduction of a £3000 deficit in 1907 to now about £230. The income for last year was £4367 15*s.* 9*d.*, and the expenditure £4134 8*s.* 5*d.*, leaving a balance of some £233 to be carried to the capital account. "The committee feel that the institution has by now proved its necessity in

the county, and would therefore justify the support of Northumbrians in aiding them to do a work which can be regarded as of the first importance in raising the standard of health, and endeavouring to stamp out a disease which cuts down so many young and promising lives."

March 13th.

## BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

### *Bristol General Hospital.*

THE Lord Mayor of Bristol presided at the half-yearly meeting of this institution on March 13th, and was supported by the Bishop of Bristol and the High Sheriff. The annual report showed a more satisfactory state of affairs than in 1910. The in-patients showed a decrease of 49 (2651 as against 2700), due to the fact that the accommodation for in-patients is at present taxed to the utmost; the out-patients were 40,043, the largest number yet recorded. The average stay in hospital was 24·8 days, and the proportion of beds in average daily occupation was 90 per cent. The dental department, working in temporary premises, had dealt with 4891 patients, but at such inconvenience that some better accommodation is urgently necessary. The ordinary income, £12,071, is the largest since 1904; the ordinary expenditure amounted to £14,757, an excess of £2686 over income. The balance due to the treasurer has, however, been reduced to £2216; and workpeople's contributions amount to £2335. An important expansion of the hospital premises is to be made to accommodate a lying-in ward and ampler provision for other female patients, together with certain other necessary departments. The estimated cost is £45,000, and the Lord Mayor has promised to preside over a meeting at the Guildhall for the purpose of raising the money. Some generous contributions have already been received, including one of £5000 from Mr. Henry Overton Wills, Chancellor of the University. A pleasant feature of the meeting was the kindliness of the allusions to the work of the staff and students. The general hospital committee is clearly fully alive to the wider responsibilities of a hospital in regard to teaching and research.

### *Antivivisectionists in Bristol.*

The National Antivivisection Society, which has recently opened a shop in Clifton for the dissemination of its literature, held a meeting last week at the Victoria Rooms, at which Mr. Stephen Coleridge was advertised to speak on the Research Defence Society. Mr. Stephen Paget asked to be allowed to speak from the platform on equal terms. In consequence of this request, with which the Antivivisection Society complied, the large hall was well filled. After introductory remarks by the chairman, Canon Talbot, Mr. Coleridge spoke for 10 or 15 minutes, chiefly criticising cancer research. Mr. Paget's 20 minutes were occupied with an account of the Research Defence Society, its purposes, and the number of its membership, while he added an effective summary of the extent to which vivisection is in daily use on behalf of the national health and with the sanction of the nation through its representatives in Parliament and other governing bodies. He defended the use of animal experiments in cancer research, agreed with Mr. Coleridge as to the need of more inspection, and concluded by entreating the "man in the street" to ask his own doctor what he thought of vivisection. Various questions were put, to which both Mr. Coleridge and Mr. Paget replied, and each spoke for ten minutes in conclusion, Mr. Coleridge having the last word. No vote was taken; but so far as the cause of scientific research is concerned, it is to be hoped that Mr. Paget will find Mr. Coleridge's platform open to him in other places.

### *Royal Hospital for Children and Women, Bristol.*

At the annual meeting of the supporters of the Children's Hospital, Bristol, the secretary's report included various items of interest. First, he said that Their Majesties the King and Queen had extended their patronage to the hospital, in succession to King Edward VII., who had been its patron. The year's work consisted of the treatment of 767 new in-patients and 5408 new out-patients. The financial position is fairly good; the income was £4808 14*s.* 10*d.* and the expenditure £5128 3*s.* 4*d.*, leaving a balance due to the treasurers of £319 8*s.* 6*d.*, as against £155 13*s.* 2*d.* last year. Subscriptions and donations amounted to £1540 17*s.* 3*d.* The fund to provide a new out-patient department had increased during the year by over £200. The legacy account showed a balance at the bank of £381 2*s.* 10*d.* The Sheriff of Bristol, Mr. George Riseley, who took the chair, urged the necessity of coördinating the hospital work of Bristol owing to the wastefulness of the present competition and want of system which are apparent to unprejudiced laymen as well as to members of the medical profession. Mr. Riseley said it was a pity the existing hospitals had gone so far in their separate careers that it was too late to think of concentrating all their work in a single building. These remarks were warmly supported by Dr. Bertram Rogers, senior physician to the Children's Hospital, who said that its position at the top of a steep hill made it almost inaccessible for cases of acute illness. A letter of congratulation from Queen Alexandra to Miss Parry of Alveston, who has done a great deal for the hospital in securing financial support, was also read.

### *Poor Milk.*

At Bristol police-court recently the National Dairy Company was summoned in respect of two samples of milk, one being deficient in milk fat to the extent of 17·33 per cent., and the other containing 43·53 per cent. of added water. The magistrates inflicted a fine of £20 in each case and 5 guineas costs.

### *The Plymouth King Edward VII. Memorial Fund.*

At a meeting recently held in Plymouth in connexion with the memorial to the late King it was decided to erect, at a cost not exceeding £500, a suitable wing at the Didworthy Sanatorium, to accommodate six beds, to be used for patients from Plymouth, and to be named the "King Edward VII. Pavilion." It was further determined that the remainder of the money subscribed should be vested in trustees for the support of a "consumption dispensary" in Plymouth.

### *A Plymouth Research Defence Society.*

It was decided at a meeting last week to form a Plymouth, West Devon, and Cornwall branch of the Research Defence Society. Mr. W. Paul Swain was elected president and the Rev. Dr. Trelawny-Ross, Admiral Marrach, and Colonel M. Giles vice-presidents, and Mr. R. Jaques honorary secretary.

### *The Health of Taunton.*

Dr. H. J. Alford, the medical officer of health of the urban and rural districts of Taunton, in his annual report for 1910, states that the death-rate in the urban districts was 12·6 per 1000, the corrected death-rate being only 11·7 per 1000, the lowest recorded. Six deaths were due to zymotic diseases, compared with an average of 18 for the past 10 years. The birth-rate was 21 per 1000. The infantile mortality was 76·2 per 1000 births. This decreasing rate Dr. Alford believes to be due to the Notification of Births Act and the appointment of a health visitor. In the rural districts the death-rate was 14·3 per 1000, the corrected death-rate being 11·2 per 1000. Seven deaths were due to zymotic diseases. The birth-rate was 20 per 1000. The infantile mortality was 46·3 per 1000 births.

### *The Health of Lynton (Devon).*

Dr. H. J. Edwards, the medical officer of health of Lynton, in his annual report for 1910 states that 19 deaths occurred, equal to a rate of 10·76 per 1000. Of this number one was over 90, two were more than 80, six were above 70, which certainly speaks well for the health of the district. Only one of the deaths occurred in an infant under 1 year. The birth-rate was 19·26 per 1000. Only one infectious disease was notified, and that in a visitor who arrived in the initial stage of enteric fever. Dr. Edwards states that the rainfall was unusually heavy during 1910—viz., 54·16 inches, as compared with 41·95 in 1909, and 38 inches, the average for the past 35 years.

### *"Loose and Shadowy Assertions."*

At the Frome (Somerset) county court on March 7th, before his honour Judge Gwynne-James, Dr. A. Sykes-Ward sued a man for 10 guineas for medical attendance. For the defence it was contended that some of the visits for which plaintiff claimed had not been made, and that there had been a lack of skill in his treatment of the case. His honour, in giving judgment for Dr. Sykes-Ward, said there was not a tittle of evidence that the visits charged for had not been made and that the treatment was not of the best.

March 14th.

# SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Question of Precedence between the Royal Colleges.*

FOR some years past the Royal College of Surgeons of Edinburgh has questioned the right of the Royal College of Physicians of Edinburgh to take precedence at public functions. In 1901 Lord Balfour of Burleigh, then Secretary for Scotland, accorded to the Royal College of Physicians precedence on the occasion of the presentation of addresses to His late Majesty King Edward VII., and intimated to the Royal College of Surgeons that this decision would be acted on by the Scottish Office until disturbed by any higher authority. Recently the Royal College of Surgeons presented a petition to the Lyon King of Arms, claiming on various grounds that it is on all public and ceremonial occasions entitled to precedence over the Royal College of Physicians, or otherwise that such precedence should be granted it. The petitioners submit, with reference to the decision of 1901, that no power to deal with such matters has been committed to, or is possessed by, the Secretary for Scotland, and that the decision, which was given on representations by the Royal College of Physicians without any opportunity being given to the petitioners for being heard thereanent, and which subverted the existing usage, was beyond the jurisdiction of Lord Balfour, and is wholly inept and ineffectual in law. Answers to this petition were lodged by the Royal College of Physicians and Dr. Byrom Bramwell, the President, stating that on Feb. 9th, 1911, they presented a petition to His Majesty the King on the matter, and submitting that the present proceedings before the court of the Lyon King ought to be sisted *in hoc statu* to await the declaration of the King's pleasure on the petition of the respondents. The respondents maintain that the petitioners have no right to precedence over them by usage or by any other title. On March 3rd the Lyon King of Arms intimated that he had fixed Thursday the 9th for the purpose of hearing parties as to further procedure. On March 8th the petitioners were informed by the Lyon King that he had received a letter from the Secretary for Scotland, who stated that after consultation with the Lord Advocate he was of opinion that the Lyon King had no jurisdiction in the matter, and that the proper course was for him to decline to jurisdiction. He therefore would issue an interlocutor in terms of the instructions he had received. Following this communication the Royal College of Surgeons, through its agent, intimated its desire to protest in the strongest possible way against the issuing by the Lyon King of an interlocutor in terms of the instructions of the Secretary of State for Scotland, stating that the College did not consider it within the province of either the Secretary of State for Scotland or the Lord Advocate to interfere with one of the courts of the realm in the discharge of its functions, and intimating that it would at once appeal against the interlocutor which the Lyon King had intimated that he was about to issue. The interlocutor was issued on March 9th, and the Royal College of Surgeons appealed against it.

*Death of Dr. Andrew Smart.*

The death occurred on March 8th of Dr. Andrew Smart at his son's house in Hendon, in his 87th year.

*Aberdeen Dispensary: Serious Financial Situation.*

The annual meeting of the supporters of the Aberdeen Dispensary, Maternity Hospital, and Vaccine Institution was held in the Town Hall, Aberdeen, on March 7th. In the annual report the committee makes a special appeal for support, calling attention to the growing seriousness of the position now occupied by the Dispensary and Maternity Hospital in consequence of the increasing debt. Unless successful efforts are speedily made to relieve the pressure upon the finances the operations of these institutions, which have hitherto been worked under one board, will have to be either contracted or suspended altogether. The committee appeals most earnestly for adequate funds to carry on the work. The committee of management has under consideration the preparation of a scheme for the separation of the dispensary from the Maternity Hospital and the creation of a new board for the management of the latter institution. In this way it is hoped that the future financial position, both of the dispensary and of the hospital, may be put on a more satisfactory basis. A motion to adjourn the meeting for a month was unanimously agreed to. In the meantime a committee has been appointed to inquire into the financial position and confer with the medical staff and other parties interested to ascertain whether it is possible to continue the institutions and on what conditions.

*Tuberculosis and Occupation in Aberdeen.*

Dr. Matthew Hay, medical officer of health of Aberdeen, in his report on tuberculosis, gives statistics regarding occupation and tuberculosis in Aberdeen. He finds that the percentage of deaths from phthisis to deaths from all causes is highest for printers and lithographers (33 per cent.), stonecutters and masons (31 per cent.), and clerks (26 per cent.). These are considerably above the rest. The percentage is lowest for bakers, carters, joiners, and labourers, with from 7 to 9 per cent. In a table giving the death-rates from phthisis and other causes per 1000 persons employed in the selected occupations, and for comparison the corresponding death-rate among the whole population of the city at ages above 21 years (males and females being separately distinguished), it is shown that stonecutters and masons stand above all others with a death-rate 5·7 per 1000 from phthisis—that is, three times as high as the average rate, 1·9, for males above 21 years. If allowance be made for the inclusion of wallers, among whom the mortality from phthisis can scarcely be greater than the average, the death-rate of persons actually engaged in the cutting and hewing of granite is probably 6 2 per 1000. Next to stonecutters come printers and lithographers with 4·5 per 1000. Then combmakers with 4·3, clerks with 3·8, and tailors with 3·2 per 1000. Such are the occupations of those investigated in Aberdeen that may be said to suffer unduly from phthisis. The fact is noted that dressmakers and milliners do not suffer to the same extent as tailors and clerks from phthisis, and Dr. Hay suggests that the somewhat larger amount of physical exercise may in part account for this, although it does not seem to have the same effect on tailors; also, in the death registration, the occupation may not, especially in the case of younger women, be always stated. Carters and engineers (including blacksmiths and similar workers in iron) are the healthiest of occupations for males dealt with. Attention is drawn to the exceptionally large number of deaths among stonecutters after 55 years of age. In nearly every other occupation except labourers phthisis is relatively rare as a cause of death after that age, and it is possible that in Aberdeen at any rate the large average among labourers is due to the presence among them of former stonecutters. From careful comparing of statistics it seems to be proved that the use of pneumatically driven tools, which produce more fine dust than the chisel, has prevented stonecutters and masons from sharing in the general decline of the death-rate from lung diseases. Dr. Hay says that use of closed sheds in place of the old open ones may account for the diminution of diseases of the lung other than phthisis in these occupations during the last five years, for while the closed shed increases the liability to inhale dust it affords some protection against cold. Dr. Hay suggests that entrance to trades with a high mortality from phthisis should be guarded, as far as possible, from youths with a definite family history of tuberculosis or with defective chest development or lung weakness.

*Victoria Hospital, Dundee.*

The annual meeting of the supporters of the Victoria Hospital, Dundee (formerly the Incurable Hospital), took place on March 10th. Dr. Martin Whyte, in seconding the adoption of the report, said that some cases which had been admitted as incurable had been cured. He wished that the question of treating advanced cases of phthisis could be faced. Many schemes were proposed for a King Edward memorial, but he did not think they could do better than follow the example of Glasgow. Dr. Alexander Campbell said that at the Victoria Hospital they took in advanced cases of phthisis. Dr. C. Templeman stated that the local authority recognised that it was its duty to deal with advanced cases of phthisis which were a serious danger. The report was adopted.

March 13th.

# IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Poor-law Guardians and Private Practice.*

POOR-LAW guardians in Ireland in many instances attempt to interfere in the private practice of thei medical officers, and not infrequently even demand an explanation from a medical officer of some matter occurring in his private practice. The Local Government Board, curiously enough, has not discouraged this proceeding, and has even suggested that boards of guardians might with advantage attempt to arrange scales of fees to control the medical officers in their charges. This proposal has often been made, both by the Local Government Board and by local boards, in answer to the just complaint of the medical officers that many people, other than "poor persons," claim and obtain the benefit of free medical attendance. It is said that if people of moderate means could be sure of obtaining attendance for a moderate fee they would be willing to pay it, whereas at present they claim free attendance. The medical profession, however, while expressing willingness to see patients of moderate means for moderate fees, has steadfastly refused to recognise the right of boards of guardians to put pressure upon them. A determined effort is now being made in the Swinford district in county Mayo to coerce the medical profession. A vacancy having occurred in the post of dispensary medical officer a meeting was held of the local clergy and guardians. At this meeting a scale of fees was drawn up which the guardians proposed should be binding on the prospective medical officer. According to this scale, the medical officer was to afford advice, attendance, and medicine to all classes at certain fixed rates. It was proposed to insert the scale in the advertisement of the approaching election, and acceptance of the scale was to be a condition prior to appointment. The Local Government Board has, of course, had to point out that the insertion of such a condition in the appointment would be *ultra vires*. The local board, however, remains obdurate, and has decided not to make any appointment unless its wishes can be carried into effect.

*King's Professor of Midwifery, Trinity College.*

Mr. Thomas H. Wilson has been elected King's Professor of Midwifery in the School of Physic in succession to Dr. Henry Jellett, who resigned on being appointed Master of the Rotunda Hospital. Mr. Wilson has been gynæcologist to the Richmond Hospital for many years, and was acting professor of midwifery for a year after the death of Sir Arthur Macan. He is, therefore, a teacher of experience.

*National Maternity Hospital, Dublin.*

The report read at the annual meeting of the National Maternity Hospital last week showed that the number of intern patients during the year amounted to 898, whilst those attended at their own homes by nurses and medical men numbered 1135. There had been over 4000 attendances during the past year at the dispensary. The total income for the year amounted to £3650 5*s*. 11*d*., and the total expenditure to £3665 5*s*. 7*d*., leaving still an overdraft of over £4000. The hospital receives a grant of £250 a year from the Dublin corporation.

March 14th.

# PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Personal Attendance of Pharmaceutical Chemists at their Dispensaries.*

LEGAL action has recently been taken in a case in which a pharmaceutical establishment was for the most part in charge of a man having only the status of a *préparateur en pharmacie*, the qualified principal being in attendance only from 5 to 7 P.M. Both of them were prosecuted in a court of justice, the former for the illegal practice of pharmacy and the latter as an accomplice in this offence. Counsel for the defence argued that all the prescriptions were dispensed in the evening under the supervision of the principal, and that during the early part of the day the assistant sold no medicines, but only such things as mineral waters and tooth-pastes. In the result the court fined the assistant 500 francs with time for payment, and fined the qualified principal 500 francs, to be paid forthwith.

*An Exhibition of Artistic Productions by Medical Men.*

A Salon Médical, or exhibition of the works of artists belonging to the medical profession, has been formed in Paris at No. 31, Boulevard des Italiens, and will continue from March 28th to April 5th. This exhibition, which has received the distinctive name of Salon des Asclépiades, will be open from 9 A.M. to 6 P.M. It will contain examples of painting, sculpture, pastel, engraving, and decorative art, whether previously exhibited or not, by medical men, *internes*, and medical students. In addition to the above-mentioned class of exhibits there will be a section reserved exclusively for medals and artistic objects having a connexion with medicine.

*Election of a Member of the Academy of Medicine.*

At the election of a member of the Academy of Medicine in the Section of Anatomy and Physiology 60 votes out of a total of 69 were given for M. Prenant, a professor in the Faculty of Medicine.

*Immigrants from Infected Districts and the Protection of the Public Health.*

The President of the Council and the Minister of the Interior have recently appointed a commission for the purpose of considering what measures might be taken for the protection of the public health in connexion with the admission of immigrants into France, regard being had to the conditions under which the immigrants travelled and also to their residence in towns. At a meeting of this committee a communication was received from M. Mirman, *directeur de l'Assistance et de l'Hygiène Publique*, who inqnired whether in consequence of information supplied by the Minister of Foreign Affairs or in consequence of scientific progress the commission recommended any alterations of the existing method of dealing with these questions. In reply the commission recommended the continuance of the existing system, adding that there was not in its opinion any reason at present for taking special measures with respect to persons or goods coming from Manchuria or from Astrakhan, because in accordance with the general and permanent regulations of the maritime sanitary police all vessels arriving from countries infected with plague underwent careful sanitary inspection and were cleared of rats before discharge of the cargo. At the same time, it was necessary to watch the progress of the epidemic in these countries and to keep in mind that fresh developments might necessitate additional regulations.

March 13th.

# VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*Number and Distribution of Medical Practitioners in Austria.*

THE official figures dealing with the distribution of medical practitioners in this country are now published, and they afford a remarkable insight into the prevailing conditions. At the end of the year 1910 there were altogether 13,202 licensed practitioners, as compared with 12,426 in 1905. These figures include those members of the Army Medical Corps who have also at the time in question been carrying on practice outside their official duties, the military surgeon being in some places the only practitioner for miles and miles. The number of medical men has thus increased by over 6 per cent. in five years, and since 1887 the increase is 76 per cent., whilst the population has increased by only 28 per cent. The increase of medical students was also most remarkable. Whilst in 1880 the proportion of all matriculated students in the universities who took up medicine was 13 per cent., in 1891 the proportion was 42 per cent. of all students. Now the annual mortality amongst medical men in this country is 1·8 per cent., whilst the annual increase of the population is 1 per cent. In the period from 1885 to 1904 there were 12,300 graduations of students, whilst the number of practitioners increased by 4500. This shows that either a large number of those who obtained the diploma had to give up practising in this country, or else that the number of deaths of members of the profession has been far in excess of what

was to be expected, both facts indicating the existence of unsatisfactory conditions. The increase of the profession, against which many warnings have been issued, has had the result that on an average there is now one medical man for every 2175 of the population, whilst in 1887 the proportion was one medical man for 3242. The highest percentage of increase of medical men was in Vienna, where their number was 1377 in 1887 and 3046 in 1910. Similar conditions obtain for all the larger towns, which show an enormous increase of medical men, whilst the country districts become less and less popular with the profession, as is shown by the relative decrease of their numbers in comparison with the increase of population. The over-production of medical men tends to swell the number of practitioners in towns, where they prefer to turn their abilities to specialist branches. The number of specialists in the whole of Austria has not yet been published, but only the figures for the three largest cities. From these figures it appears that there are 475 specialists in Vienna, 71 in Graz, and 200 in Prague; in 1905 there were 361 specialists in Vienna and 52 in Graz. Thus 16 per cent. of all practitioners in Vienna, 25 per cent. in Graz, and 23 per cent. in Prague are specialists. As regards the health resorts, Karlsbad heads the list with 763 practitioners, Meran has 76, Marienbad has 69, Baden has 53, Franzensbad has 50, Bozen has 37, and Abbazia has 36. These few places show an increase of 17 per cent. within the last five years. The proportion of medical men to population varies. It is only 1 per 390 inhabitants in Olmütz, which is the worst figure, but the larger cities show comparatively better conditions than the smaller towns, the proportions being 1 to 670 inhabitants in Vienna, 1 to 590 inhabitants in Prague, and 1 to 1010 inhabitants in Trieste. As regards the territorial distribution in the country, the worst condition as regards the financial outlook prevails in Galicia, where 10,000 inhabitants can only support one practitioner, whilst in Lower Austria there is one practitioner for each 2080 inhabitants. There are 80 female practitioners, or 6 per 1000 of the total. In 1903 only nine were practising. Of these 80 ladies, 39 are in Vienna, and, as a rule, they have taken up the treatment of diseases of women and children. Nearly 60 per cent. of all practitioners hold appointments in the service of either the State or the district boards of health, or with the Krankencassa (contract practice). In the country districts 80 appointments have been vacant for more than two years, because the payment offered is not sufficient to attract applicants. The necessity of organisation in order to obtain better remuneration for professional services is at last becoming understood by 70 per cent. of the practitioners in Vienna, and also by a large proportion of those who have settled in the country districts. These are the only conditions which hold out a promise for the future of our profession in Austria.

*The Austrian Cancer Research Society.*

The Austrian Cancer Research Society was inaugurated a few days ago with elaborate ceremonial in the splendid hall of the University in the presence of many scientific and social celebrities and State functionaries. The president-elect, Professor von Eiselsberg, opened the meeting, and in a most instructive speech explained the aims of the new society. He said that there were already 600 members, who would strengthen the position of those by whom the research work would be conducted. He further remarked that two leading points must be kept in mind in these investigations—namely, the etiological factor of cancer and the therapeutic use of a serum. It was also in contemplation to found an asylum for cancer patients like the one in Heidelberg, where the sufferers could be treated with a faint hope of help. Professor Fränkel, the secretary of the society, delivered a lecture on the Problems of Cancer, in which he pointed out that biological and biochemical research was at present the chief means available for solving this important mystery. He said that the group of conditions termed "disposition" had at last been reduced to a simpler form by the discovery of Freund, who ascertained that the serum of healthy persons destroyed cancer cells, whilst that of cancerous persons left these cells intact. Continued research would be accepted from all sources.

*Syphilitic Osteitis of Infants.*

At a recent meeting of the Gesellschaft der Aerzte Dr. Goldreich showed an infant, three months old, who presented a remarkable appearance of the fingers. The first phalanx of each finger, as well as that of the second and third toe on each foot, were thick and very much broader than normal, imparting to the fingers and toes the appearance of bottle-shaped disfigurations. The child had a maculo-papulous exanthem on the trunk and also specific rhinitis; no medical treatment of any kind had been given. Examination by the X rays revealed the presence of a rarefying osteitis with secondary hypertrophic periostitis of the affected bones. The metacarpal and metatarsal bones showed similar changes, but these were not visible with the naked eye or palpable. Dr. Goldreich said that this condition, which was confined to the osseous structures, the soft parts not being affected at all, was very rare. Hochsinger has collected 65 cases of affections of the fingers alone and 12 cases where the toes were also the seat of disease. Under specific treatment there was generally very satisfactory improvement.

March 11th.

## CONSTANTINOPLE.

**(FROM OUR OWN CORRESPONDENT.)**

*Cholera in Smyrna.*

FROM Smyrna comes the news that two cases of cholera occurred there with fatal results on Wednesday last. Bacteriological examination proved that they were genuine cases of cholera Asiatica. The sanitary commission of Constantinople held an extraordinary meeting at which it was decided to submit to a strict medical examination and quarantine all the passengers coming from Smyrna. Some apprehension is felt in the Turkish metropolis.

*The New Austrian Hospital.*

The Austro-Hungarian ambassador announced to a gathering at an official reception that the new Austrian hospital will probably be opened at the end of next month. It is being constructed and equipped according to the most recent requirements of medicine and surgery. It is situated on a lofty plateau near the barracks of Tashkishla, not far from Taxim, a district beyond Pera, and commands a magnificent view of the Bosphorus. It is asserted, it seems with substantial reasons, that it will be the most modern and most efficiently equipped of all the numerous hospitals of Constantinople. The construction alone will cost, when completed, about half a million kronen (£20,833).

*The Civil Medical Faculty.*

This year, says a local newspaper, only six medical students were registered at the civil medical faculty of Constantinople. This small number is very striking, as in each of the previous years the number of entering students from different parts of the Ottoman Empire amounted to between 50 and 60. Two reasons are assigned for such a decline in the numbers. First, the qualified medical men, who are sent by the Government to the provinces, receive a very small salary. In some cases when employed in municipal service they get only 600 piastres a month and must not engage in private practice. The second reason is that the medical faculty, being at Haidar Pasha on the Asiatic coast, is too far from the centre of the city. The majority of students living in Stamboul must travel backwards and forwards on the local steamers, which is rather a costly business. There are few countries which need more urgently skilful civil medical men than Turkey, especially at the present juncture, when the whole empire seems to be awakening to its possibilities in every direction. In consequence of the distance the cliniques at Haidar Pasha are also attended by very small numbers of patients. All these facts have been taken into consideration by competent authorities under the presidency of the Minister of Public Instruction. After a long discussion it has been decided, by 26 votes against 2, to transfer the cliniques to Stamboul. The question of transferring the whole medical faculty from Haidar Pasha to Stamboul is also being seriously discussed at present.

*Extraordinarily Inclement Weather.*

From all parts of Turkey alarming news reaches the metropolis of an exceedingly severe winter. Old people say that they have not witnessed such extraordinarily inclement weather for the last 40 years. Everywhere snow is falling in great abundance, the thermometer showing for many weeks

20, and in some places even more than 30, degrees below zero. Snowstorms are raging and communications are interrupted. In the province of Erzerum the calamity of an earthquake has been added to the inclemency of the weather. At Jerusalem the snow attained the depth of about half a metre, which is quite unprecedented for that part of the country. In many places the snow tempests have caused great destruction of property and loss of human lives. Whole companies of men have been found frozen to death in the vilayet of Castamouni. The need and misery of the poorer population are appalling. Many sailing vessels went down in the Marmora and Black Sea. Also at Constantinople the winter has been persistently severe for about a month. Some days the thermometer showed 6° Celsius below zero, which is quite unusual for the Turkish metropolis. As I write these lines the weather seems to be changing and a milder temperature exists.

*Terrible News of the Plague.*

From Harbin *viâ* St. Petersburg comes really terrible news of the pneumonic plague as it rages in the Manchurian town of Fu-Chia-Tien. Human activity in this place seems to have completely died out; the streets are empty and deserted and all the houses are left desolate. Those who were not struck by the plague in the town itself fled terror-stricken and were overtaken by the black epidemic outside the town. The bazaars and markets are closed. Dogs alone roam in the streets, howling and feeding on the corpses of their former masters. The stench is horrible. The hospitals are abandoned. There are no ill people any more and no medical men—all have died. Only on a few beds lie the dead bodies of those who expired last. The only living human beings are the few Chinese soldiers that watch over the dead town. They stand in vain, as there is nobody within whom they need to watch. A little to the east of Harbin the plague has made quite incredible ravages. All the intensity of the epidemic seems to have been concentrated at a locality called Ashishe. Here the number of the deaths amount to 400 daily. In the course of only a few weeks whole city quarters have completely died out. The utter helplessness of the population, the lack of adequate medical assistance, and the fanaticism of the Chinese priesthood—that fans the savage instincts of the ignorant rabble—combine to create a situation of terror such as can only be met with in those far-off old-world places of barbarism. The Chinese authorities have lost their heads entirely. In many places priests hold public discourses to the effect that China is visited by the plague as a heaven-sent punishment for having allowed the Europeans to settle among the Chinese. Only the destruction of the foreigners could free the country from the epidemic.

March 2nd.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

*Compensating Dairymen.*

LAST summer an extensive outbreak of typhoid fever occurred among patrons of a particular dairy in Fitzroy, a northern suburb of Melbourne. The supply came from a farm a few miles out of the city, and it was proved that a typhoid carrier had been employed at this farm, and that there were several cases of ill-defined sickness among employees and children of the owner. The Board of Health quarantined the farm and destroyed the daily output of milk for some time, involving the owner in a very considerable loss. He subsequently applied for compensation, and this request was supported by a deputation of the Dairymen's Association. The Minister of Health declined to recognise the claim on the ground that there was plenty of evidence that the owner had not been sufficiently careful of his duty as a dairyman.

*Australian Meat.*

The Australian beef and mutton shipped to the Philippines under contract with the American army have given great satisfaction. Commissary-General Sharpe stated "frozen fresh beef of hind-quarters only and mutton were supplied from Australia in large quantities and were of universally good quality." Experiments were made with frozen beef that had been kept in cold storage for two years. Samples were sent to the army medical department and the Insular Bacteriological Bureau of Science, which reported as follows:—

The beef had none of the bacteria present in meat poisoning. The cooked meat (steak) lacked aroma, but had good flavour and compared favourably with fresh frozen beef, and the only gross evidences of long storage were slight discolourations of the fasciæ and a general loss of water.

*Contagious Dairy Disease.*

At the session of the Australasian Science Congress in Sydney, Professor Gilruth of Melbourne communicated a paper on an acute outbreak of inflamed udders due to B. lactis aerogenes. The symptoms were like those of ordinary garget, which was not recognised as contagious. The milking machine, which was badly kept, appeared responsible for spreading infection. Experimental inoculation of B. lactis aerogenes obtained from infected cows gave rise to acute inflammation of the particular quarter. The important point is that this bacillus is very common in piggeries and dairies, and might be the cause of most of the painful and swollen udders.

*Consumption.*

At the Sydney Science Congress Sir P. Sydney Jones read a paper dealing with the causes of consumptive incidence. He reviewed most of the accepted positions with regard to tuberculosis. He considered that where compulsory notification was in operation it was the bounden duty of the State to provide sanatoria and hospitals for advanced cases.

*"The Fly Peril."*

A somewhat sensational address was made by Dr. Burnett Ham, chairman of the Victorian Board of Health, at its last meeting, on the subject of disease transmission by flies. Dr. Ham urged a "crusade" against flies, and is having an illustrated wall card printed setting forth the dangers of allowing flies to breed without restraint and obtain access to food.

*Decline of Rabbits.*

The rabbit industry in Victoria is stated to be slowly but surely disappearing. The first export of frozen rabbits was made in 1894, in which year 14,928 rabbits were sent to England. Next year the total was 431,716. In 1900 the total was 5,678,224, and in 1905, 10,258,356. Since that year the total has gradually declined till last year it had come down to 2,841,648 rabbits exported. Exporters and agriculturists alike are pleased at this result. The former have all their available freezing plants occupied with meat and butter and cheese, while the latter view the gradual extinction of the rabbit pest with composure.

*Health of Western Australia.*

The annual report of the principal medical officer for Western Australia gives the population of that State as 274,755; the birth-rate 27·66, which is a decline of 3 per 1000 for the last 10 years. The death-rate was 9·85. Typhoid fever accounted for 3·07 per cent. of all deaths. No case of plague was notified. There is no system of sewerage anywhere in Western Australia, though one is being undertaken at Perth.

*Consumption Hospital.*

The hospital for advanced consumptives which is projected by the Victorian Government, and is to contain 100 beds, has been delayed in building owing to a difference in estimate of cost. The Government architects estimated the outlay at £10,000, but the lowest tender received was over £14,000. It has been decided to accept none of the present tenders, but to make some amendment of the plans and call for fresh tenders.

Feb. 4th.

# Obituary.

WILLIAM HENEAGE LEGGE, M.R.C.S. ENG., L.S.A.

THE death occurred at Ringmer, near Lewes, Sussex, on March 6th of Mr. William Heneage Legge, at the age of 53. The son of Dr. William Legge of Derby, and grandson of the Rev. William Legge, historian, of Fakenham, Norfolk, William Heneage Legge was educated at Trent College and under Dr. Reid at Ore, Hastings. He became a medical student at Westminster and took the diplomas of L.S.A. in 1880 and M.R.C.S. Eng. in 1881. The first Boer war broke out at this time and Mr. Legge went out as medical officer on

a troopship. Returning to this country he settled at Ringmer and besides a private practice held some public appointments and took an active part in public affairs. His knowledge of all things archæological in East Sussex was probably as great as that of any of his contemporary observers, and he was a frequent contributor to archæological journals on these subjects. The funeral took place at Ringmer on March 11th.

# Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At a meeting of the Council on March 9th the undermentioned diplomas were conferred upon the following gentlemen, who have now complied with the respective by-laws:—

*Diploma of Fellow.*—Ernest Marshall Cowell, M.D. Lond., L.R.C.P., M.R.C.S., University College Hospital; and Phirozshah Byramji Bharucha, L.M.S. Bombay, L.R.C.P., M.R.C.S., Bombay University and Middlesex Hospital.

*Licence in Dental Surgery.*—Thomas Benjamin Burke, Manchester University.

THE SMALL-POX EPIDEMIC IN LONDON.—During the past week there has been no marked change in the small-pox situation. On March 8th one fresh case (from Lewisham) and one death were registered. On March 9th there were five new cases, viz.:—Three from Poplar and one each from Shoreditch and Camberwell. On March 10th two new cases were notified, one from Poplar and one from Shoreditch, and on March 11th one from Hackney. At a meeting of the Metropolitan Asylums Board on March 11th Lord Donoraile, chairman of the statistical committee, gave out in answer to a request the following particulars in reference to the vaccination of the small-pox patients admitted at the South Wharf between Feb. 21st midnight and March 9th:—

There have been 52 genuine small-pox cases admitted. Of that number 36 were stated to have been vaccinated in infancy, of whom one has died; in three cases there was no evidence of vaccination, and two of those patients have died; 13 were not vaccinated, of whom five had died. The one patient vaccinated in infancy who died was aged 43 years; the two patients in whose cases there was no evidence of vaccination who died were aged 40 and 84 years respectively, and the five unvaccinated patients who died were aged respectively 1 month, 2 years and 4 months, 3 years, 4 years, and 25 years. Only one of the 36 patients said to have been vaccinated in infancy had been revaccinated before infection. He is a patient aged 10 years and is still alive. Two additional cases were admitted on Friday, but in those cases the condition as to vaccination is not yet ascertained.

On March 12th one case was reported from Shoreditch. No fresh cases were admitted on March 13th or 14th, the total under treatment being 48. This, with one new death, the tenth, makes a total of 58 genuine cases recorded up to March 15th. The London County Council at its meeting on March 14th unanimously resolved that for a period of three months chicken-pox should be made a notifiable disease, experience having proved that slight cases of small-pox are sometimes mistaken for chicken-pox. The satisfactory nature of the precautionary measures taken by the sanitary authorities is clearly shown by this slight activity in view of the extensive exposure that took place in many directions before the disease was recognised. In Stepney there has not been a genuine case of small-pox for 13 days—March 2nd was the last. There has been here no alteration or addition to the deaths from the report in our issue of last week.

THE ATTACK UPON THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.—A special court of governors of this hospital was held, under the presidency of Lord Peel, on March 8th, when the secretary read a report of the committee of management replying to the attack which had been made upon the hospital by *Mrs. Bull* and *John Bull*. The report reviewed all the charges that have been brought against the hospital in a way which convinced the meeting that their patients in the hospital are, and have been, treated in a manner reflecting the greatest credit upon the medical and nursing staff. The straightforward statement of the committee showed clearly that obviously unavoidable circumstances have been utilised for the purposes of sensational journalism. Dr. A. E. Garrod, the senior physician to the hospital, said that all the charges on investigation had proved to be utterly groundless. Sir Thomas Barlow, on behalf of the governors, moved a vote of confidence in the committee of management. This was seconded by Sir Trevor Lawrence and carried. Mr. Edmund Owen and Dr. D. B. Lees afterwards respectively moving and seconding a motion declaring the attack on the hospital to be unworthy of respectable journalism.

THE ANNUAL GENERAL MEETING OF THE ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—This meeting will be held on March 23rd at the Holborn Restaurant, London, at 3.15 P.M., when the election of officers and other business will be transacted. At 4.30 P.M. there will be a conference with delegates from other associations of medical men holding part-time appointments.

WILTSHIRE HOSPITALS AND THE KING EDWARD MEMORIAL.—£1069 have been collected in Swindon for the King Edward Memorial Fund, and this sum is to be devoted to the endowment of the Victoria Hospital.—It has been decided at Devizes that the memorial to the late King shall take the form of an extension scheme for the local hospital. Mr. A. Grant-Meek, the chairman of the institution, has given £500, and it is hoped that a substantial sum will be subscribed.

BIRMINGHAM AND MIDLAND COUNTIES SANATORIUM, BLACKWELL.—The forty-fifth annual report stated that there had been a substantial increase in the number of patients admitted, the total having reached 1755 with an average stay of 17·7 days as compared with 1672 in 1909. This was the highest number of admissions recorded. The average number of beds occupied varied from a minimum of 68·4 during the fourth quarter to the maximum of 99·9 in the third quarter. The average for the year was 85·2. The financial position was discouraging. Not only had there been a decrease in income of £6 2*s.*, but the expenditure had increased by £54 19*s.* 10*d.*, leaving an adverse balance on the management account of £117 11*s.* compared with £56 9*s.* 2*d.* in 1909.

THE ROYAL DENTAL HOSPITAL OF LONDON.—The annual general meeting of the governors of the Royal Dental Hospital of London was held on March 9th, when Mr. E. Lloyd-Williams, a vice-president of the hospital, occupied the chair. In presenting the report the chairman called attention to the fact that there was a mortgage of £38,623 on the hospital, for which a sum of £2655 had to be paid annually for interest and compulsory instalment of principal. Last year they were enabled to pay off an extra £1500 in addition to compulsory payments. The total sum received for the general fund was £7003, of which £2031 came from subscriptions. The number of patients treated during the year was 21,036 and the attendances were 56,209. The number of administrations of general anæsthetics was 12,081, involving about 111,258 individual operations.

THE ANNIVERSARY DINNER OF THE MEDICAL SOCIETY OF LONDON.—This society celebrated its 138th anniversary dinner at the Hôtel Métropole, London, on March 8th, under the chairmanship of the President, Mr. Charters J. Symonds. Covers were laid for more than 150 guests, and amongst the company present were the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the President of the Royal Society of Medicine, the President of the Society of Tropical Medicine, the Master of the Society of Apothecaries, the Director-General of the Army Medical Service, the Inspector-General of the Navy Medical Service, the President of the Harveian Society, the President of the Hunterian Society, Professor A. Keith, Professor Howard Marsh, the Mayor of Marylebone, Dr. F. W. Mott, the President of the Ophthalmological Society, Dr. StClair Thomson, Sir John Tweedy, and Sir E. Venning. Sir Thomas Barlow proposed "The Medical Society of London" and congratulated the members on the prosperity of their society. Mr. Symonds, in replying, gave a most satisfactory account of the position of the society. Dr. Mott was then presented with the Fothergillian medal for his researches in the pathology of the nervous system, more especially in regard to syphilis. Dr. Mott, in his words of acknowledgment, rendered an eloquent tribute to the work which the London County Council are doing in the cause of scientific medicine. "The Guests" was the next toast, and was submitted by Dr. A. F. Voelcker. Dr. Goodhart responded to this toast, as also did the Mayor of Marylebone.

A DINNER TO SIR DAVID FERRIER.—A complimentary dinner is to be given by former students of King's College Hospital to Sir David Ferrier, F.R.S., to congratulate him on receiving the honour of knighthood. The dinner will be held on Wednesday, March 29th, and any King's man who may not have received an invitation is requested to communicate with the Honorary Secretary, Ferrier Dinner, King's College Hospital, London, W.C.

EASTBOURNE MEDICAL OFFICER OF HEALTH.—The town of Eastbourne becomes a county borough on April 1st next, and thus increased responsibility falls upon the heads of the various municipal departments. The town council, at its meeting on March 6th, decided to increase the salary of Dr. W. G. Willoughby as medical officer of health from £525 to £600 per annum, and as medical officer of the corporation sanatorium from £100 to £150 per annum, the increases to date from April 1st. Dr. Willoughby, the present President of the Society of Medical Officers of Health, has been medical officer of health at Eastbourne for 17 years.

THE BROWN DOG MEMORIAL.—On March 8th, at a meeting of the Battersea borough council, the law and general purposes committee reported that it had been asked by the donors of the Brown Dog Memorial for the return of the memorial and for the £300 which had been deposited with the council's bankers. The committee recommended that the brown dog and inscription should be destroyed and that the fountain should be retained and erected in a suitable place. No recommendation was made with regard to the £300 in view of the possibility of further legal liabilities. The report of the committee was adopted by 40 votes to 14.

FIFTH INTERNATIONAL CONGRESS FOR THALASSOTHERAPY (KOLBERG).—The Congress will take place at Kolberg in Prussia from June 5th to 8th next. It is under the protection of H.R.H. the Grand Duke of Mecklenburg-Schwerin. The committee of organisation includes the following gentlemen: Geh. Ob. Med.-Rat Professor Dr. Dietrich, 1st President; Geh. San.-Rat Dr. Röchling, 2nd President; and I. Bürgermeister Dr. Schmiedel, 3rd President. The secretaries are Dr. Kaminer, Herr Mann, general secretary of the Ostseebäderverband, and Dr. Margulies. The programme of the Congress is now prepared, and will be sent gratis by the committee of organisation upon application to the offices of the Congress, Potsdamerstrasse, 134b, Berlin, W.9.

BIRMINGHAM GENERAL HOSPITAL.—The board of management has recently issued the 131st annual report. The nursing staff has again been increased in order to reduce the working hours and to increase the time allowed for meals. The number of nurses is now 127. The enlargement of the X ray department and the more complete equipment provided has resulted in a considerable extension of the work, not only of the radiographic department but also in the treatment of lupus, skin diseases, &c. The necessity of treatment by radium was represented by the medical staff, and the board therefore entered into an arrangement to hire a quantity of radium on two days a week for six months. The number of in-patients under treatment last year was 5317, a decrease of 194, but the daily average was 308·5, an increase of 4·50.

CONVICTION OF A MEDICAL MAN FOR AN ATTEMPT TO PROCURE MISCARRIAGE.—At the recent assizes at Hertford, before Mr. Justice Bucknill, Mr. S. I. Lightfoot, a medical practitioner, was convicted and sentenced to five years' penal servitude upon an indictment charging him with using an instrument upon a young woman named Hill with intent to procure her miscarriage. It was not disputed that Hill, who is unmarried and lives in another town, went to the house of the accused, was examined by him, and that he used a catheter upon her which he left *in situ*, recommending her to return home and consult her usual medical attendant, or that premature confinement was caused. The defendant's case, however, was that eclampsia came on while the woman was in his consulting-room, and that he used the catheter as the nearest suitable instrument at hand in order to induce labour, sending her home because he could not keep her where she was; that entries in his books not stating the facts accurately were made in error by his wife; and that pressure of practice and forgetting the name of the medical man mentioned by his patient prevented him from informing that gentleman of what he had done. Leave to appeal against the conviction has been refused by the Court of Criminal Appeal.

A SOMERSET CENTENARIAN.—Mr. James Creedy, of Bridgwater, celebrated his hundredth birthday on March 6th.

PRESENTATION TO A MEDICAL PRACTITIONER.—Dr. L. S. McManus, one of the Direct Representatives of the medical profession on the General Medical Council, has for some months been prostrated by a severe illness. His many friends in Battersea, in order to show their sympathy in a practical manner, have presented him, through his son, with a cheque for £300, a pair of silver dishes, and an album containing an illuminated address. A bracelet has also been presented to Mrs. McManus.

A SOCIETY FOR THE STUDY OF HEREDITY IN BIRMINGHAM.—This society has been recently founded to study heredity in its bearings on the human race. It has for its President the Lord Bishop of Birmingham. The Right Hon. William Kenrick, Sir Oliver Lodge, Mr. Francis Meynell, and Mr. A. D. Steel-Maitland, M.P., are Vice-Presidents, and Mrs. Jordan Lloyd and Mr. H. Humphreys are the secretaries. The inaugural meeting was held on March 1st, when a large audience assembled to hear an address on "Human Heredity" by Professor J. Arthur Thomson.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*The Naval Medical Service.*

Mr. MCKENNA, the First Lord of the Admiralty, makes interesting observations about medical matters concerning the navy in his statement explanatory of the Navy Estimates 1911-12. He remarks that effect has already been given to many of the recommendations of the committee appointed to inquire into the Naval Medical Service, but others of them are complicated by financial issues which remain for settlement. The right honourable gentleman does not specify the recommendations to which effect has been given. He states that he has for some time been giving his most earnest consideration to the serious problem of tuberculosis so far as it affects the seamen of the Royal Navy. He has caused an investigation to be made by the Medical Consultative Board into the means by which under the conditions peculiar to the naval service this disease can best be treated and its inception and spread checked. Mr. MCKENNA notes that arrangements have been made by the Admiralty with civil hospitals for the supply in the event of war of trained nurses who would form a reserve of additional trained nurses. The new force will be known as Queen Alexandra's Royal Naval Nursing Service Reserve.

*Education (Administrative Provisions) Bill.*

The Education (Administrative Provisions) Bill, which has been presented in the House of Commons by Mr. TYSON WILSON, acting in concert with members of the Labour Party, deals with the relation of the medical inspector of school children to the feeding of underfed children. The scope of the Bill is explained in a memorandum. It sets out that the object of the Bill is to remove from the education authority the final responsibility for saying whether a child is or is not underfed, and to impose that duty upon the medical inspector (should one exist), the medical officer of health, or other medical official. As the law stands, it rests with the education authorities to say whether there are or are not underfed children attending their schools, and in consequence whether the Act should or should not be put into operation. This, says the memorandum, has led to uncertainty of administration.

Clause 1 of the Bill enables the education committee, the school managers, and head teachers to ask the medical man to examine the child.

In Clause 2 it is laid down that the medical inspector must examine a child alleged, by the persons authorised, to be suffering from underfeeding, and the head teacher is empowered, pending the report of the inspector, to make temporary provision for the child. The second subsection annuls the limitation of the rate imposed by the third section of the Education (Provision of Meals) Act, 1906, and the third section legalises the feeding of children during the school vacation.

Other clauses in the Bill propose that the medical inspector should present an annual report on the physical condition of children attending school in his area, and that an appeal from the decision of the medical inspector to the Board of Education should be given in certain circumstances.

*Rag Flock Bill.*

A Bill has been introduced into the House of Commons by Mr. JOHN BURNS to prohibit the sale and use, for the manufacture of certain articles, of unclean flock manufactured from rags.

*Sale of Margarine Bill.*

Mr. KILBRIDE has presented in the House of Commons a Bill "to provide for the further prevention of the fraudulent sale of margarine." It was read a first time.

## HOUSE OF COMMONS.

WEDNESDAY, MARCH 8TH.

*Medical Practitioners and the Rebate on Motor Spirit.*

Mr. GINNELL asked the Secretary to the Treasury, in view of the fact that the collection of motor spirit duty from manufacturers and dealers was the duty of the Revenue Department, by what authority did that Department, on failing to collect from those people, refuse the rebate due to a medical practitioner who was not bound to prove the payment of duty by those people; and whether the Chancellor of the Exchequer had sanctioned the refusal in such cases.—Mr. HOBHOUSE replied: In view of the fact that large quantities of motor spirit on which duty has not been charged, and is not chargeable, are held in stock throughout the country, rebate is refused unless the Commissioners of Customs and Excise are satisfied that duty has in fact been paid to the Crown in respect of quantities used by claimants of allowances on the duty. This is in accordance with the intentions of my right honourable friend the Chancellor of the Exchequer as embodied in the Finance (1909-10) Act, 1910. The identification of spirit on which duty has actually been paid can only be completed by the Customs and Excise officials on their being supplied with full information regarding the sources from which such spirit has been derived.

THURSDAY, MARCH 9TH.

*Typhoid Fever in the Bog Area of Glones.*

Mr. DUFFY asked the Chief Secretary to the Lord Lieutenant of Ireland whether any preventive measures had been taken by the Government to prevent a recurrence of the typhoid epidemic which visited and ruined so many families in the bog area of Glones, Athenry, all through last year; whether he was aware that the tenants were living in a wilderness of marsh and bog, and in constant terror of invading disease; whether the Browne estate in the district had been offered to the Commissioners; and whether, in view of the urgency of dealing with this fever-threatened district as soon as possible, he would direct the attention of the Estates Commissioners and the Congested Districts Board to the exceptional circumstances of this village with a view of removing the people on to the lands of the Browne and Monahan estates.—Mr. BIRRELL answered: Five cases of typhoid fever which occurred in two families at the place referred to were notified to the Local Government Board during the year 1910. The usual precautionary measures were carried out. It devolves on the sanitary authority and their officers, and not upon the Local Government Board, to take preventive action in connexion with outbreaks of infectious disease. The Glones section of the Browne estate has been offered to the Congested Districts Board, and the offer will be considered by them. The Monahan estate was offered for sale in 1906, but the offer was declined by the Board.

*Beri-beri Cases at Galway.*

Mr. PATRICK WHITE asked the Chief Secretary to the Lord Lieutenant of Ireland, as President of the Local Government Board, whether there were some cases of the disease known as beri-beri at present under treatment in the isolation hospital, Galway; whether he would state the number affected with the disease; the numerical strength of the nursing staff, and what provision had been made for their accommodation; whether one of the patients became delirious, and at the time he became so affected whether there was any male attendant in the hospital, or how he was controlled; whether the hospital was at times partly surrounded by water, and what means of ingress or egress there was to it from the mainland; and whether any precautions had been taken to provide male attendants in the event of any of the other patients becoming delirious.—Mr. BIRRELL said in reply: There are at present four patients from a Norwegian ship under treatment in the intercepting hospital in Galway, three of whom are undoubtedly suffering from beri-beri, whilst the other is under observation. The Local Government Board understands that the patients are in a well-ventilated ward in every way suitable for their treatment, and are under the charge of three qualified nurses, who occupy another ward and have the use of the kitchen. One patient became suddenly delirious and violent, but was got under control by the nurses and had become quiet before the medical officer arrived. The latter has since procured the assistance of two male attendants, one of whom will at all times be on duty and the other easily available. The hospital is built on the mainland, with the sea on two sides, and is accessible by foot, car, or boat.

*The Isolation of Small-pox in Scotland.*

Dr. A. P. HILLIER asked the Lord Advocate whether he was aware that the Local Government Board for Scotland, in a recent communication to the Public Health Committee of Edinburgh and Leith, had in suggesting the provision of further hospital accommodation for small-pox, alleged as one of their reasons for doing so the danger to the community consequent on the slackening of compulsory vaccination; and, if so, what steps the Local Government Board for Scotland proposed to take to bring this danger to the notice of other sanitary authorities.—Mr. URE replied: The honourable Member's inquiry is probably based on the wording of a report obtained by the Local Government Board for Scotland, which was communicated by it to the local authority of the city of Edinburgh. I am informed that the Board, on Feb. 28th, 1911, communicated with all the local authorities in Scotland that did not appear to have made provision for the isolation and treatment of cases of small-pox, requesting to be informed of the steps they proposed to take to secure that such provision would be available in the event of a case or cases of small-pox occurring.

Dr. HILLIER: Can the right honourable gentleman say that in that communication the ground alleged for making this recommendation was the increasing danger from the diminution in the number of vaccinations?—Mr. URE: I am not aware.

*Notification of Births Act.*

Replying to a question put by Mr. WEDGWOOD, Mr. BURNS wrote that the Notification of Births Act had been adopted for, or put in force in, 271 areas of local government. These included 29 metropolitan boroughs (including the City of London), 53 county boroughs, 54 non-county boroughs, 91 urban districts other than boroughs, and 44 rural districts. The right honourable gentleman appended to his answer the following tables:—

*County Boroughs in which the Notification of Births Act is in Force, with the Infant Mortality Rates (Deaths under One Year of Age per 1000 Births) in 1905 and 1909.*

| Name of county borough. | Infant mortality. 1905. | 1909. | Name of county borough. | Infant mortality. 1905. | 1909. |
|---|---|---|---|---|---|
| Bath | 91 | 83 | Newport (Mon.) | 125 | 115 |
| Birmingham | 154 | 134 | Northampton | 126 | 110 |
| Blackburn | 146 | 126 | Norwich | 174 | 119 |
| Blackpool | 133 | 112 | Nottingham | 155 | 150 |
| Bolton | 167 | 128 | Oldham | 150 | 119 |
| Bootle | 156 | 122 | *Portsmouth | 133 | 96 |
| Bradford | 144 | 116 | Preston | 154 | 136 |
| Brighton | 101 | 96 | Reading | 121 | 95 |
| Burnley | 173 | 156 | Rochdale | 133 | 104 |
| *Burton-upon-Trent | 87 | 102 | Rotherham | 123 | 116 |
| Bury | 147 | 130 | St. Helens | 134 | 150 |
| Cardiff | 118 | 103 | Sheffield | 167 | 118 |
| *Chester | 122 | 118 | Smethwick | 137 | 113 |
| Croydon | 95 | 80 | Southampton | 132 | 106 |
| Derby | 151 | 123 | Southport | 113 | 103 |
| Dudley | 167 | 140 | Stockport | 168 | 132 |
| Exeter | 122 | 99 | Stoke-upon-Trent | 147 | 126 |
| *Great Yarmouth | 132 | 125 | Swansea | 131 | 159 |
| Grimsby | 174 | 118 | Wallsall | 141 | 139 |
| Halifax | 131 | 97 | *Warrington | 147 | 130 |
| Ipswich | 144 | 92 | West Bromwich | 146 | 123 |
| Kingston-on-Hull | 152 | 114 | West Ham | 153 | 124 |
| Lincoln | 148 | 82 | *Wigan | 164 | 173 |
| Liverpool | 153 | 144 | Wolverhampton | 137 | 148 |
| Merthyr Tydfil | 193 | 143 | Worcester | 154 | 101 |
| Middlesbrough | 173 | 158 | York | 129 | 99 |
| Newcastle-upon-Tyne | 135 | 119 | | | |

* Act adopted since 1909.

*County Boroughs in which the Notification of Births Act is not in Force, with the Infant Mortality Rates in 1905 and 1909.*

| Name of county borough. | Infant mortality. 1905. | 1909. | Name of county borough. | Infant mortality. 1905. | 1909. |
|---|---|---|---|---|---|
| Barrow-in-Furness | 135 | 81 | Leeds | 151 | 122 |
| Birkenhead | 127 | 123 | Leicester | 148 | 127 |
| Bournemouth | 83 | 100 | Manchester | 157 | 134 |
| Bristol | 122 | 100 | Oxford | 116 | 75 |
| Canterbury | 119 | 73 | Plymouth | 135 | 131 |
| Coventry | 108 | 97 | Salford | 148 | 141 |
| Devonport | 113 | 96 | South Shields | 146 | 137 |
| Gateshead | 138 | 112 | *Sunderland | 142 | 135 |
| Gloucester | 118 | 95 | Tynemouth | 153 | 129 |
| Hastings | 113 | 79 | West Hartlepool | 146 | 113 |
| *Huddersfield | 119 | 95 | | | |

* Compulsory notification of births has been in force under the provisions of local Acts in Huddersfield since 1906 and in Sunderland since 1907.

*The Adulteration of Food.*

Mr. CHARLES BATHURST asked the President of the Local Government Board whether, in the contemplated amendment of the law relating to the adulteration of human foods, he would consider the advisability of including within the term adulteration not merely the addition to any article of food of some extraneous matter of a possibly deleterious character, but also the abstraction from flour, milk, rice, and other natural food products of ingredients of high food value for the sake of improved appearance or increased commercial profit without any intimation to the consumer, by trade description or otherwise, that such abstraction had taken place.—Mr. BURNS said in reply: The subject is one which must be considered in connexion with proposals for the amendment of the Sale of Food and Drugs Acts.

*Plague amongst Rats in East Anglia.*

Mr. GEORGE ROBERTS asked the President of the Local Government Board whether he was yet in a position to state the results of investigations made into the existence of plague among rats in East Anglia, or did he contemplate presenting a report to Parliament thereon; and would he consider the advisability of continuing these examinations in the summer and autumn, as such periods were regarded as the most dangerous for the spread of plague infection.—Mr. BURNS answered: I am expecting to receive very shortly a report on the investigations referred to. Until the report is before me I am not able to say what steps should be taken with regard to its publication. The procedure to be adopted during the summer and autumn will be carefully considered by me.

*Mortality of Poor-law Children.*

Mr. WEDGWOOD asked the President of the Local Government Board, with reference to the mortality of children under five in Poor-law institutions, whether he had yet been able to obtain fuller statistics to supply the want noted by the Royal Commission; and further, what the result had been of Dr. Darwall Smith's inquiry as to the causes of the heavy mortality.—Mr. BURNS wrote in reply: I am obtaining some statistical information with reference to infant mortality in Poor-law institutions, but it is not yet complete. I understand that the results of Dr. Darwall Smith's investigations will not be ready for some time.

*Deaths from Chicken-pox.*

Mr. CRAWSHAY-WILLIAMS asked the President of the Local Government Board whether he would state the number of deaths of children under the age of 15 years who were certified to have died from chicken-pox in England in the years 1908 and 1909, and what was their vaccinal condition; whether it was still the view of the Registrar-General that chicken-pox was usually so trifling an ailment, and so rarely if ever fatal, that it might be assumed with much probability that the greater part of the 100 or so deaths that year after year are referred to this cause were in reality cases of small-pox, as stated in his 46th Report; and what was the reason for the omission of the reference to chicken-pox from the 72nd Annual Report of the Registrar-General, after a similar reference had appeared for so many years.—Mr. BURNS furnished the following written answer: The numbers of deaths certified as resulting from chicken-pox of children under 15 years of age in England and Wales were 93 in 1908 and 94 in 1909. The vaccinal condition of these children is not stated in the death returns. With regard to the last part of the question, it is true that the statement quoted was made in the report for the year 1883, but subsequent experience has not shown that there is any evidence that any considerable proportion of the recorded mortality from chicken-pox is really due to small-pox. Although chicken-pox in the vast majority of cases is a very mild disease, it is well known that severe cases occasionally occur which may be fatal.

*A Case of Vaccination at Barnsley.*

Sir JOSEPH WALTON asked the President of the Local Government Board whether he was aware that a public vaccinator of the Barnsley union attended at the house of Mrs. Haigh of Barnsley after she had legally made a statutory declaration of conscientious objection under the Vaccination Act, 1907, and vaccinated the child in respect to whom such declaration of objection was made; and what steps, if any, he proposed to take, not only with regard to the action of the public vaccinator in question, but also of that of the vaccination officer of the union, who had entered the name of the child on the list he sent to the doctor, although he had received the certificate of declaration from the child's mother.—Mr. BURNS (by written answer) replied: I have seen a newspaper account of this case, and the statement of facts given in the newspaper agrees generally with that in the question. It appears that the woman's husband had left her, but that this information was not given to the vaccination officer. When a husband and wife are living together the husband is the person entitled to make the declaration of conscientious objection. According to the newspaper account the woman stated at the meeting of the board of guardians when the case was considered that, whilst she believed in vaccination, she did not want the child vaccinated, as it might have interfered with her work, and also that she consented to have the child vaccinated. On the information at present before me it does not appear necessary to take any further steps in regard to the case.

MONDAY, MARCH 13TH.

*The Midwives Act.*

In reply to Dr. ADDISON, Mr. BURNS said: The Government is not without hope that it may be possible to introduce a Bill to amend the Midwives Act this session.

*The Sanitary Conditions of Wye.*

Dr. ADDISON asked the President of the Local Government Board whether he had received complaints from the inhabitants of Wye, Kent, as to the insanitary conditions prevailing there; whether the local authority was taking suitable and efficient measures to deal with the existing nuisances; and whether he would direct one of the medical officers of the Local Government Board personally to inspect the sanitary arrangements and report upon what measures were necessary to be taken in the interests of the public health.—Mr. BURNS replied: I have received complaints in regard to Oxenturn, Lane, and Wye, and I have directed one of the Board's inspectors to visit the locality and report to me on the matter.

*Vaccination of Children.*

Dr. HILLIER asked the President of the Local Government Board whether, in view of the recent outbreak of small-pox, and the continued increase in the numbers of children exempted from vaccination, he would give instructions to have issued with the vaccination notices a circular pointing out the value of vaccination as a means of preventing the contraction of small-pox.—Mr. BURNS said in reply: The suggestion made by the honourable member is not one which I am able to accept.

Dr. HILLIER: Is the right honourable gentleman aware that in some localities 50 per cent. of the children are exempt from vaccination?—Mr. BURNS: I am aware exemptions are increasing, but I am not aware that they are 50 per cent.

Dr. HILLIER: Does the right honourable gentleman intend to take steps to put a stop to this?

No reply was given.

Mr. WEDGWOOD asked the right honourable gentleman whether he could state the number of public vaccinators who had been appointed as medical inspectors for elementary schools under the Education (Administrative Provisions) Act by local education authorities; and whether the Local Government Board agreed that these two offices should be held by the same person.—Mr. BURNS answered: I cannot state the number of public vaccinators who have been appointed as medical inspectors of school children. The Local Government Board have stated that both they and the Board of Education consider that the office of medical inspector of school children may with advantage be combined with the office of medical officer of health in a country district, and that amongst the other public offices which a medical officer of health may be allowed to hold is that of public vaccinator.

Mr. RAMSAY MACDONALD asked the President of the Board of Education whether he was aware that the Education Committee of the London County Council had resolved to recommend such Council to rescind their resolution of April, 1906, with reference to the examination and vaccination of children, and that the Education Committee further advised the exclusion from the public elementary schools of those children who were unvaccinated; and whether he would take immediate steps to deal with this proposal.—Mr. RUNCIMAN said in reply: I have seen a newspaper report of the proceedings of the Education Committee, from which I understand that they are recommending that the resolution referred to should be rescinded. The report states that they also recommend that no examination of children, for the purpose of ascertaining which of them have been vaccinated, should be made without the written consent of the parents. I understand that the recommendation of the Education Committee has not yet been adopted by the Council. I can only deal with the matter if there is an infringement of the Code.

TUESDAY, MARCH 14TH.

*The Dresden Hygiene Exhibition.*

Sir HERBERT RAPHAEL asked the First Lord of the Admiralty whether his attention had been called to the fact that several of the medical officers of his department had resigned their membership of the British committee formed for the purpose of preparing a British exhibit at the International Hygiene Exhibition at Dresden, on learning of the decision of His Majesty's Government not to support this exhibition; and whether, in view of the recent expression of commendation addressed by the President of the Board of Trade in the name of the Government to the chairman of the committee, he would advise these gentlemen to join the committee again and assist in preparing a suitable exhibit in connexion with diving, naval hygiene, and other cognate matters.—Mr. MCKENNA replied: I am unaware whether naval medical officers have at any time taken part privately in the work of the committee. None have joined it officially. The Admiralty cannot undertake to send an exhibit, and I regret therefore that I cannot act on the suggestion contained in the second part of the question.

Mr. BYLES asked the President of the Board of Education whether he had had his attention directed to the fact that the subject of medical inspection of school children, and the treatment of children found defective at the inspection, would be illustrated and discussed at the forthcoming International Hygiene Exhibition at Dresden; and whether he proposed to prepare an exhibit and to send delegates to the associated congresses.—Mr. RUNCIMAN replied: I have heard that these subjects are to be dealt with. I cannot undertake to send an exhibit. I do not understand that the Board has been asked to send a delegate, but I shall, of course, be prepared to consider any invitation to do so.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLINGHAM, HENRY REGINALD, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health of Totnes, Devon.

BALFOUR, T. STEVENSON, M.D., C.M. Edin., has been appointed Medical Officer and Public Vaccinator for the No. 2 District of the Chard (Somerset) Union.

CARTER, H. H., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Northallerton District of the county of Yorks, North Riding.

EARL, GUY STANLEY, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Registrar and Anæsthetist to the South Devon and East Cornwall Hospital, Plymouth.

EVANS, WILLIAM HENRY, M.R.C.S., L.R.C.P. Edin., has been appointed Medical Officer for the Southleigh District by the Honiton (Devon) Board of Guardians.

FLETCHER, DUNCAN, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for the Sheriffdom of Inverness, Elgin, and Nairn, to be attached more particularly to the Skye District.

HOWARD, CHARLES REGINALD, M.D., B.C. Cantab, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Frome (Somerset) Rural District Council.

JOULE, JOHN, L.R.C.P. Irel., L.S.A., has been appointed District Medical Officer by the Warminster (Wilts) Board of Guardians.

LUCY, REGINALD HORACE, M.B., C.M. Edin., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

MOFFATT, C. W. P., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Superintendent Medical Officer to the Bury and District Joint Hospital Board.

ROBINSON, GERALD CHARLES FREDERICK, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to the South Devon and East Cornwall Hospital, Plymouth.

STEELE-PERKINS, DUNCOMBE STEELE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Farway and Northleigh Districts by the Honiton (Devon) Board of Guardians.

THOMSON, A. M., M.B., B.Ch., B.A.O.R.U.I., has been appointed Assistant House Surgeon to the West Kent General Hospital, Maidstone.

WILSON, N., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Sherborne District of the county of Dorset.

WOOD, WILLIAM, M.B. Aberd., has been appointed Resident Medical Officer at the Hospital for Women, Soho-square, W.

WOOLLCOMBE, WALTER LEY, F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Consulting Surgeon to the St. Barnabas Hospital, Saltash, Cornwall.

WORTH, FRANCIS JAMES, M.D., B.S. Durh., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Basingstoke (Hampshire) Rural District Council.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BATH ROYAL UNITED HOSPITAL.—House Physician and House Surgeon. Salary each £80 per annum, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BIRMINGHAM GENERAL HOSPITAL.—Surgical Casualty Officer. Salary £50 per annum.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Physician, also Obstetric and Ophthalmic House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £90 per annum, with apartments, board, and attendance.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BURY, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

BUXTON, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £160 per annum, with board, lodging, washing, &c.

CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, apartments, and laundry.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and washing.

EDINBANE, ISLE OF SKYE, GESTO HOSPITAL.—Resident Medical Officer. Salary £200 per annum, with furnished house, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ten Clinical Assistants.

FIFE, COUNTY OF.—Assistant School Medical Officer. Salary at rate of £250 per annum.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Two House Physicians and Three House Surgeons for six months. Salary in each case at rate of £40 per annum, with board, lodging, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond street, London, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board and residence.

HULL ROYAL INFIRMARY.—Casualty House Surgeon for six months. Salary at rate of £60 per annum, with board and lodging.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL 49, Church-street, Kensington, W.—Vacancy on Honorary Medical Staff.

LEAMINGTON, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Junior Resident Medical Officer. Salary £65 per annum, with board, washing, and apartments.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

LONDON FEVER HOSPITAL, Islington, N.—Assistant Physician.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, near Manchester.—Resident Medical Officer, unmarried. Salary £90 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Honorary Surgeon

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80, with residence, board, and washing.

MANCHESTER SCHOOL FOR MOTHERS (ANCOATS BRANCH).—Honorary Medical Officer.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Clinical Assistants for six months.

NEWCASTLE ON-TYNE, HOSPITAL FOR DISEASES OF THE THROAT, NOSE, AND EAR.—Honorary Assistant Surgeon and Anæsthetist.

NEWCASTLE-UPON TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Bacteriology. Salary £200 per annum.

NEW HOSPITAL FOR WOMEN.—Female to Take Charge of Mechano-Therapeutic Department. Also Clinical Assistant.

NORTHAMPTON, NORTHAMPTONSHIRE SANATORIUM, Creaton.—Resident Medical Officer. Salary at rate of £200 per annum, with board, apartments, and laundry.

NOTTINGHAM, CITY OF, EDUCATION COMMITTEE.—Senior Medical Inspector Salary £300 per annum.

PETERBOROUGH INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Honorary Emergency Anæsthetist.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry.

ROCHDALE INFIRMARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Morning House Anæsthetist. Salary £25 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.

ST. MARY'S HOSPITAL, Paddington, W.—Assistant Ophthalmic Surgeon.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £75 per annum, with board, washing, and attendance.

THROAT HOSPITAL, Golden-square, W.—Honorary Assistant Surgeon.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £80 per annum, all found.

TRANSVAAL MINERS' PHTHISIS SANATORIUM, Springkell, Modderfontein, near Johannesburg.—Medical Superintendent. Salary £1000 per annum with furnished residence.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, &c.

WEST BROMWICH DISTRICT HOSPITAL.—Senior House Surgeon, unmarried. Salary £110 per annum, with board, residence, and washing.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum. Also Honorary Medical Officer in Charge of Electrical Department.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—House Surgeon. Salary £160 per annum. Also Junior House Physician. Salary £75 per annum.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.—Lectureship in Forensic Medicine.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Cranleigh, in the county of Surrey; at Wooburn, in the county of Bucks; at Tullaroan, in the county of Kilkenny; at Ballyragget, in the county of Kilkenny; and at Penkridge, in the county of Stafford.

# Births, Marriages, and Deaths.

## BIRTHS.

BARRETT.—On March 7th, at Rysseldene, Colwyn Bay, North Wales, the wife of W. Ernest Barrett, F.R.C.S., of a daughter.

BUCKLEY.—On March 13th, at The Ropewalk, Nottingham, the wife of Dr J. C. Buckley, of a daughter.

CARRUTHERS.—On March 10th, 1911, at Moody Hall, Congleton, the wife of E. J. W. Carruthers, M.D., of a daughter.

HEDLEY.—On March 15th, 1911, at 11, John-street, Berkeley-square, W., the wife of John Prescott Hedley, M.A., M.B., M.C. Cantab., of a son.

HODGSON.—On March 12th, at The Crescent, Salford, Lancs, the wife of Stanley Hodgson, M.D., B.S. Lond., &c., of a son.

MYLES.—On March 8th, at Clifton, Bristol, the wife of Staff-Surgeon T. W. Myles, R.N., of a daughter.

SMITH.—On March 11th, at 229, Balham High-road, S.W., the wife of Edwin Smith, M.D. Lond., Barrister-at-Law, of a daughter.

TALLENT.—On March 8th, at Walton Lodge, Chislehurst, the wife of J. H. Tallent, M.B. Cantab., M.R.C.S., of a son.

## DEATHS.

BOSSON.—On March 11th, at Lanby Hall, Alford, Lincs, George Bosson M.R.C.P., aged 66 years.

GILLATT.—On March 8th, at Cairo, Captain W. Harold Gillatt, R.A.M.C.

GORDON.—On Feb. 28th, at his residence, Laurel Cottage, Dalwood Dorset, John Hurd Gordon, L.R.C.P., in his 51st year.

SAFFERY.—On March 12th, at Talfourd-road, Camberwell, S.E., Frank Golder Saffery, M.R.C.S., L.R.C.P Lond., in his 42nd year.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths*

# Notes, Short Comments, and Answers to Correspondents.

## RATS AND THE PLAGUE: THE PROPOSED PORT OF LONDON BY-LAWS.

THERE have been issued in the *Gazette* the following by-laws proposed by the Port of London Authority "for the prevention of an outbreak of plague amongst rats at the docks":—

1. All rope and mooring tackle for securing any vessel either to the shore or to mooring buoys shall be fitted with such effective guards as will prevent access of rats from the vessel to the shore. For any breach of this by-law the master of the vessel shall be liable to a penalty not exceeding £5.

2. All possible means shall be adopted for catching and destroying rats during the stay of any vessel in dock. All empty cases and barrels shall be examined before being landed to ensure that no rats are contained therein. Any rats caught on board the vessel shall be killed, then placed in a bucket of strong disinfecting solution, and afterwards burnt in the vessel's furnace. No rats, alive or dead, shall be removed from the vessel. For any breach of this by-law the master of the vessel shall be liable to a penalty not exceeding £5.

3. When the discharge of cargo or the landing or embarking of passengers is not proceeding one gangway only shall be permitted to afford means of communication between any vessel and the shore. The end of the gangway near the vessel shall be whitened for a length of 10 ft. For any breach of this by-law the master of the vessel shall be liable to a penalty not exceeding £5.

After March 13th, for one month, any person may make, in writing to the Board of Trade, any representations respecting these proposals.

## THE LATE DR. PIFFARD OF NEW YORK.

Dr. George Henry Fox of New York, in the *Journal of Cutaneous Diseases* for February, gives some reminiscences of the well-known dermatologist, the late Dr. Henry Grainger Piffard, in which he tells two amusing stories about him. Dr. Piffard began to collect foreign works on skin diseases. He was a fair German and a better French scholar, but knew very little of Italian. To supply this deficiency he at once subscribed for one or two Italian medical journals, selected a teacher, and attacked the language with his customary vigour. Happening to run across an advertisement of some book, entitled something like "*Trattato della Pelle et cetera*," he gave his bookdealer an order for it. The bookdealer, in a polite note, informed him that this was an expensive work, published by the Italian Government, and that it would take several weeks to import it. Piffard replied in language more vigorous than polite—"Expense be damned"; when he wanted a book he expected his dealer not to talk about it but to get it. In about two months, during which time his knowledge of Italian had rapidly increased, the book arrived and with it a bill for about £12. To his surprise and dismay he discovered at first glance that it was not a strictly dermatological work, but an elegantly bound and elaborate treatise on the tanning of hides.

The other story illustrates well the fact that *non omnia possumus omnes*. Dr. Piffard was a most versatile man, and in his ample affections for hobbies embraced many mistresses, including microscopy, medical politics, botany, canoeing, photography, bicycling, fishing, rifle shooting, mycology, radiotherapy, Esperanto, &c., with all of which he acquired some appreciable proficiency. The only thing he ever attacked to meet with signal defeat was music. When a young man Dr. Piffard was seized by the then prevailing craze to play the banjo. Dobson or some other professor was advertising proficiency in six easy lessons. Piffard, entirely unaware of the important fact that he had little or no music in his soul, decided to court the "heavenly maid" in her guise of sheepskin and catgut. He called on the professor, bought an expensive instrument, took his first lesson, and started home with high hopes and a small music-book. The latter he read carefully, and doubtless committed to memory. The position of his fingers on the frets, as shown him by the professor, he practised through many spare hours for a week, and then went proudly to his second lesson, eager to show how much he had accomplished. The professor listened to his pupil's performance with an expression of sober surprise. Then seizing the banjo he strummed it for a few minutes and inquired: "Doctor, do you know what tune I am playing?" "No, I don't," said Piffard with perfect truthfulness. "Well, Doctor, there is no use in going any further. I just played 'Carry me back to Ole Virginny,' the tune you have been practising for a week—and will never learn. Now, I'll buy your banjo back for half price and charge you nothing for the lessons, provided you will never tell anybody that you were a pupil of mine."

## ENAMELLED STEEL WARE AND APPENDICITIS.

WE have been requested by Messrs. Oscar Moenich and Co., Limited, to publish the following note upon an action brought by Messrs. Baumann Brothers, manufacturers of "Lion and Mug" brand enamelled steel ware, in the Fourth Chamber of the Commercial Court at Leipzig on Dec. 22nd, 1910. The note says that an injunction was granted against a defendant—subject to a penalty of £50 for each contravention—to repeat or circulate the statement that splinters of enamel were the cause of appendicitis or other intestinal disorders. The defendant was also condemned to pay the plaintiff's costs, and the plaintiff was authorised to publish the court's decision within one month in an issue of the *Leipziger Neuesten Nachrichten* at the expense of the defendant.

*Admirer.*—We fear we can give no advice in the circumstances, which clearly are a matter for our correspondent's own discretion. A solicitor will advise him whether legal penalties would follow his suggested action; to us it certainly seems that they might. For the rest he must consider whether the action of his employer in breaking the understood relations between professional men, as he alleges to have been the case, justifies the employed in going back on his word.

*Inquirer.*—The general answer is that the practitioner cannot be bound in such a way. Obligations, however, may arise which he would find it morally and practically unable to neglect. Will our correspondent (of course in confidence) state any particular case in which he is interested?

*S. of Pendleton.*—If the writer desires comment on his communication he must furnish us with his name and address for our information.

*M.D., D.P.H. Camb.*—We will try to obtain further information for our correspondent.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, and April, 1911:—

March 23rd (Paris).—First Congress of French Medical Journalists.
" 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
" 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, March 15th, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Mar. 9 | 29·88 | S.W. | 0·12 | 82 | 49 | 37 | 42 | 42 | Raining |
| " 10 | 30·12 | W. | 0·04 | 89 | 51 | 35 | 37 | 38 | Fine |
| " 11 | 29·88 | S.W. | 0·06 | 53 | 47 | 38 | 41 | 42 | Raining |
| " 12 | 29·89 | W. | ... | 67 | 45 | 35 | 38 | 40 | Overcast |
| " 13 | 29·39 | N. | 0·47 | 83 | 44 | 34 | 34 | 37 | Cloudy |
| " 14 | 29·63 | N.W. | 0·09 | 84 | 45 | 34 | 34 | 36 | Cloudy |
| " 15 | 29·45 | N.W. | ... | 77 | 38 | 35 | 35 | 37 | Snowing |

**The following journals, magazines, &c., have been received:**—Archives of the Roentgen Ray, Journal of the Royal Institute of Public Health, Therapie der Gegenwart, Archives Internationales de Neurologie, Prince Alfred Hospital Gazette (Sydney), Bulletins et Mémoires de la Société de Radiologie Médicale de Paris, St. Paul Medical Journal, Military Surgeon, American Journal of Orthopedic Surgery, Hygiène de la Viande et du Lait, Revue de Chirurgie, Revue de Médecine, Annales des Maladies des Organes Génito-Urinaires, Midland Medical Journal, Journal of the Royal Army Medical Corps, International Journal of Surgery, Excelsior, Sunday Guardian, American Review of Reviews, Cleveland Medical Journal, Albany

Medical Annals, Monthly Cyclopædia and Medical Bulletin, Detroit Medical Journal, Archives of Pediatrics, Review of Neurology and Psychiatry, Proceedings of the Canal Zone Medical Association, Polyclinic, Medical Review, Knowledge, School Hygiene, The Photographic Monthly, Bio-Chemical Journal, British Journal of Dermatology.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

*Papers:*

Dr. W. Langdon Brown: An Enquiry into the Value of Rectal Feeding.

Dr. D. V. Cow: The Reaction of Arteries to Certain Drugs.

PATHOLOGICAL SECTION (Hon. Secretaries—Charles Bolton, J. C. G. Ledingham): at 8.30 P.M.

Mr. C. Gordon Watson: Case of Resection of Cæcum and Ascending Colon showing Chronic Hypertrophy of the Mucous Membrane with Stenosis Simulating Cancer.

Dr. Coats and Dr. Forbes: The Relation of the Meningococcus to Pseudoglioma.

Dr. Morgan: The Gall-bladder Lesion in the Typhoid-carrier Rabbit.

Dr. Andrewes: The Inhibition of Pigment production in B. Prodigiosus by B. Fæcalis Alkaligenes.

Dr. H. R. Dean: On the Relation of Specific Precipitation to Complement-fixation.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

*Cases:*

Dr. Langmead: (1) Achondroplasia; (2) Myopathy (Landouzy-Déjerine variety).

Mr. R. G. Hann: Multiple Exostoses.

Dr. J. D. Rolleston: Inherited Syphilis and "Blue Sclerotics."

*Papers:*

Dr. David Forsyth: The History of Infant Feeding from Elizabethan Days.

Dr. Milne: A Plea for the Home Treatment and Prevention of Measles.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

*Paper:*

Dr. W. H. Hamer: Typhoid Carriers and Contact Infection: Some Difficulties Suggested by Study of Recent Investigations carried out on "Living Lines."

**ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.**

MONDAY.—8 P.M., Prof. J. A. Fleming: Applications of Electric Heating. (Cantor Lecture IV.)

**CHELSEA CLINICAL SOCIETY, Chelsea Dispensary, Manor-street, King's-road, S.W.**

TUESDAY.—8.30 P.M., Annual Clinical Debate on the Treatment of Colitis (opened by Dr. J. W. Eyre on Some Points in the Bacteriology of Colitis and its Treatment by Bacterial Vaccines, and Mr. P. L. Mummery on the Surgical Treatment of Colitis). Followed by a General Discussion. Open to all members of the Medical Profession.

**MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.**

TUESDAY.—8.30 P.M., Mr. H. W. Gadd: How Far can the Abuse of Drugs be Prevented by Law?—Dr. Tunnicliffe: Patent Medicines.

**HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.**

WEDNESDAY.—8.30 P.M., Dr. D. Windle: The Respiratory Relationships of Pulsus Alternans.—Mr. R. Warren: Punctured Wounds of the Heart.

**CHILD STUDY SOCIETY, LONDON, 90, Buckingham-Palace-road, S.W.**

THURSDAY.—6.30 P.M., Annual General Meeting. 7.30 P.M., Mr. W. H. S. Garnett: Educational Possibilities of the Boy Scout Movement.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.**

TUESDAY.—5 P.M., Dr. A. F. Hertz: Sensibility of the Alimentary Canal in Health and Disease (Goulstonian Lecture).

THURSDAY.—5 P.M., Dr. J. M. Bruce: Clinical Study of Cardiovascular Regeneration (Lumleian Lecture).

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Mr. J. E. R. MacDonagh: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. L. Bunch: Some Common Skin Diseases in Children and their Treatment.

TUESDAY.—4 P.M., Dr. L. Smith: Clinique (Medical). 5.15 P.M., Lecture:—Dr. S. R. Wells: Angina Pectoris.

WEDNESDAY.—4 P.M., Mr. G. E. Waugh: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. H. Savage: Morbid Mental Growths.

THURSDAY.—4 P.M., Dr. E. Cautley: Clinique (Medical). 5.15 P.M., Lecture:—Dr. G. J. Herman: Endometritis.

FRIDAY.—4 P.M., Mr. S. R. Scott: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. Dr. Simson: Diseases of Women. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Minor Surgery.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: Retention of Urine.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Dr. Simson: Gynæcological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Mr. Bidwell: Minor Surgery.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Minor Surgery.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.**

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: Early Manifestations of the Gouty Habit.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4.30 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir William Bennett.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

**HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.**

TUESDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Knee Joint, Ankle Joint, and Tarsus. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Dr. Still: Some Affections of the Newborn.

FRIDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Inflammations of the Elbow Joint, Pulled Elbow, Bicipital Bursitis. (Special Post-Graduate Course.)

**ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.**

THURSDAY.—3 P.M., Prof. A. Keith: Giants and Pygmies. (Lecture II.)

FRIDAY.—9 P.M., Sir David Gill: The Sidereal Universe.

SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Radiant Energy and Matter. (Lecture IV.)

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY.—3.30 P.M., Dr. P. Jakins: A Special Clinical Demonstration of Interesting Cases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. L. Paton: Eye Symptoms in Disseminated Sclerosis.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Cerebellar Disease.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Treatment (Therapeutical).

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Some Chronic Affections of Joints. (Post-Graduate Clinic).

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (22nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (23rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**SATURDAY** (25th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

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# The Milroy Lectures

ON

# ANKYLOSTOMA INFECTION.

*Delivered before the Royal College of Physicians of London on March 2nd, 7th, and 9th, 1911,*

BY A. E. BOYCOTT, M.A., D.M. OXON.,
LECTURER ON PATHOLOGY, GUY'S HOSPITAL.

## LECTURE II.[1]

*Delivered on March 7th.*

### THE DIAGNOSIS OF ANKYLOSTOMA INFECTION.

MR. PRESIDENT AND GENTLEMEN,—In the presence of well-marked anæmia, the only essential in the diagnosis of ankylostoma infection is that the possibility of a parasitic anæmia should be in one's mind. The disease was long unrecognised in Cornwall because it never occurred to anyone that it might be ankylostomiasis; it might, indeed, with some luck have gained a footing in medical literature as "Dolcoath anæmia," the chief characteristics being that it was confined to men working underground and that it was completely refractory to iron and arsenic. One case, at least, whose chief symptoms were dyspnœa and palpitations, went through the hands of several London consultants, whose opinions varied between dyspepsia and cardiac neurosis. Directly the idea that ankylostoma might be at the bottom of the matter occurred to anyone—in the present instance, to J. S. Haldane—the stools were examined and found to be full of eggs, and so the mystery was cleared up. In the same way in Porto Rico in 1899 one-third of 36,000 deaths were due to "anæmia," which was supposed to be caused by poor food and unhygienic conditions; it was only towards the close of that year that Ashford found that the condition was constantly associated with an eosinophilia, was by this led to examine the fæces, and so demonstrated that this enormous mortality was due to ankylostomiasis. The fact that the parasite occurred in the Southern United States had been known to the curious for a long time before Stiles in 1901 drew attention to the fact that it was the cause of serious endemic disease among the whole agricultural population.

In definite cases of ankylostomiasis there is no difficulty in making the definitive diagnosis of ankylostoma infection. The eggs are quite different from those of any other human parasite and occur in the stools in large numbers. If confusion arises, it is generally from some of the vegetable remains which one finds with all sorts of queer objects (mites, snails' tongues, &c.) in fæces. It is, however, obvious that it is not always easy to decide whether all or some of the illness in any given case of infection is due to the worm. This is especially difficult where, as, for example, in Assam, nearly all the natives are infected, and other diseases, such as malaria and kala-azar, are common enough. Quite recently, for example, Noc[2] has pointed out that in Cochin-China the difficulties of estimating the share of ankylostoma in causing illness are such that he inclines to the view that the parasite has a considerable share in producing "beri-beri." In Cornwall the chief source of difficulty in this connexion is miner's phthisis, the symptoms of which are by no means always free from ambiguity. The effect of anthelmintic treatment is the most useful test.

### METHODS OF DETECTING EGGS IN FÆCES.

The difficulties of diagnosis are, however, considerable when infection is slight and no obvious anæmia is present. Accurate examination of the blood by the Haldane-Gowers hæmoglobinometer may be of assistance. With apparently healthy adult males any reading below 85 per cent. should excite suspicion. As a rule, plenty of eggs will be found in the fæces of even slightly anæmic cases and in many of those who have their full quantum of hæmoglobin. If few worms are present the discovery of eggs may be very difficult. Such a condition occurs especially in persons who have received specific treatment and from whom it is desired to expel absolutely every worm. In the ordinary way fæces are examined microscopically for eggs by smearing up a small piece, with the addition of water if necessary, into a sufficiently thin film on a glass slide. In the cases we are considering eggs will be found in such a preparation only by luck, and many infected stools will be passed as normal. Most of the fine mud can be removed by emulsifying a piece of fæces of the size of a nut and vigorously shaking up with water in a test-tube three-parts full. After standing for ten minutes all the eggs have fallen to the bottom and most of the supernatant fluid can be poured off. By repeating this process three or four times any eggs present can be obtained mixed only with the larger fragments, and the chance of finding them is very much better. Still further separation can be effected, as in Bass's method,[3] by taking advantage of the specific gravity of the eggs (about 1100). By washing with a solution of calcium chloride of specific gravity 1050 (12 per cent. hydrated salt) two or three times after washing with water, a good deal of light material can be got rid of, and by subsequently adding calcium chloride of specific gravity 1250 (55 per cent.) the eggs can be floated to the top and so separated from the crystals and heavy débris. Centrifugalisation saves time. Thus in one series of 315, 79 (25 per cent.) infections were found by direct examination and 38 more (12 per cent.) after washing.

The most accurate method of finding a few eggs appears to be cultivation and discovery of the larvæ. A convenient method of procedure is as follows. In the bottom of an ordinary 4 in. Petri dish make a pile of circular pieces of blotting paper about 2½ in. wide and ¼ in. high. Fill the dish with water nearly up to the level of the top of the papers and cover the island of paper with a thick layer of the fæces; incubate at 30°–36° C. for from five to seven days. When the larvæ hatch they swim away from the fæces into the water, which remains almost clear, and by centrifugalisation two or three can be found without much difficulty.

At the International Congress on Industrial Diseases held at Brussels in September, 1910, Bruns, who is in charge of the laboratory work in connexion with ankylostomiasis in the Westphalian coal-field, stated that of men with slight infections only 40 per cent. were diagnosed by direct microscopic examination, 55 per cent. by microscopic examination after gravity separation of the eggs, and 99 per cent. by the method of culture. This means that of every 99 men found infected by the culture method only 55 were diagnosed by microscopical examination, and that with every 99 positive by culture one case occurred which was negative to culture and positive to microscopic examination. There is no evidence to show how many cases of infection were not revealed by any of the methods. It is well known that some samples of stools are so noisome that the eggs will not hatch in them, so that the culture method cannot be regarded as infallible, though it is undoubtedly the best process available under all circumstances.

Other sources of error arise from the fact that the stools of an infected person may contain no eggs. It has already been pointed out that in experimental infection a period of from seven to ten weeks elapses after larvæ have entered the body before eggs are found in the stools.[4] Taking the shorter period as that which would most probably apply to large natural infections, there is therefore a considerable time after infection when examination of the fæces will necessarily prove negative. Eggs will also be absent if only male worms are present in the bowel;[5] it is inconceivable that under these circumstances enough worms should be present to cause any material illness, and such individuals are of course innocuous to others. It is also a matter of fairly common experience that eggs may not be found for a few days after anthelmintic treatment, but may reappear a week or two later. It is possible to explain these cases by an assumption that the eggs which ultimately appear have been laid by worms which were not fully developed and had not reached the intestine when treatment was administered. But in many instances so recent a reinfection can be excluded with considerable certainty, leaving only the usual and reasonable explanation that the shock of anthelmintic drugs temporarily paralyses oviposition.

Another source of failure to find eggs in the fæces produced for examination by an individual suspected of infection has been introduced along with schemes of compulsory examination and treatment which have for their object the

[1] Lecture I. was published in THE LANCET of March 18th, p. 717.
[2] Annales de l'Institut Pasteur, vol. xxii., 1908, pp. 896 and 955.
[3] Hookworm Disease, 1910, p. 175.
[4] Lambinet (Deutsche Medizinische Wochenschrift, 1904, p. 1848) showed that with *Ankylostoma caninum* in dogs the interval is only three weeks. Is the rate of development of the parasite proportional to the rate of metabolism (duration of life) of its host?
[5] A single male ascaris is not infrequently found post mortem.

exclusion of infected persons from certain places—e.g., the underground workings of a mine. If such procedures prove objectionable—as in fact they do—it is obvious that fæces which contain no ankylostoma eggs are likely to become an article of commerce, and it has actually occurred in the coal-fields of Belgium and Westphalia that infected workmen have presented for examination stools which were passed by somebody else. Hence policemen were set to supervise the personal production of samples for examination.

While, therefore, in many cases the diagnosis is simple enough, there are a good many circumstances which render the examination of fæces fallacious. These are especially frequent when infections are relatively slight and become of considerable practical importance when it is sought to establish some system of quarantine.

### EOSINOPHILIA.

The only point on which a diagnosis might be made in the first two or three weeks after infection is the skin eruption which marks the entrance of the larvæ. In characteristic cases and under conditions of exposure to infection a diagnosis might well be based on this alone, sufficiently positive, at any rate, to justify precautionary measures of quarantine. During the next four or five weeks examination of the blood may be of the greatest assistance. Most cases of ankylostoma infection show a considerable increase in eosinophile leucocytes in the circulating blood, and this increase is definitely perceptible about three weeks after infection. The following table shows the results of blood examinations made after experimental infections by the skin (Dr. Leathes) and by the mouth (myself):—

| *Skin Infection.* | | *Mouth Infection.* | |
|---|---|---|---|
| Days after infection. | Eosinophiles per cent. | Days after infection. | Eosinophiles per cent. |
| 0 | 2·0 | 0 | 3·4 |
| 14 | 7·4 | 8 | 2·6 |
| 21 | 3·0 | 14 | 10·0 |
| 27 | 14·4 | 36 | 24·0 |
| 43 | 13·4 | 41 | 33·6 |
| 44 | 20·8 | 48 | 40·4 |
| 48 | 35·6 | 55 | Eggs found. |
| 50 | Eggs found. | | |
| 52 | 44·8 | | |

In neither case was the slightest illness produced beyond the most trivial abdominal discomfort. Eggs were very few and far between, and it was only by prolonged examination of thoroughly concentrated samples that they were found at all. Indeed, in my own case daily examinations gave negative results about two days out of three, and both cases would, I am sure, have been, except by accident, passed as free from infection after examination of the ordinary film of unwashed fæces. It will be seen that by a fortnight or three weeks after infection the blood was obviously abnormal; eggs were not found till more than seven weeks had elapsed. Bruns and Müller[6] after experimental skin infection found 5 per cent. eosinophiles after three weeks, 10 per cent. after four weeks, and 25 per cent. after five weeks, eggs being found on the fifty-third day.

The facts which have been ascertained with regard to the general correlation of an eosinophilia with ankylostoma infection are as follows. Of 148 infected men in Cornwall (*A. duodenale*) the percentage of eosinophiles in a differential count of 500 leucocytes on a stained blood film varied between 3 and 73 per cent.: 5 had less than 5 per cent., 4 between 5 and 7 per cent., and 139 showed more than 8 per cent., of whom 123 had more than 10 per cent. and 49 more than 20 per cent.; the average of the whole number was 18·2 per cent. Experience shows that anything over 8 per cent. can be called a definite eosinophilia, figures between 5 and 8 per cent. being suspicious, but not necessarily abnormal. The most marked reaction seems to occur in young people who have been only recently infected and may not have become anæmic at all.

| No. | Age. | History. | Hæmoglobin. | Leucocytes. | Eosinophiles. | |
|---|---|---|---|---|---|---|
| | | | Per cent. | Per mm.³ | Per cent. | Per mm.³ |
| 1 | 23 | 1 month. | 80 | 56,000 | 66·2 | 37,000 |
| 2 | 18 | 6 months. | 98 | 20,600 | 56·2 | 11,500 |
| 3 | 17 | 6 ,, | 50 | 44,000 | 72·7 | 32,000 |

[6] Münchener Medicinische Wochenschrift, vol. lii., 1905, p. 1484.

In such cases there is a veritable eosinophile leucocytosis comparable to that which occurs in trichinosis. In cases of longer standing the number of eosinophiles may be much less, and in cases which have reached a severe degree of anæmia may be even less than normal. No marked examples of this were observed in Cornwall, but the careful work of Ashford with *A. americanum* shows clearly that the responsivity of the marrow may be depressed or almost destroyed by long-continued severe anæmia. Thus in one series[7] 21 per cent. had less than 5 per cent., and only 61 per cent. more than 8 per cent., all the patients having less than 50 per cent. hæmoglobin. In another series of severely anæmic cases 40 per cent. had less than 8 per cent. eosinophiles when first seen. An absence of eosinophilia was found in Porto Rico to indicate a bad prognosis. Dealing with men who were not anæmic, Bruns[8] in Westphalia, with *A. duodenale*, found 8 per cent. with less than 5 per cent. eosinophiles and 84 per per cent. with more than 8 per cent., the corresponding figures for Cornwall being 3 per cent. and 94 per cent., though the two series are not directly comparable since in Westphalia the men under examination had been treated on one or more occasions. In Belgian coalminers, Herman and Dascotte[9] found less than 5 per cent. in 18 per cent. of 200 cases, and over 8 per cent. in 65 per cent. Unless the reaction to *A. americanum* is altogether different from that with *A. duodenale*—and the Porto Rico results are against this supposition, the vast majority of worms there being *A. americanum*—the blood-counts of Dock and Bass[10] are inexplicable. In 693 infected persons the count gave less than 5 per cent. in 481 (69 per cent.), the average being 4·1 per cent. Most of the cases were very mild.

The effect of treatment on the eosinophilia is very irregular. In the majority of cases, starting with a marked eosinophilia, the leucocytes gradually come to normal or thereabouts as the worms are expelled and the patient recovers. In very anæmic persons treatment may produce an eosinophilia which subsequently declines. In others, again, the eosinophilia may persist long after all worms have been destroyed. The following examples illustrate these points:—

| CASE I. | | | CASE II. | | | CASE III. | | |
|---|---|---|---|---|---|---|---|---|
| Date. | Hb. %. | Eosin. %. | Date. | Hb. %. | Eosin. %. | Date. | Hb. %. | Eosin. %. |
| May 8th ... | 33 | 16·8 | May 12th... | 20 | 0·8 | Oct., 1902 ... | 48 | 16·0 |
| ,, 16th ... | 36 | 22·4 | ,, 19th... | 28 | 4·8 | Nov., ,, ... | 43 | 18·0 |
| ,, 23rd ... | 38 | 16·4 | ,, 26th... | 38 | 6·8 | Aug., 1903... | 64 | — |
| June 13th ... | 56 | 14·8 | June 9th... | 41 | 4·0 | Dec., ,, ... | 92 | 14·8 |
| ,, 27th ... | 67 | 8·8 | ,, 30th... | 55 | 21·2 | Feb., 1904 ... | 96 | 13·4 |
| July 11th ... | 76 | 6·0 | July 7th... | 67 | 12·2 | May, 1905 ... | 95 | 11·2 |
| ,, 25th ... | 83 | 4·8 | ,, 21st... | 82 | 9·6 | | | |
| Aug. 15th ... | 101 | 8·8 | Aug. 4th... | 90 | 2·2 | | | |

The third case shows particularly well how a marked enosinophilia may persist for at least two years after expulsion of the worms. The man had been dosed several times, and repeated search failed to reveal any eggs. We examined also in Cornwall four men who had given up underground work some years previously, and in whose stools no eggs could be found; their blood showed an eosinophilia of from 11 to 22 per cent.

Eosinophilia, therefore, is of no value in gauging the results of treatment or in ascertaining whether the worms have died out from an infected person. But under certain circumstances it may be of considerable help in diagnosis. It is, in the first place, obvious that other causes of eosinophilia must be absent, or at any rate infrequent. The causes of eosinophilia other than ankylostoma are: (1) true paroxysmal asthma; (2) pemphigus and the bullous eruptions of the dermatitis herpetiformis group; (3) other animal parasites—i.e., bilharzia, ascaris, oxyuris, trichina, filaria, and tænia.[11] Of these bilharzia and trichina alone give a marked eosinophilia with anything like the regularity seen in ankylostoma infection. Trichocephalus,[12] by far the commonest

[7] American Medicine, vol. vi., 1903, p. 391.
[8] Münchener Medicinische Wochenschrift, 1905, No. 6.
[9] Bulletin de l'Académie Royale de Médecine de Belgique, vol. xxii., 1908, p. 75.
[10] Hookworm Disease, 1900, p. 180.
[11] Journal of Hygiene, vol. iv., 1904, p. 466.
[12] Ibid., vol. v., 1905, p. 278.

intestinal worm in this country, gives no definite reaction. The data recently collected by Schloss [13] show the frequency with which worm infections cause eosinophilia in children in the United States :—

| Worm. | Number of cases. | Eosinophilia. | | Highest eosin. count. |
|---|---|---|---|---|
| | | Over 8%. | Over 10%. | |
| Trichocephalus... ... ... | 31 | 0 | 0 | 6·4 |
| Oxyuris ... ... ... ... | 23 | 5 | 3 | 14·0 |
| Ascaris... ... ... ... ... | 6 | 2 | 0 | 9·2 |
| Hymenolepis ... ... ... | 20 | 7 | 4 | 22·6 |
| Tænia saginata ... ... | 3 | 2 | 1 | 13·2 |
| Total ... ... ... ... | 83 | 16=19% | 8=10% | — |

In 83 infections, therefore, only 16 (19 per cent.) had a definite eosinophilia. Blood examinations are, however, not much use for diagnostic purposes in places such as the tropics, where worms are very prevalent, except in so far that the absence of an eosinophilia in a reasonably robust subject may be taken to exclude ankylostoma infection with a fair degree of certainty. But in this country the method is of great practical utility. Worm infections are not common, and as a matter of ascertained fact eosinophilia is distinctly rare in the general population. To investigate this point blood films were obtained from 158 underground workers in uninfected coal, lead, and tin mines, and from surface workers at Dolcoath. Their differential counts contrasted with those of Cornish miners infected with ankylostoma were as follows :—

| Percentage of eosinophiles. | Infected miners. | | Non-infected miners. | |
|---|---|---|---|---|
| Less than 1 per cent. ..... | 0 | | 29 | |
| 1 per cent. ..... | 0 | | 49 | |
| 2 ,, ..... | 0 | 3·4% | 32 | 91·2% |
| 3 ,, ..... | 4 | | 23 | |
| 4 ,, ..... | 1 | | 11 | |
| 5 ,, ..... | 2 | | 5 | |
| 6 ,, ..... | 1 | 2·7% | 5 | 7·0% |
| 7 ,, ..... | 1 | | 1 | |
| 8 ,, ..... | 7 | | 1 | |
| 9 ,, ..... | 9 | | 0 | |
| 10 ,, ..... | 40 | | 0 | |
| 15 ,, ..... | 34 | 93·9% | 0 | 1·8% |
| 20 ,, ..... | 22 | | 1 | |
| 25 ,, ..... | 8 | | 1 | |
| More than 30% ..... | 19 | | 0 | |
| Total examined ..... | 148 | | 158 | |
| Average eosinophiles % ..... | 18·2 | | 2·5 | |

The figures for infected miners suggest that any figure above 8 per cent. may be regarded as indicative of infection. Of the three cases above this figure among the men not infected with ankylostoma, one (8·4 per cent.) had trichocephalus and oxyuris, the other two (23·8 and 25·6 per cent.) trichocephalus and ascaris; all three came from Levant mine, where worm infections are very common.

In holding an inquisition for ankylostoma this method of examination is therefore very useful. It is easy to obtain blood films from the men, and any question of fraud is excluded. I do not know what sort of response one would obtain if one descended on some mine in this country where the terrors of ankylostoma were unfamiliar, and asked 100 men to produce samples of fæces for examination, but I imagine that at any rate a great deal of time would be consumed before such an examination was complete. The same number of men can be examined by the blood film method in a few hours. It is quite unnecessary to count all the films; after a little practice the obviously negative and positive cases can be separated by a short inspection of the slide. As a further proof of the pudding, I give the results of a search recently conducted, in conjunction with Cadman, in likely places for ankylostoma. Films were obtained from a good proportion of men working underground in hot and wet mines; samples of fæces were subsequently obtained from any cases showing more than 8 per cent. eosinophiles.

[13] American Journal of the Medical Sciences, vol. cxxxix., 1910, p. 675.

| Locality of mine. | Number of men examined. | Number positive. |
|---|---|---|
| Midlothian ... ... ... | 94 ..... | 1 : 15% : Trichocephalus. |
| Fife ... ... ... ... ... | 89 ..... | 0 |
| Fife ... ... ... ... ... | 24 ..... | 0 |
| Lancashire ... ... ... | 22 ..... | 0 |
| Yorkshire ... ... ... | 57 ..... | 0 |
| South Wales... ... ... | 120 ..... | 0 |
| ,, ,, ... ... ... | 52 ..... | 0 |
| ,, ,, ... ... ... | 52 ..... | 1 : 9·5% : Trichocephalus. |
| Isle of Man ... ... ... | 109 ..... | 2 : 11% Trichocephalus; 24%; man disappeared. |

In all, then, of 619 men, four showed an eosinophilia; on further inquiry none of these had ankylostoma. The method is particularly useful in an inquiry for latent infection, since the reaction is best marked in the young and lusty who are not anæmic—the people, that is, who are least liable to be suspected of infection; and, as pointed out above, it may be very well marked in extremely slight infections, appearing in a recognisable form after infection several weeks before there is any chance of finding eggs in the stools. It is possible that precipitin and Bordet-Gengou reactions may prove of service in diagnosis as they have in other worm infections.

## THE CONDITIONS WHICH DETERMINE THE PREVALENCE OF ANKYLOSTOMA INFECTION.

One has learned so much in recent years about the direct transmission of pathogenic parasites from host to host, that one recognises something exceptional in the case of ankylostoma, where the chief circumstances which influence development outside the body are those which condition the prevalence of infection in man. Some parasites, such as the gonococcus or spirochæta pallida, have no life outside the bodies of their special host; others, as trypanosomes, malaria organisms, and cestode worms, oscillate between two different animal hosts; others, again, though apparently capable of no inconsiderable saprophytic life, like the diphtheria bacillus, the typhoid bacillus, or the meningococcus, depend in the main on living animals for the continuance of their existence; organisms which have an active, proliferative, saprophytic life, such as the tetanus bacillus, are now known to be in the minority among the infective agents of important human diseases. In ankylostoma, on the other hand—and the same is, of course, true of the other common nematode parasites ascaris and trichocephalus—the saprophytic phase is of fundamental importance. Since the eggs cannot develop during the parasitic phase, since they cannot again enter the parasitic phase till they have become definitive ("encapsuled") larvæ, and since the larvæ cannot become sexual and multiply without changing the saprophytic for the parasitic phase, it is obvious that the conditions which determine, in the saprophytic phase, the development of the eggs into larvæ are as fundamental to the propagation of ankylostoma as is the existence of a host in which a multiplication of individuals takes place. Its existence in nature is to ankylostoma what the mosquito is to the malarial parasite, or *Limnæa truncatula* to the liver fluke. The influence of various physical circumstances on the life of ankylostoma may be grouped under the following heads :—

1. *Oxygen.*—A free supply of oxygen is necessary for the growth of the embryo, and in its absence the eggs do not hatch and die in a few days. Eggs, therefore, cannot possibly hatch in the intestine. They will very rarely hatch if they are covered in an open dish with a layer of ordinary tap water about an inch deep, though this contains oxygen to begin with and does not offer any great obstacle to diffusion. Even if the water is stirred by bubbling hydrogen through it they seldom hatch, though a fair proportion develop if a good stream of air is kept passing through the liquid. Eggs, therefore, will not hatch if fæces are passed into a good volume of water, nor will those in the interior of fæcal masses make much progress. The eggs are not, however, killed by deprivation of oxygen in less than about 10 days; at low temperatures they would probably survive longer. The young larvæ, as might be expected, also require a free supply of oxygen while they are growing rapidly, though they thrive well in water, but when they become full grown and encapsuled they develop some of the remarkable anaerobic capacities shown by adult intestinal worms, and apparently derive the energy required for their very active movements by fermentation rather than by direct oxidation, as shown by

Weinland in his study of the metabolism of adult ascaris.[14] At this stage they will live for at least two or three weeks, wriggling about all the time, in hydrogen or nitrogen at room temperature; in parallel experiments at 37° C. they died in about 24 hours.

2. *Moisture.*—At any stage of development from egg to encapsuled larvæ desiccation at ordinary temperature is very soon fatal. Hence some degree of wetness in the place where infected fæces are deposited is necessary for the development of infectivity. Ankylostomiasis never prevails very extensively in dry places. In this connexion it should be remembered that really dry districts are uninhabitable, and that the holes and corners in which fæces are apt to be deposited in nature are liable from their situation to be rather specially damp, if only because they are sheltered and evaporation hindered. The influence of vegetation in preventing the surface of the earth from drying is of considerable importance. Thus in Porto Rico the sugar fields are not nearly so heavily infected as coffee and banana plantations. The former are ploughed up every year and the surface is freely exposed to the sun after the crop is harvested, while the coffee bush itself produces shade and in its turn is always shaded by some other tree. The ground beneath banana plants is densely shaded, and the mass of decomposing leaves and stalks remains wet for a long time after rain, and forms an ideal medium for the protection of the larvæ.

In mines the influence of moisture is equally well marked. The rise and progress of ankylostoma infection to the proportions of a serious epidemic in the Westphalian coal pits followed the introduction of watering the roads to prevent dust explosions. The following figures show how the prevalence of infection increased, watering being begun in the last six months of 1899:—

| Year. | Number of collieries infected. | Number of cases reported. | Cases per 10,000 miners working. |
|---|---|---|---|
| 1896 ..... | 15 ..... | 107 ..... | 6·4 |
| 1897 ..... | 31 ..... | 113 ..... | 6·2 |
| 1898 ..... | 23 ..... | 99 ..... | 4·9 |
| 1899 ..... | 26 ..... | 94 ..... | 4·4 |
| 1900 ..... | 40 ..... | 275 ..... | 11·7 |
| 1901 ..... | 63 ..... | 1030 ..... | 40·6 |
| 1902 ..... | 66 ..... | 1355 ..... | 52·9 |

Active measures against the disease were commenced at the end of 1902, when a careful survey revealed about 18,000 infected men (9·1 per cent.). The gold mines in South Africa are almost quite dry, and though about half the native labourers working underground are already infected when they first come to work there is no evidence that infection tends to spread, and there have been few, if any, cases of the white miners acquiring the disease there. In Cornwall all the mines are more or less wet, but those which have a considerable proportion of dry roads and galleries are among the less heavily infected. Many coal pits in this country are too dry for the development of the larvæ. The recognition of the importance of coal-dust in the causation and propagation of underground explosions may, however, lead to the introduction of water sprinkling, with the result that in this respect conditions may become favourable. The alternative plan of having "dustless zones" on the roads is much to be preferred from the present standpoint.

3. *Temperature.*—The effect of cold is not altogether certain. My own experience is that the eggs die if kept for a few days near freezing temperature, and Stiles and Bruns[15] obtained the same result. Bruns also found that freezing kills the larvæ in an hour or two. Oliver,[16] on the other hand, finds that infected fæces may be frozen and the eggs still remain capable of hatching, and that larvæ may be buried in snow for six days without necessarily losing their vitality. The lethal effects of high temperatures on eggs and larvæ are well shown in Bruns's experiments. (Next table.)

Fæces in nature can hardly become heated as high as 48° C. (118° F.) unless they are at the same time being dried. It may occasionally happen that so hot a place occurs underground with an atmosphere saturated with moisture; such would be of no practical importance since men could not work there.

*Effect of Heat on Eggs.*

| Temperature. | Duration of heating in minutes. | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 5 | 10 | 15 |
| 47° Centigrade. | + | + | + | + | + | + |
| 48° ,, | + | + | + | + | + | + |
| 49° ,, | + | + | + | + | − | − |
| 50° ,, | + | + | + | − | − | − |
| 51° ,, | + | + | + | − | − | − |
| 52° ,, | + | + | − | − | − | − |
| 53° ,, | + | − | − | − | − | − |
| 55° ,, | + | − | − | − | − | − |
| 58° ,, | − | − | − | − | − | − |
| 60° ,, | − | − | − | − | − | − |

+ = Eggs subsequently developed into encapsuled larvæ.
− = No development.

With encapsuled larvæ Bruns obtained the following results:—

| Temperature. | | Temperature. | |
|---|---|---|---|
| 48° Centigrade... | Alive after 30 min. | 53° Centigrade... | Dead after 2 min. |
| 49° ,, ... ,, | ,, | 54° ,, ... ,, | 1 ,, |
| 50° ,, | ... Dead after 20 min. | 55° ,, ... ,, | 1 ,, |
| 51° ,, ... ,, | 5 ,, | 56° ,, ... ,, | 1 ,, |
| 52° ,, ... ,, | 3 ,, | 60° ,, ... ,, | 1 ,, |

Experiments in which the eggs and larvæ are kept continually at the same temperature show, however, that a less degree of heat is distinctly detrimental. At 36°–38° C. (97°–100° F.) the eggs often die without hatching; a few larvæ generally hatch out in about 24 hours and as a rule rapidly die away, only a very few surviving to the infective stage. Encapsuled larvæ which have been reared at a lower temperature have, in my experience, always died in a few days at 37° C., though they will live under the same conditions at room temperature for more than a year. The further development which they undergo when they gain entrance to the human body must be associated with a change in their temperature relations. Conditions probably seldom occur in nature which would make these facts of great practical importance. If fæces are dried the eggs and larvæ are killed in any case; if they remain moist their temperature will be reduced by evaporation if the air is not too humid. There is no inhabited part of the world where a temperature approaching 98° F. prevails for any length of time associated with a high relative humidity; such a combination would hardly be compatible with human life.[17] In mines restricted areas of the workings may be as hot and wet, but this is very uncommon. In Levant Mine in Cornwall some of the deeper galleries have a temperature of 93° F. with saturated air. At Schamrock Mine, in Westphalia, Meyer found that 15 per cent. of men working at about 20° C. (68° F.) were infected; 56 per cent. between 20° and 25° C. (68°–77° F.) and only 28 per cent. between 25° and 29° C. (77°–84° F.); but it is difficult to be certain that all the other circumstances were identical.

At the lower end of the scale the development of ankylostoma is also definitely limited by temperature. I have twice succeeded in hatching eggs and growing the larvæ to the encapsuled stage in an incubator in which the temperature was generally 15·9° C. (60·6° F.) and never exceeded 17° C. (62·5° F.), but such experiments do not always succeed either as regards hatching of eggs or development of larvæ. The lowest point at which really free and full development of the majority of eggs is to be expected is placed by Bruns at 20° C. (68° F.), and this is in accordance with my own experience. The encapsuled larvæ live very well at 15° C.

The widest possible range of temperature is therefore 15° C. (59° F.) to 38° C. (100° F.), but the range which is suitable for the great majority of eggs to hatch and larvæ to develop and continue to live when they have reached the encapsuled stage is restricted to the interval between about 20° C. (68° F.) and about 32° C. (90° F.).

As might be expected, temperature has a marked influence on the rate of development. At 35° C. (95° F.) free larvæ

[14] Zeitschrift für Biologie, vol. xlii., 1901, p. 55.
[15] Klinisches Jahrbuch, vol. xii., 1904.
[16] THE LANCET, Feb. 5th, 1910, p. 357.
[17] Journal of Hygiene, vol. v., 1905, p. 494; Journal of Pathology, vol. xiii., 1909, p. 62.

may appear in 24 hours and encapsuled larvæ in four days; at 16° C. (61° F.) the eggs take three to seven days to hatch and encapsuled larvæ may not be present for a fortnight. Taking all the circumstances into consideration we should suppose that the optimum temperature for the saprophytic phase of ankylostoma is somewhere about 27° C. (80° F.).

These experimental observations are fully in accordance with the observed epidemiological facts. The annual isotherms of 16° C. (61° F.) mark fairly accurately the limits of the distribution of infection of an epidemic degree about the world. Thus the disease is prevalent in the Southern but not in Northern United States, in Spain and Italy but not in France or Germany, in Queensland but not in Victoria. For obvious reasons the correspondence cannot be expected to be very exact, but we should expect that infection might be extensive anywhere where the mean annual temperature was over 60° F., while in cooler climates nothing beyond sporadic cases would occur. The following table shows the mean monthly and annual temperatures for a number of places in which infection does and does not occur. Thus the West Indies (represented by Trinidad), Assam (Calcutta), and the Southern States (Georgia) are all notorious foci; in Queensland (Brisbane) there is widespread infection, and a considerable amount of ankylostomiasis occurs in Italy[18] (Naples). In Victoria (Melbourne), on the other hand, the disease is not known, nor does it occur in the Northern States (Chicago), nor among the general population in France, Germany, or England.

*Mean Monthly Temperatures* (°*F.*).

| — | Infected. | | | | | Not infected. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Trinidad. | Calcutta. | Brisbane. | Georgia, U.S.A. | Naples. | Melbourne. | Scilly Isles. | London. | Paris. | Chicago. | Berlin. | Aberdeen. |
| January ... ... | 76 | 65 | 77 | 44 | 47 | 67 | 46 | 38 | 36 | 23 | 31 | 38 |
| February ... ... | 75 | 70 | 76 | 47 | 49 | 67 | 46 | 40 | 38 | 25 | 32 | 38 |
| March ... ... | 77 | 79 | 74 | 56 | 51 | 65 | 46 | 42 | 43 | 35 | 37 | 40 |
| April ... ... ... | 79 | 85 | 70 | 63 | 57 | 60 | 49 | 48 | 50 | 46 | 46 | 44 |
| May ... ... ... | 79 | 85 | 64 | 72 | 64 | 54 | 52 | 54 | 55 | 57 | 55 | 48 |
| June ... ... ... | 79 | 84 | 60 | 78 | 71 | 50 | 57 | 60 | 62 | 66 | 62 | 54 |
| July ... ... ... | 78 | 83 | 58 | 80 | 76 | 48 | 61 | 63 | 65 | 72 | 65 | 57 |
| August ... ... | 78 | 82 | 60 | 79 | 76 | 51 | 61 | 62 | 64 | 71 | 63 | 56 |
| September ... | 79 | 82 | 65 | 75 | 71 | 54 | 59 | 58 | 58 | 64 | 57 | 53 |
| October ... ... | 80 | 80 | 70 | 64 | 63 | 57 | 54 | 50 | 50 | 53 | 48 | 47 |
| November ... | 80 | 72 | 73 | 54 | 54 | 61 | 50 | 43 | 42 | 39 | 38 | 42 |
| December... ... | 77 | 65 | 76 | 47 | 49 | 65 | 47 | 39 | 37 | 29 | 33 | 38 |
| Annual ... ... | 78 | 78 | 69 | 63 | 61 | 58 | 52 | 50 | 50 | 48 | 47 | 46 |

It is pretty clear, then, that the disease does not gain a foothold under circumstances of temperature which experiment has shown to be not incompatible with the development of infective larvæ from the egg. Thus in this country it appears from the Greenwich Records for the 50 years 1841–1890, that the mean daily temperature is, on the average, over 60° F. on 71 days in each year, the mean maximum over 60° F. on 162 days, and over 70° F. on 85 days; the temperature exceeds 70° F. on 85 days, 80° F. on 14 days, and 90° F. on one day. In July, 1859, the thermometer rose above 80° F. on 21 days, and in July, 1868, on 20 days. As a matter of fact, if one leaves infected fæces in the open air in London in the summer one may after a time find encapsuled larvæ in them, though not in all samples. Oliver has observed the same thing in Newcastle. One would not expect to find ankylostoma rampant in this country owing to the effective control of fæcal contamination, but experience shows definitely that infection equally fails to spread in uncivilised countries of like climate. But such spread is not impossible. A certain number of cases have been known for many years to arise in the brickmakers[19] in the Cologne district, and there is at least one case where infection was acquired in New York by a boy who played in his father's brickyard in which were workmen who had brought the worm from elsewhere.[20] There does not seem to be any known infection in the neighbourhood of Chicago, although the summer there is very hot, and during the two months in which the mean monthly temperature is over 70° F. eggs would readily hatch and quickly develop into infective larvæ.

The only localities in North-Western Europe in which ankylostoma can thrive and make any headway are the underground workings of mines. Most mines are warm, and many hot, from a variety of causes. As pointed out by Haldane,[21] these high underground temperatures are due, in the first place, to the natural temperature of the earth, which increases with the depth from the surface by about 1° F. for every 60 ft. Thus the mean annual temperature on the surface in Cornwall is about 50° F., and the natural temperature of the rock at 1800 ft. is about 80°, and at the greatest depth at present reached in Dolcoath mine (500 fathoms = 3000 ft.) about 100°. As far as this source of heat is concerned the mines will go on getting hotter as they get deeper. A certain amount of heat is also produced by the men, animals, lights, and explosives underground, and the incoming air is warmed by compression as it comes down the downcast shaft. The most important source of the generation of heat underground is, however, the oxidation of the minerals as they are exposed to the air. There are good reasons for thinking that the chief process of this kind going on, both in coal and metalliferous mines, is the oxidation of iron pyrites. According to some, heat is also produced by the shearing and straining of the strata when they are disturbed and are capable, as in coal-pits, of a certain range of movement, but it is doubtful whether this possible source of heat is of any quantitative importance. On the other hand, the temperatures which would in this way be reached are actually diminished to a greater or less degree by the cooling effect of the ventilating current of air which operates partly by taking up heat from the rock and, which is more important, by evaporating water out of the workings. Hence the actual temperature of any place underground will, depth and other conditions being equal, depend largely on the volume of ventilation; the downcast shafts and intake roads will be cooler than the upcast shafts and return roads, and dead ends without any through ventilation will be especially hot. A mine may also be cooled a good deal by the percolation through the strata of surface water, which is ultimately pumped out from the bottom.

In considering the effect of underground temperatures on the propagation of ankylostoma, it is important to note that there is relatively little variation at different seasons of the year, except near the intake of fresh air.

In Cornish mines considerable areas of the underground workings are over 70° F. In Dolcoath mine, for instance, a good deal of the deeper galleries have a temperature between 75 and 80°, and in places where fresh rock is being opened up by tunnelling temperatures of 98° or thereabouts are not uncommon by reason of the high natural temperature of the virgin rock and the absence of any effective ventilation. In Levant mine, where the ventilation is very imperfect, the temperature where much of the work is now being done is over 80°, and in some places as high as 90°. In other mines, however, which are not so deep and better ventilated temperatures are much lower (60–70°). The temperature of coalpits in this country varies in the same way, and it is impossible to make any general statement on the point, if only because the temperature varies so much in different parts of the same pit. There is, however, no doubt that as far as temperature alone is concerned there are many places in British coal-pits where ankylostoma would get on very well. In their exhaustive report[22] on the ventilation of coal-mines Professor John Cadman and Mr. E. B. Whalley incidentally give a number of data relating to 43 collieries which were not selected as being particularly hot. In 30 temperatures of over 70° F. were observed, in 12 of which the thermometer recorded over 80°, and in 2 more than 90°. In another series of 20 collieries in North Staffordshire, temperatures over 70° were observed in 15, and over 80° in 5. In Westphalia in about two-thirds of the collieries the temperature is less than 70°.

[18] Of 1200 patients in the hospital at Pavia in 1909 Marti found 76 cases of ankylostomiasis.

[19] The temperature in such places may well be a good deal above the screen records in the neighbourhood.

[20] W. R. Stone: Medical News, vol. lxxxii., 1903, p. 680. A second case is recorded by H. Brooks, Medical Record, vol. lxxvii., 1910, p. 191.

[21] Report on the Health of Cornish Miners, Parliamentary Paper, Cd. 2091 (1904), pp. 93, ff.

[22] Royal Commission on Mines, Cd. 4551, 1909.

there is, as I am informed by Professor Cadman, a strong local feeling on the subject which has a most beneficial effect. The actual stink and nuisance is much diminished by the deodorising effect of the coal, and in searching for fæcal deposits in coal-pits one has to rely mostly on sight. In any case the bulk of fæces subsisting in exposed situations in a coal-pit at any moment will always be less than in a metalliferous mine owing to the relatively transitory nature of the exposed surface. At the working face the coal is excavated and removed very much more quickly in tons per man than is the granite or other hard rock which forms the matrix of most metalliferous deposits. As the coal is taken out, the roof is allowed to fall in and fill up the gap, and the men seem to make it a habit to defæcate in the "goaf" or "gob" in which the waste débris is stowed, and which will very shortly be shut off for ever from any further contact with human beings. Even the main roads which lead from the shafts to the working face are constantly being renewed; the floor tends to rise and the roof to fall, so that the surface has to be frequently cleaned up. In the hard rock of metalliferous mines, on the other hand, progress is much slower at the site of actual excavation, and the roads are practically permanent.[51] Hence fæces tend to accumulate as they do in communities of fixed abode; coal-miners enjoy some of the advantages of a nomadic people.

### Insanitary Conditions and Spread of Ankylostoma Infection.

One of the most striking examples of the influence of neglect of sanitary precautions on the spread of ankylostoma infection is afforded by the prevalence of the disease in the Southern United States. It is clear from the comprehensive observations of Stiles and many others[52] that ankylostomiasis is one of the most potent causes of chronic ill-health and inefficiency among the agricultural population in these parts. In the large cities it is limited to imported cases and those infected away from home. What is surprising to us is that the farming class should be so grossly filthy in their habits. Dock and Bass[53] state that in the country there are few privies, and such as there are are only used for shelter and convenience. The safe disposal of fæces is not considered and, owing to defective construction, pigs and fowls can root and scratch about among them and so scatter eggs around. They show by direct experiment that ankylostoma eggs can be fed to chickens and larvæ readily hatched from the eggs when they are subsequently p'ssed by the fowls. In this way infection might be disseminated very widely.[54] During wet weather fæces are liable to be washed out of the primitive shelters, which are, if possible, placed on a slope to keep them as dry as may be. About three-quarters of the rural population have not got a privy even of this inefficient sort. Any more or less retired place near the house is used by the adults, while of the rest of the family they say, "It is often possible to determine the number of children in a family by the number of piles of fæces in the backyard. ..... In small towns, where many country people come to market, there is often some near-by thicket, or gully, or barnyard to which the country people go when they get 'in a tight,' in preference to privies, to which they are unaccustomed even if they are available. The country people are more or less infected, and they thus convert these resorts into veritable hotbeds of hookworm larvæ. We remember such a 'gully' near a country town, and with our present knowledge we now see ample explanation of the ground itch and anæmia among many of the town boys, who often went barefoot in warm weather. The most favoured parts of the 'gully' were so much used for this purpose that there often seemed to be no more room. Many of the country schools are not provided with any sort of a privy." A lurid picture of the habits of a white population which is said to represent the purest breed of English that still survives. In Georgia, Wells[55] found about 24 per cent. of the total white population outside towns infected; of 280 school children 137, or 49 per cent., had the worm. Among university students from the Southern States 37, 42, and 37 per cent. have been found infected in different inquiries; among army recruits 60 and 88 per cent.; half the white population of Mississippi are infected, and in the cotton-mills 13 per cent. are ill enough to hinder their work.

### Conditions Favouring Infection by the Skin.

Besides the physical circumstances which prevail and the efficacy with which the disposal of fæces is carried out, a third group of circumstances which may materially influence the prevalence of ankylostoma infection is found in the degree to which the human skin is immediately accessible to the larvæ. Wearing boots is in many circumstances obviously a pretty complete protection, and to this no doubt Europeans owe their almost complete immunity when living in places in the tropics where the barefooted natives are infected to a man. Infection on the feet is doubtless the commonest mode of attack, and it is on the feet that "ground itch" and "mazamorra" characteristically occur. Boots are, of course, no great protection when the nature of the occupation brings the hands and arms into intimate contact with infected earth. Hence the special prevalence of infection among agriculturists in the tropics, and among brickmakers and miners in North-Western Europe. Cornish miners wear boots which are often leaky, thin canvas trousers, and some sort of vest or shirt, together with a hard hat. In the hotter places they usually work stripped to the waist. "Bunches" are somewhat rare on the feet, occurring most commonly on the arms and legs. It is obvious from looking at the men that they are liable to be smeared with mud all over their bodies while doing their work in the cramped quarters which they have underground. Hence one is not surprised at the occurrence of the skin lesions in any part. "Sat down on muddy stone last Thursday, and has bunches on left buttock which came out the same night," is a representative note.

Such are the conditions which determine the prevalence of ankylostoma infection. Three are of outstanding importance—moisture, temperature, and fæcal contamination of the soil, and to ensure the existence of the parasite in any place all three must be simultaneously favourable. In the tropics this coincidence is commonly found. In mines in North-Western Europe, on the other hand, infection is often rendered impossible because one of these three conditions is unfavourable. Fæcal contamination is, or at any rate has been, everywhere pretty extensive, and most mines of any size are in parts either hot enough *or* wet enough. But relatively few underground works are at the same time and place hot enough *and* wet enough to give the parasite a reasonably good opportunity. If conditions are not unfavourable, the intensity of prevalence, as measured by the proportion of persons exposed who are infected and the proportion of those who have a large enough infection to make them ill, will vary as the product, rather than as the sum, of the degree to which moisture, temperature, and fæcal contamination are coincidently suitable for the development of the increasing number of eggs which the soil receives as infection becomes more widespread and more intense among the human population. Thus, one may have every grade of prevalence, from the scattered cases which, as Iberer[56] has shown, occur among the general population in the south of Hungary to the universal infection subsisting in Porto Rico, just as in Cornish mines, which are rather cool and dry, only 10 per cent. of underground workers are infected and none are sick, while at least 95 per cent. harbour the worm in hot, wet workings and 5 per cent. are too ill to work.

[56] Münchener Medicinische Wochenschrift, June 9th, 1903.

[51] Dolcoath mine, for example, has been working continuously since 1799.

[52] The bibliography of American literature on "Uncinariasis" during the last three or four years has assumed gigantic proportions.

[53] Hookworm Disease, by G. Dock and C. C. Bass, 1910.

[54] Possibly also by flies. Galli-Valerio, Centralblatt für Bakteriologie, Orig., vol. liv., 1910, p. 194.

[55] Journal of the American Medical Association, vol. liv., 1910, p. 1852.

BIRMINGHAM GENERAL DISPENSARY.—From the committee's report it appeared that the receipts for the year amounted to £11,004 8*s.*, and that after meeting all expenses there remained a balance in hand of £196 17*s.* 9*d.* The increase in subscriptions was £211 8*s.* and the expenditure showed a decrease of £604. The total number of patients admitted by ticket was 58,757, and the average cost of patients was 3*s.* 4·1*d.* During the year 3693 dental patients had been treated and emergency cases treated without tickets numbered 1760, bringing up the total number of patients to 64,210.

# MYOSITIS OSSIFICANS TRAUMATICA.[1]

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MORE than three years ago, on Dec. 6th, 1907, I saw a youth, aged 18 years, who a month before, on Nov. 9th, had been kicked on the front of the thigh at football. He continued to play for three minutes though in bad pain. Swelling occurred the same day and bruising came out later. He kept his bed for one day, then was about for two days, after which he rested for ten days, whilst the limb was fomented and afterwards painted with tincture of iodine. He was then allowed to walk a little and massage was applied. When I saw him there was apparent a very large oval swelling on the front of the lower half of the thigh. It was symmetrical and very hard, except just above the patella, where it fluctuated, and there was only slight pain on movement. I told him to leave it alone, and he returned to Oxford, where he did ordinary walking. In February, 1908, he tried football three times, but had to give it upon account of pain and stiffness. Otherwise it was all right till Feb. 26th, when it suddenly became stiff and hard again, and when I saw him on Feb. 28th it was in appearance much as when I saw him in December, except that it was now hard all over. It was perhaps slightly smaller, but still measured 5 in. from above down, and reached to 1¾ in. above the patella. It was obviously fixed to the bone, and I then had a skiagram taken, which shows a large dark shadow corresponding to the tumour, which, it will be seen, is even larger behind than in front, and there is a still more defined shadow of laminæ of what appears to be bone on the front of the femur; for the most part these are parallel with the shaft, but tail off at the upper part into layers which slant obliquely towards the bone.

On March 8th I saw the patient again with the late Mr. Clutton, who showed me three or four skiagrams of similar cases, and told me of two which had been operated upon (one by himself) in which the operation distinctly did harm. I was therefore fortified in my opinion to leave him alone, and after six months he had no further trouble.

I saw the patient again in March, 1910. The lump had almost gone. But another skiagram shows that there was then a distinct flake of bone on the front of the femur fading off above into the surface of the shaft, but ending below in a sharp spicule. He now pays no further attention to the thing at all.

One object of bringing this case before the section is to point out that a very large swelling may without treatment diminish so much in size as almost to disappear and cause no further trouble or inconvenience. It should be remembered that the shadow in the earlier skiagram does not necessarily show the amount of the bony deposit at that time, as it would probably be, like early callus, transparent to the X rays. This being the case, and the experience at all events of some surgeons having been that removal has actually done harm, I would urge the advisability of leaving these swellings alone until ample time has been allowed, at least a year, for the absorption of what may be called provisional callus. Even after this time I think that removal would only be justified if the mass were causing mechanical inconvenience and pain. It must be remembered that the operation is inflicting another traumatism upon a part which for some reason has shown a special tendency to the development of bone, and it cannot therefore be surprising if renewed activity of the process should follow.

To support this proposition I have searched some of our museums for specimens of bone showing the results of such injuries, but I find that they are not numerous. By a curious coincidence, whilst I was being told that we have nothing of the sort in the Anatomical Museum at University College, the beadle brought in a fine example which he wished to exchange for a normal femur. It will be seen that it occupies a part of the bone from which both vastus externus and crureus arise. It is sharply outlined, suggesting that the periosteum had been stripped up over a limited area. Its surface is firmly granular and rough, contrasting with that of the vertically ribbed highly polished normal bone. It ends, like all the specimens, in a free point below.

In the Museum of the Royal College of Surgeons there are two femurs, No. 1911 and No. 1911, both Hunterian, showing similar plates of bone. In that of St. Thomas's Hospital is one in the crureus, and at St. Bartholomew's Hospital are three admirable specimens which, by the kindness of the authorities, I am permitted to show and of which I produce photographs. Two of these are much like my own specimen, but one is particularly interesting because it corresponds almost exactly with one removed by Mr. P. M. Heath, which is now in the Museum of the University College Hospital Medical School. This case was described by Mr. Heath in the Transactions of the Clinical Section of the Royal Society of Medicine.[2] It shows a large mass of bone, not smooth, like most of the others, but raised into deep, rounded, vertical ridges, looking, it must be owned, like a deposit in the muscular fibres of the vastus or the crureus. I suggest that this is only an earlier condition of that which the other specimens show, and that in time it would have been, in great part, absorbed and have left the smooth rounded swelling to which I have drawn attention. We have had a transverse section made of Mr. Heath's specimen, and of this I show a microscopical section. It will be seen that the mass of bone is hollow. On its surface there is muscular tissue undergoing hyaline degeneration, the interstitial tissue of which is increased, and amongst the layers of which is blood pigment. Between this hollow plate and the front of the bone is a thick mass of grey gelatinous material rather like myxomatous tissue containing vessels scattered about in which are a few isolated groups of atrophied muscular fibres.

Naturally these cases would not come under the eye of the pathologist, and in the dissecting-room would not be of much interest to the anatomist. It is therefore interesting that Professor G. Elliot Smith tells me he did not come across any examples amongst the large number of prehistoric bones he examined in Nubia, and that none were furnished by the great haul of bones from the East-End plague-pits which found their way to University College.

So far, I have only referred to injuries to the femur, but a large number of cases of a similar process occurring in the neighbourhood of the elbow have been described, some in connexion with fractures, and others with simple dislocations. I show skiagrams of the elbow of a boy of 6 who broke his humerus in 1903. It was re-fractured on account of stiffness seven weeks later, but soon was as stiff as ever. Six months after the accident there was a bridge of bone uniting the front of the humerus to the coronoid process and absolutely locking the joint. This would be called a deposit in the brachialis anticus. I restored the joint to a fair degree of utility by removing it; but a later skiagram shows a considerable amount of fresh bone deposit after my operation.

A most elaborate paper on the subject by Mr. Robert Jones[3] records 17 cases of his own and over 140 by Cahier and Binnie. At that time Jones concluded that operative treatment was essential. It is therefore interesting that he should now write to me under date Feb. 28th, 1911: "Since writing the article I have come upon cases where the deposits, instead of increasing have decreased, and I am not now at all convinced of the value of operation. The simplest-looking mass in the bend of the elbow is a very difficult problem to negotiate operatively, and I have on more than one occasion wished I had left the whole thing alone."

Still it must be allowed that, in some of the elbow cases with complete locking, operation appears to be essential, and also that in some of the early operations on cases in the thigh, even if they are not, as I think, necessary, no harm has resulted. Such, for example, was the result in Mr. Heath's case, and in one other to which I must refer, because a careful examination was made of the parts removed.

Sir Frederic Eve described a case[4] apparently very much like Mr. Heath's, in which the bone was removed 11 weeks after the injury with good result. A microscopical examination showed atrophy or degeneration or disappearance of the muscle in the neighbourhood. But it is not clear that any sign of muscle was found in the thin layer of soft tissue which intervened between the bony mass and the femur.

[1] A paper read before the Surgical Section of the Royal Society of Medicine on March 14th, 1911.

[2] Transactions of the Royal Society of Medicine, 1910, vol. iii., p. 149.
[3] Archives of the Roentgen Ray and Allied Phenomena, 1905, 1906.
[4] Transactions of the Clinical Society of London, vol. xxxii., p. 233.

The author agrees that injury to the periosteum is an essential part of the condition.

I come, then, lastly to the question of whether this condition should be called myositis and what is the evidence that it is due to inflammation of muscle. To me it seems more probable that the essential things are first an injury to the periosteum, and, secondly, an effusion of blood; and that the injury to muscle and the inclusion of muscular fibres in the callus are, so to speak, accidental, though it no doubt governs the shape and position of the new mass of bone. In other words, I think it is more analogous to what occurs when periosteum is stripped off in such operations as excision of the elbow, or in the cephalhæmatomata of infants, in which it is easy to demonstrate true bone at the margins of the clot, or to the formation of provisional callus in simple fractures. I know it is suggested that the process is the same as that which causes the "rider's bone" or the "exercise bone," but it appears to me to be a very different one. In these there is no evidence of injury to the periosteum unless it be suggested that they are to be compared with the cases described by Sir James Paget where necrosis occurred at the insertion of a strained muscle. The strongest argument for the myositis theory is afforded by some recorded cases where the new bone was not in actual contact with that which had received the injury.

If the essential factor, then, is injury to the periosteum it is surely a pity that the name which has been applied to this condition should confuse our ideas of myositis, and especially of myositis ossificans, about which it must be allowed our present notions are quite vague enough.

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## ON TRAUMATIC MYOSITIS OSSIFICANS.[1]

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IN a paper by Schultz dealing with the occurrence of traumatic myositis ossificans in the German army during a period extending over ten years the respectable number of 233 cases has been collated, showing that the affection is more frequent than is commonly supposed. I take it that the frequency depends upon the fact that soldiers are carefully examined for any defects in physical efficiency, while amongst the civil workers the minor degrees of such a condition as this are often overlooked. Amongst Schultz's cases only three are noted as affecting other muscles than the quadriceps extensor femoris and the brachialis anticus. The exceptions are two instances of ossification of the masseter following horse kicks and one of the pectoralis major due to a blow during bayonet exercise. In a paper by Ewald examples are quoted of ossification of the deltoid, triceps, biceps, adductor magnus, and subclavius following accidental injuries, also Horvath's remarkable case in which ossification of both iliaci followed forcible manipulation of a flexed and adducted hip-joint. The common history of all such cases is the reception of an injury, such as a kick or blow, rupture of the muscle from over-action, or in the case of the brachialis anticus laceration of the muscle accompanying a dislocation of the bones of the forearm backwards. The injury may be followed immediately by the development of a hæmatoma, the swelling consequent on which may persist until the more lasting hardening due to the ossification appears. More commonly a latent interval or a period of improvement is followed in from 10 to 21 days by the development of local pain and limitation in the movements of the neighbouring articulation. A hard resistant tumour is then discovered in the area of the affected muscle, which may persist permanently, for long periods, or become more or less completely absorbed with some rapidity. The cases are as follows:—

CASE 1.—A youth aged 19 years. Six weeks before admission, in July, 1905, the patient received a kick on the front of the left thigh while playing football. He had received the same injury on two previous occasions, but treatment with hot fomentations caused the swelling to disappear in two or three days. On this occasion there were bad bruising and considerable swelling of the knee which after a few days completely disappeared. Two weeks later the patient noted that the thigh had commenced to swell again and a "lump" formed which gave him considerable pain, especially on flexion of the knee. The swelling had not increased during the past two weeks, and the patient had been able to use his limb more freely. As a shop assistant he is on his feet most of the day. On admission an obvious swelling existed in the middle third of the front of the thigh; the superjacent skin was normal in appearance and temperature. The swelling was fusiform in outline; at its upper and lower ends the femur could be palpated at a deeper level. The inner margin of the swelling was somewhat sharply defined. There was no pain or tenderness on palpation, but flexion beyond half the normal range caused pain, while no movement was produced of the tumour. A skiagram showed a definite plate of bone somewhat to the outer side of the femur and unconnected with the bone. The patient was kept at rest for seven weeks, during which time the tumour somewhat diminished in size and became less defined in outline. He then returned to his work, and has since suffered no practical disability. A skiagram taken on Feb. 3rd, 1911, five years later, showed no trace of the previous ossification. The movements of the knee were normal, and no swelling could be detected on palpation. The patient continues to box and play football.

CASE 2.—A youth aged 19 years. Three months before admission, in July, 1905, the patient received a kick from a horse on the front of the right thigh. The kick was a severe one, necessitating rest in bed for a week. Swelling was noted on the day following the accident, and the patient did not consider that this had either materially increased or diminished since. There had been little pain, except on going upstairs; at times the limb felt as if "giving way under him." On admission to the hospital a swelling of fusiform outline and 5 in. in length was found over the front of the middle third of the femur. It was quite hard and immovable, apparently fixed to the anterior surface of the bone. The skin was somewhat stretched over it, the superficial veins were dilated, and a small pigmented area corresponding to the point actually kicked still existed. A skiagram showed the tumour to be composed of bone of about the same consistence as normal cancellous tissue. For about an inch at the central part no interval could be demonstrated between the tumour and the femur, but the two ends of the tumour were quite free from the bone. The arrangement of the laminæ suggested that the tumour consisted of an ossification in the substance of the quadriceps. On July 19th, 1905, Mr. H. H. Clutton exposed the tumour by a longitudinal incision on the front of the thigh and removed the greater part of it. The bony mass was surrounded by gelatinous layers suggesting bursal tissue. Some septa of similar tissue and what appeared to be muscle ran for some distance into the new bone. The periosteum was not exposed. Except for the development of a hæmatoma the wound healed normally and the patient left the hospital on the nineteenth day after the operation. A skiagram taken on Feb. 1st, 1911, shows a plate of bone about half an inch in thickness closely applied to the femur beneath the site of the upper part of the original ossific tumour. The patient has been doing his work as a railway porter for the past five years, suffering no disability except slight restriction in the amount of flexion possible at the knee. No tumour is detectable on palpation.

CASE 3.—A man aged 23 years. Seven weeks before he came under observation, while playing football the patient had an accident, another player falling over him and kicking his knee. A week later, while playing football again, an onlooker pointed out to him that he had "water on the knee." For the next six weeks he was kept at rest and treatment directed to the injury to his knee. At the end of seven weeks he came under my notice, when a hard fusiform tumour was present over the middle third of the femur. Flexion of the knee could only be carried out to about half the normal range, and attempts at further movement were painful. A skiagram showed a large mass of bone in the deep part of the quadriceps, no interval existing between it and the femur. It was well formed delicate bone in irregular lamellæ. The femur was normal. The patient was kept at entire rest and given small doses of potassium iodide for four weeks, at the end of which time the bony swelling had become less in extent, but somewhat denser. During the next three months the patient gradually resumed normal life and exercise, and at the end of the period was suffering no disability although some swelling was still palpable.

The chief interest in these cases lies in the first and second, since the patients were of the same age, they came under observation at the same time, and while one was treated by an active method, the other practically got well spontaneously. It is, however, to be remarked that the first case was of seven weeks' standing only, while the tumour in the second patient had been in existence three months. None the less, I am inclined to maintain the opinion that no active treatment should be adopted in the early stages of the condition, and I think that this view is supported by the observation here recorded in spite of the difference in the duration of the condition in the two patients.

I regret that I am unable to attempt to shed any new light on the pathology of traumatic myositis ossificans. I think we can only assume that patients the subjects of the condition belong to the "ossific diathesis" of Virchow—that is to say, in the words of Mr. Shattock in describing a traumatic osteoma, that "they possess an idiosyncrasy for producing bone under conditions which do not avail under normal circumstances." These patients must, in fact, be placed in the same category with those in whom large masses of callus are developed in connexion with fractures, even to the degree of such a case as the remarkable instance recorded by Battle and Shattock in which the callus assumed the form of an actual cancellous osteoma.

The frequency with which two muscles of the body, the quadriceps extensor femoris and the brachialis anticus, are affected seems to me to support the theory that the exciting

[1] A paper read before the Surgical Section of the Royal Society of Medicine on March 14th, 1911.

influence is to be referred to bone-forming cells detached from the periosteum. Both these muscles obtain a great part of their origin from plane surfaces of bone to which the attachment of the periosteum is not so firm as at the bony ridges or eminences which afford so great a proportion of muscular attachments, hence it seems probable that the tearing free of fibres of origin of these muscles may more readily give rise to breaches of the continuity of the periosteum, which, while in themselves insignificant, may yet suffice to set free bone-forming cells from the osteogenetic layer of the periosteum in a number capable of providing the necessary genetic stimulus for the ossific process. Such breaches of continuity of the periosteum may be very far short of a gross lesion such as accompanies a fracture and yet be sufficient for the purpose, while the subsequent apparent complete absence of continuity between the tumour and the bone is explained by the retraction of the separated fibres of muscle together with their minute attached portions of periosteum into the main mass of the muscle.

As to the common subsequent re-absorption of the bone, this appears to me to be a process in strict conformity with the re-absorption of superfluous masses of provisional callus in the case of fractures, the remodelling of bones to compensate for deformity due to curvatures, or the re-absorption of such cancellous osteomata as is described in the case of Battle and Shattock already referred to.

The structure of the bone is that of typical cancellous tissue except for the absence of true bone marrow, not differing in any way from that developed on the surface of the long bones in cases of osteo-periostitis. To illustrate this fact I exhibit a skiagram of a femur affected with diffuse osteo-periostitis of unknown origin, in which the ossification extends into the origin of the vastus externus, while the compact tissue beneath the periosteum has been extensively absorbed. A microscopical section of the bony tissue in this instance is identical in structure with the section obtained from the case of traumatic myositis ossificans, except in so far as the trabeculæ and intertrabecular spaces are more delicate in arrangement.

Significance has been attributed to the development of a hæmatoma in the early stage of the condition, but the presence of blood is probably only of importance in so far as it dissects up the intimate structure of the affected muscle and opens up the way and forms the basis for the connective tissue in which the subsequent ossification takes place. It has been suggested by Ewald in a recent paper that the escape of synovial fluid from the knee and elbow-joints respectively affords the stimulus for the ossific process. In support of this theory Ewald dwells upon the bursal character of the tissue surrounding the bony mass (mentioned in Case 2), which has been described by many observers, and also on the synovia-like fluid filling the cystic cavities which sometimes develop. It may be pointed out that similar tissue and fluid are observed in some cases of false joint following non-union of fractures where no rupture of a neighbouring synovial capsule exists.

We should be careful clinically to separate the condition of traumatic myositis ossificans from the ossifications accompanying the separation of small bony prominences, as in dislocations of the elbow, since these are much less extensive, usually confined to fibrous tissue, and in my experience more likely to be permanent. Again, traumatic myositis ossificans should be sharply distinguished from the so-called "rider's bones" which are really small permanent exostoses, and rather to be classed with the normal muscular apophyses which develop on bones at the points of attachment of powerful muscles as a definite response to the mechanical stimulus furnished by the pull of the muscles. In support of this view it may be pointed out that when the "rider's bone" attains large proportions, as in the ossification of the complete adductor magnus, the change is a permanent one. It does not appear to me to be correct to class the ossifications of muscle observed in various neuropathic diseases with traumatic myositis ossificans, since the former are permanent degenerations due to disturbances of nutrition, while the latter are rather to be regarded as connected with the normal process of repair.

Lastly, as to the general line of treatment to be adopted, a period of some weeks' complete rest should be maintained during the continuance of the active progress of ossification. When it is judged by clinical observation and X ray examination that progress has ceased or the process is retrogressive massage and exercise should follow. Operative treatment should only be considered when the process has manifestly come to a definite standstill, and the patient suffers from functional disability which there is a chance of relieving.

Upper Brook-street, W.

# THE FORMATION OF BONE IN PERIOSTEUM SEPARATED BY INJURY.[1]

BY A. A. BOWLBY, C.M.G., F.R.C.S. ENG.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

THE condition to which I wish to direct attention is well illustrated by the two following cases.

CASE 1.—A young man, aged 18 years, was thrown from his horse on April 20th of last year and injured his arm, the pain being felt on the flexor aspect just above the elbow-joint. As it was evident that he could not have struck this region, it appeared probable that the injury was caused by a muscular wrench when he fell on his outstretched hands. He was seen the next day by Dr. Brice Collyer of Croydon, who found that there was a good deal of swelling and pain, but the X rays confirmed the fact that there was no fracture. During the next fortnight the swelling rather increased and the patient was not able to use the arm, while both flexion and extension became more limited. On May 26th another radiogram showed that there was an irregular piece of bone in the region of the swelling, and on May 30th I saw the patient and found the following condition. Situated on the front of the humerus under the biceps tendon was an irregularly rounded swelling of the size of a hen's egg. It was very firm and was more or less fixed to the bone, but the muscle over it was free. It limited the movements of flexion and extension, and when the forearm was as nearly completely extended as possible it could be seen as a very definite swelling. An X ray picture showed an irregular formation of bone over an area of about 1¼ in. in diameter. The arm was placed on a splint and Scott's ointment was applied, with the result that in six weeks the swelling had almost disappeared. In three months' time no sign of it could be found and the movements of the arm were quite restored.

CASE 2.—A young lady, aged 21 years, fell while tobogganing on April 15th and injured her elbow. A surgeon found that she had sustained a dislocation of this joint and this was reduced under an anæsthetic, and the arm kept in a splint for one week and in a sling for a week more. It was then found that there was a swelling on the front of the humerus just above the elbow-joint, and this swelling continued to increase till I saw her six weeks after the accident. I found a swelling exactly like that described in Case 1 and, like it, of about the size of a hen's egg, situated beneath the muscles and attached to the bone. It caused aching pain and prevented free use of the arm. The X rays showed an irregular bony lump separated from the outline of the humerus by about an inch, while the shaft of the bone itself was normal and uninjured. Here, also, rest on a splint and a mercurial ointment resulted in the complete disappearance of the swelling within three months and the restoration of movements in this joint.

The formation of a considerable swelling as a result of the separation of periosteum by the muscles is not a common occurrence, although, as the result of direct blows, such as kicks on the shin, it is frequently seen. But I believe that there are really a great many cases in which pain and impairment of the use of a limb are caused by the dragging of the periosteum off the bone where large muscles are inserted into it, and by the hæmorrhage which results therefrom and from the formation of new bone. In most of these cases the swelling is slight and is often hardly noticed, but pain may persist for a long time unless the muscles are kept at rest. If there has been any old periosteitis which has left the membrane hypervascular and has loosened its

[1] A paper read before the Surgical Section of the Royal Society of Medicine on March 14th, 1911.

attachment, separation is more easily caused, and I have seen in one patient, who had previously had acute osteitis and necrosis of a small piece of the humerus, several attacks of pain and swelling of the bone brought on by any violent use of the muscles attached to the upper part of the affected bone. The patient was liable to these attacks for several years, and they caused the arm to swell to at least double its natural size, but they only occurred as a result of some considerable muscular strain, and slowly subsided when the arm was kept absolutely at rest.

In their less pronounced form I have seen cases of pain and tenderness with some swelling, which I have attributed to a separated periosteum, chiefly in the humerus and the femur, but the only cases where X ray pictures have been taken to confirm this diagnosis are the two I have detailed above. In one of them the swelling was so considerable that it had been diagnosed as a possible periosteal sarcoma.

Manchester-square, W.

## A CASE OF POISONING BY TRAGOPOGON PRATENSE, OR GOAT'S BEARD.

BY FRED J. SMITH, M.D. LOND.

*With Notes on the Chemistry by* HUGH CANDY, B.SC., F.I.C.

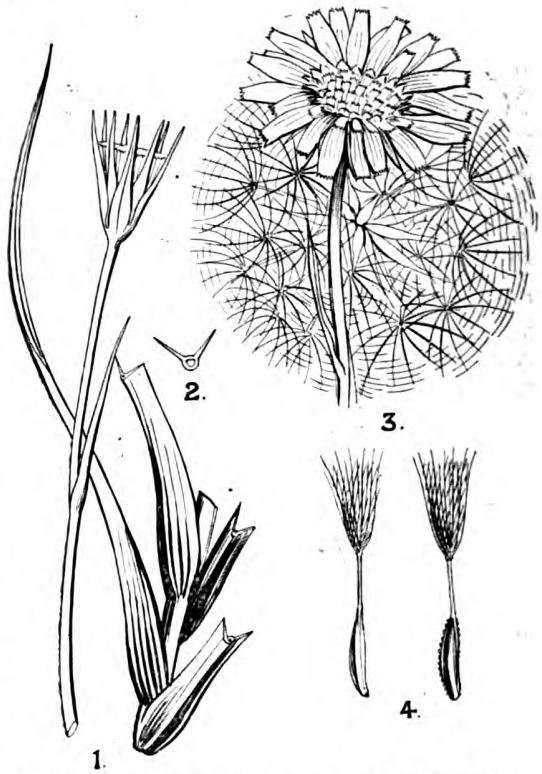
ON Monday, July 18th, 1910, the patient, a boy, aged 13 years, was admitted to the London Hospital in a semi-comatose state with the following history. On the previous Saturday afternoon, in company with some school fellows, he had been for a walk near Epping Forest and had partaken somewhat freely of what seem to be known locally as "gipsy nuts." He took a supply home with him and ate some more on Sunday. No ill-effects appear to have been caused either on the Saturday or during Sunday, for he went to bed on Sunday night apparently well, but was found on Monday morning semi-conscious in bed, looking very blue, and complaining of headache, but apparently there was no vomiting or other symptom of active irritant poisoning. (I believe that emetics were administered at home, and that they acted very successfully.) As he did not get better he was admitted to the hospital in the course of Monday afternoon, when I saw him at the request of Dr. R. Cecil Wall, under whose care he was admitted, and to whom I am indebted for permission to publish the case. When we saw the boy he was unconscious, cyanosed, with small inactive pupils, a small quick pulse, breathing very rapidly, with crepitations over both lungs. The temperature on admission was 101° F. Hot coffee and simple stimulants were administered, but in consideration of the long time that had elapsed since he had taken the deleterious material, the nature of which was quite unknown, and also fearing we might do more harm than good by very energetic treatment, we contented ourselves with one injection of strychnine (1/60 gr.) and atropine (1/100 gr.), the former as a general stimulant, and the latter in the hope that it might be anti-dotal, as the pupils were contracted. He passed several loose motions under him in bed, his respirations became of a Cheyne-Stokes type, his temperature gradually rose to 104°, and without showing any marked symptoms beyond those mentioned he died on Monday evening.

It was tolerably obvious that death was due to the "gipsy nuts." How many the boy had eaten is uncertain, but probably a good many, as he collected a pocketful after his feast when out for the walk, and of these he would seem to have eaten freely on Sunday. His mother brought some for us to examine. I only recognised them as the seeds of some composite plant and asked to be supplied with some other parts of it; these in a day or two were forthcoming when one, of course, at once saw that it was the common wild flower Tragopogon pratense, which can be found fairly abundantly about waste ground, rubbish heaps, &c.

The post-mortem examination was done on the next day. Its results were entirely negative, with the exception of a small patch of about the size of a penny of acute gastritis close to the œsophageal opening, and a few tiny hæmorrhages in the lungs, no doubt caused by respiratory distress and failure. As vomiting and purging had been rather severe I did not preserve any of the contents of the guts for analysis, though they were very carefully examined with the naked eye with negative results.

On turning to my Sowerby I find no mention of any poisonous property residing in the plant—in fact, it is there stated that the roots of this and its brother Tragopogon porrifolius are good to eat. As the plant is, however, so common I think the case ought to be published as a warning of the possible dangers of eating it.

As soon as I knew what plant it was that had caused the fatality I obtained some of the seeds for analysis by Mr. Hugh Candy, analyst to the hospital, whose report is appended.




1. The plant (much reduced). 2. Section of a leaf. 3. Flower and pappus (about hal f natural size). 4. The seeds "gipsy nuts" (about half natural size).

*Notes on Examination of Seeds of Tragopogon Pratense for Presence of Alkaloids, by* Mr. CANDY.

Of the seeds 100 grammes were ground in a mill, and the crushed product was repeatedly extracted with alcohol in presence of tartaric acid; the alcoholic extract was filtered, and the clear filtrate had a fine green colour; this filtrate was evaporated on the water bath to a soft residue which was of a deep brown colour. This residue was dissolved in hot distilled water as far as possible and the solution was filtered. The aqueous filtrate was made up to 200 c.c. with distilled water and then divided into two equal portions, $S_1$ and $S_2$, which were examined differently as follows:—

$S_1$. 100 c.c. were purified by the usual process with lead acetate, and the final lead-free filtrate was tested for alkaloids with the usual reagents. A precipitate was only obtained with phospho-molybdic acid.

$S_2$. The other 100 c.c. were successively extracted with (1) petroleum ether, (2) benzene, and (3) chloroform, first in acid solution and afterwards in ammoniacal solution. The last alkaline liquid was finally extracted with (4) amyl alcohol. In this way seven extracts were obtained, which were separately evaporated, and the residues so obtained were individually tested for alkaloids *with negative results.* The residue of $S_2$ from which these extracts had been obtained still gave the precipitate with phospho-molybdic acid.

Therefore, this precipitate is due to some other principle which is not an alkaloid proper, for it is not extracted by the ordinary alkaloid solvents and is not precipitated by I in KI, or Mayer's solution.

A portion of $S_1$ was also rendered alkaline with ammonia

and extracted with chloroform; this extract after evaporation was tested for alkaloids with negative results. The residue of $S_1$, however, still gave the precipitate with phosphomolybdic acid.

Harley-street, W.

# A RECORD OF 90 DIPHTHERIA CARRIERS.

BY ANGUS G. MACDONALD, M.B., C.M. EDIN., D.P.H. VICT.,

LATE BACTERIOLOGIST TO BOROUGH OF CREWE AND ASSISTANT TO MEDICAL OFFICER OF HEALTH OF CREWE.

As in typhoid fever, so in diphtheria, the carrier must be regarded as an important factor in the spread of disease.

The following tables are the result of an analysis of the findings of a bacteriological investigation of diphtheria in the borough of Crewe during a period of six months—March to September, 1910. The corporation of Crewe have been generous in supporting the carrying out of the investigation; and Dr. G. Granville Buckley, medical officer of health of the borough, has given his kind permission to use the records.

I shall be gratified if my criticism of the results should be accepted by my colleagues as a contribution towards the study of diphtheria, especially as regards the prevention of its spread. The term "carrier" or "positive contact" here used applies to persons who on examination were found to harbour the bacillus of diphtheria. The situations usually examined for the bacillus were the throat and nose, and the only other situation where the bacillus was found in this investigation is the ear. By examination of the throat is meant careful swabbing of the tonsils and pharynx; and of the nose, the passage of a swab slowly and carefully in and out through one or other nostril, separate swabs being used for each nostril.

Examination was undertaken on account of contact with a notified case of diphtheria, and the "contacts" were roughly divided into "home contacts" and "school contacts." Home contacts include the members of the family of the notified person, and also of neighbours and friends with whom contact about home was suspected or suggested. School contacts include all those examined at school, or rarely at workplace, on account of their contact with a notified person. The scheme of swabbing had to be modified at various times to suit circumstances and with a view to getting the best results, and in the end the attempt was always made to make the swabbing as wholesale as possible. The people have aided the efforts of the health authorities with wonderful readiness, but in various quarters opposition naturally was met with, which tended to lessen the satisfactory nature of the results and probably retarded the stamping out of the disease.

In a further paper I hope to discuss the epidemic in all its bearings, but meanwhile shall limit criticism to the carrier problem.

For the sake of comparison and of giving an idea of the relative proportion of things I give in tabular form the number of notifications received during the six months under consideration, and also various figures representing the amount of "contact" work done. The tables speak for themselves, and I have drawn out no percentage estimates or averages for any of the figures, having poor opinion of the utility of doing so, as the amount of work done—the estimation of the number and nature of the contacts to be examined, and the persistency with which the examination is followed out—is so much a personal and also local matter that no comparison could well be instituted with the work of others.

In the table of contacts, again, the approximate duration of known infectivity is given, and no average is struck. It is evident that the known period of infectiveness gives little idea of the whole period of infectiveness, and that even the known period would vary in different hands according to the local conditions—the facility afforded by the people for re-examination and the strength of the public health staff. It is evident, also, that to strike an average of known duration of infectiveness between cases that are found infective for some few days, and others whose infectiveness continues over a period of months, would be of no practical utility.

TABLE I.—*Showing the Number of Cases Bacteriologically Examined during the Months March–August, 1910.*

| 1910. | Notified and suspected cases. | Contact cases. | | | For release from quarantine: Hospital and home cases and contacts. | Total cases examined. |
|---|---|---|---|---|---|---|
| | | Home. | School. | Total. | | |
| March ... | 43 | 65 | 49 | 114 | 56 | 213 |
| April ... | 70 | 117 | 99 | 216 | 140 | 426 |
| May ... | 95 | 95 | 101 | 196 | 141 | 432 |
| June ... | 63 | 106 | 171 | 277 | 148 | 488 |
| July ... | 61 | 83 | 31 | 114 | 159 | 334 |
| August ... | 42 | 68 | 193 | 261 | 130 | 433 |
| Totals ... | 374 | 534 | 644 | 1178 | 774 | 2326 |

The above table shows the relative proportion of cases actually examined, and does not include subcultures or duplicates, except of examination for release from quarantine.

It will be seen that the number of notified and suspected cases in March is fewer than the number of notified cases as shown in Table II., while in the other months that number is considerably higher than the notified number. The reason is that at first all the notified cases were not bacteriologically examined as they were afterwards, nor until the work was in full swing was there the same assistance from the medical practitioners, teachers, and others in bringing to notice suspected cases. In the schools the teachers took up the work of observation with enthusiasm, and all the children brought under observation were swabbed and referred at once to their medical attendant for treatment, whatever the condition might be.

TABLE II.—*Showing the Number of Cases of Diphtheria Notified in each of the Six Months, March–August; the Number of Contacts Examined, and those found Positive.*

| 1910. | Number of notifications. | Number of contacts examined. | | | Number of contacts found positive. | | |
|---|---|---|---|---|---|---|---|
| | | Home. | School. | Total. | Home. | School. | Total. |
| March ... | 49 | 65 | 49 | 114 | 13 | 7 | 20 |
| April ... | 31 | 117 | 99 | 216 | 15 | 3 | 18 |
| May ... | 25 | 95 | 101 | 196 | 10 | 3 | 13 |
| June ... | 27 | 106 | 171 | 277 | 11 | 10 | 21 |
| July ... | 15 | 83 | 31 | 114 | 10 | 5 | 15 |
| August ... | 10 | 68 | 193 | 261 | 3 | 0 | 3 |
| Totals ... | 157 | 534 | 644 | 1178 | 62 | 28 | 90 |

It may be observed in connexion with this table that the cases of diphtheria found as the result of bacteriological examination of notified cases are fewer than the notified cases by a small and varying percentage, being smaller when there is much diphtheria and greater when there is little.

The chief point brought out in Table II. is the proportion of contacts found positive to contacts examined, and the relative proportion of positive home contacts to school contacts. The number of school carriers is also unduly inflated by the inclusion of 12 cases who were included on suspicion, and whose after-examination led to the belief that the bacilli which were the cause of suspicion were after all not B. diphtheriæ. They had characters sufficient to justify temporary observation in the presence of an outbreak of diphtheria, and the temporary quarantine and suspension from school were little hardship and a measure of safety.

All school carriers were found to be intimately associated at play with other cases and carriers, and mere class-room proximity was found to be of little importance as a factor in spreading the disease. The evidence all goes to indicate the very intimate means necessary for the transmission of diphtheria from one individual to another. In the home the positive cases have been found in most number amongst those who are naturally in closest communication, and the same holds for playmates in the same street and at school. This fact is of great importance, and indicates how readily, by prompt bacteriological examination and detection of positive cases, the dissemination of the disease may be prevented.

TABLE III.—*Details of 90 Carriers.*

| No. | Sex and age. | Known duration of carrier period. | Remarks. |
|---|---|---|---|
| 1 | M., 12 | 6 weeks. | School suspect; bacilli in throat four weeks; in nose six weeks. Cases of diphtheria in his class. |
| 2 | M., 16 | 5 days. | Home contact of notified case. No history of illness. |
| 3 | F., 6 | 3 weeks. | School contact of notified case. No history of illness. |
| 4 | M., 3 | 5 ,, | Brother and sister home contacts; family of seven. Case at school where were other cases. |
| 5 | F., 1 | 3 ,, | No discoverable previous or current illness of carriers. |
| 6 | F., 6 | 3 ,, | School contact. No evidence of illness. |
| 7 | M., 6 | Not ascertained. | School contact; notified two days later; treated at home; no other swabs obtainable. |
| 8 | M., 6 | ,, | School contact; left the district before another swab was obtained. |
| 9 | M., 9 | 2 weeks. | Home contact, brother of No. 20. No illness. |
| 10 | M., 7 | 1 week. | School contacts of No. 20. No illness admitted. |
| 11 | F., 7 | 2 weeks. | |
| 12 | M., 7 | 2 ,, | Home contact. No illness. |
| 13 | M., 7 | 2 ,, | ,, ,, |
| 14 | F., 8 | 2 ,, | ,, ,, |
| 15 | F., 7 | 2 ,, | School contact. No illness. |
| 16 | M., 11 | 4 ,, | Home contact, brother of No. 17; got no antitoxin; notified two days later. |
| 17 | F., 7 | 4 ,, | Home contact, sister of No. 16; got antitoxin; no evidence of illness. |
| 18 | F., 7 | 4 ,, | School contact. No illness. |
| 19 | M., 25 | Not ascertained. | Home contact; out of work. Nursed notified sister on his knee. Went off to work 10 days later without having been re-examined. |
| 20 | M., 7 | 15 weeks. | Brother of No. 9. Bacilli remained in nose and throat; allowed to leave hospital under his medical man's supervision. Successive negative swabs obtained 10 days later. |
| 21 | M., 10 | 8 days. | Home contact. No illness. |
| 22 | F., 15 | 2 weeks. | Home contact of No. 23; not examined when No. 23 went to hospital. No sign of illness. |
| 23 | M., 6 | 2 ,, | Discharged from hospital; found positive in nose a week after discharge. |
| 24 | M., 27 | 3 days. | Father, mother, and brother of notified case. No illness; got antitoxin. |
| 25 | F., 26 | 3 ,, | |
| 26 | M., 1 | 3 ,, | |
| 27 | M., 13 | Not ascertained. | Home contacts; four cases notified simultaneously; these then found negative. Baby of eight months notified a month later, when these were found positive; further examination obstructed. |
| 28 | F., 6 | ,, | |
| 29 | F., 35 | 2 weeks. | Home contact, mother of notified case. No illness. |
| 30 | F., 13 | 3 ,, | School contact. No illness. |
| 31 | F., 12 | 3 ,, | ,, ,, ,, |
| 32 | F., 10 | 4 ,, | Home contact. No illness. |
| 33 | F., 6 | 3 ,, | School contact. No illness. |
| 34 | M., 27 | 12 days. | No. 34, home contact of No. 35. No. 35 was discharged from the hospital after three months' residence; remained positive in pus from ear; one negative result before discharge. Found positive and virulent eight months from onset of illness. |
| 35 | F., 45 | 8 months and still positive. | |
| 36 | F., 43 | 3 months. | Home contact. No illness. |
| 37 | F., 10 | 2 weeks. | Home contact. Vague history of "cold" and "sore throat" some weeks before. |
| 38 | M., 7 | Not ascertained. | Home contact. No admitted illness; slight membranous rhinitis; bacilli found in nose; not re-examined. |
| 39 | F., 10 | 6 weeks. | Home contacts. No illness; had antitoxin. Sisters. |
| 40 | F., 16 | 6 ,, | |
| 41 | F., 31 | 5 ,, | Home contact of baby 1 year old. Atrophic condition of nasal and pharyngeal mucosa; a laundry worker; probably introduced the disease to home. |
| 42 | M., 1 | 3 ,, | Home contact, brother of Nos. 39 and 40; had no antitoxin; notified two days later. |
| 43 | F., 5 | Not ascertained. | School contact. No illness; not re-examined. |
| 44 | M., 5 | ,, | ,, ,, |
| 45 | M., 5 | ,, | School contact. Bacilli found in nose with membranous rhinitis; lost sight of. |

TABLE III. *(continued).*

| No. | Sex and age. | Known duration of carrier period. | Remarks. |
|---|---|---|---|
| 46 | M., 10 | 4 weeks. | Notified as scarlet fever; found also to carry B. diphtheriæ in throat. |
| 47 | F., 11 | 3 weeks. | Home contacts. No illness; antitoxin given; sisters; two others in hospital. |
| 48 | F., 14 | 3 ,, | |
| 49 | M., 3 | 3 ,, | Home contact. No illness; got antitoxin; one of family discharged from hospital two weeks before; found negative; other infection probable. |
| 50 | M., 9 | 4 ,, | Home contact. No illness. |
| 51 | M., 14 | 4 ,, | Home contact. No illness. At date of last examination found delivering bread from handcart. |
| 52 | F., 41 | 6 ,, | Home contact; mother of Nos. 39, 40, and 42. |
| 53 | F., 6 | Not ascertained. | Discharged from hospital ten days before brother notified. Found positive in nose; mother (No. 36) still positive. |
| 54 | M., 10 | ,, | Home contact. No illness; no antitoxin; no pretence of isolation; three others in family notified during next fortnight. |
| 55 | M., 5 | 13 weeks. | Home contact; examination not obtained until after fresh case in own and next door family. |
| 56 | M., 5 | 12 ,, | Home contact; two days before found getting sweets straight from mouth of No. 55. |
| 57 | F., 19 | 2 days. | Home contact. No illness. |
| 58 | M., 7 | Not ascertained. | School contact; lost sight of. |
| 59 | M., 7 | 3 weeks. | School contact ,, ,, No illness in self or family. |
| 60 | M., 7 | 2 days. | |
| 61 | M., 7 | 3 weeks. | |
| 62 | M., 7 | 4 ,, | School contact; found No. 67 positive, had sore throat ten days before; also No. 66 notified later. |
| 63 | M., 7 | 3 ,, | School contact; no complaint. Found No. 68 at home positive. |
| 64 | M., 7 | Not ascertained. | School contact; no complaint; lost sight of. |
| 65 | F., 8 | ,, | Home contact; no illness; re-swabbing not obtainable. |
| 66 | F., 6 | 3 weeks. | Sister of No. 62; found at home positive; notified two days later, before antitoxin given. |
| 67 | M., 9 | 3 ,, | Brother of No. 62; glands enlarged; had "mumps" ten days before. |
| 68 | M., 2 | 3 ,, | Brother of No. 63; had antitoxin at once; no symptoms of illness. |
| 69 | F., 7 | 2 ,, | Scarlet fever case in hospital; possible school contact; bacilli proved virulent. |
| 70 | F., 5 | 1 week. | School contacts. For various reasons on suspicion included as carriers, but as repeated examination of cultures failed to yield isolated colonies of B. diphtheriæ the cases were not followed. |
| 71 | F., 5 | Not ascertained. | |
| 72 | M., 5 | ,, | |
| 73 | M., 6 | 2 weeks. | School contact; frequent sore throats; no notice taken of recent illness. |
| 74 | M., 6 | Not ascertained. | School contacts. No. 73 alone of this group gave a pure culture, and as holidays supervened the cases could not easily be found for further swabbing. |
| 75 | F., 6 | ,, | |
| 76 | M., 6 | ,, | |
| 77 | F., 6 | Not ascertained. | School contact. |
| 78 | M., 7 | 3 weeks. | Scarlet fever case; probable school contact. |
| 79 | F., 7 | Not ascertained. | Home contact; had "rheumatic fever" shortly before; further swabbing refused. |
| 80 | F., 21 | 4 weeks. | Home contact ,, ,, No symptoms of illness; got antitoxin. |
| 81 | F., 2 | 4 ,, | |
| 82 | M., 11 | 4 ,, | Home contact; no illness; got antitoxin. |
| 83 | M., 7 | 7 ,, | Home contact; chronic membranous rhinitis; bacilli proved virulent. |
| 84 | F., 4 | 4 ,, | Home contact. ,, ,, No illness; had antitoxin. |
| 85 | M., 16 | 2 ,, | |
| 86 | M., 3 | 3 ,, | |
| 87 | F., 9 | 3 ,, | Home contact; notified a day later, before having antitoxin. |
| 88 | F., 41 | 1 week. | Home contact; no illness. |
| 89 | M., 13 | 1 ,, | Home contact; son of No. 88. |
| 90 | F., 8 | 6 weeks. | Scarlet fever case; acute and lingering rhinitis; bacilli proved virulent. |

Antitoxin was recommended in all cases of immediate contacts, positive or negative, and administered in most, although it has not been possible to ascertain the number of cases who had antitoxin privately administered.

In criticising the series of carriers set out in Table III., it will be seen that they may be divided into four definite groups. First, there are those who show no clinical evidence of diphtheria and in whom the bacillus diphtheriæ is found for a short time. These persons probably possess some immunity or have a bacterial flora in the mouth or nose inimical to the bacillus diphtheriæ. Secondly, we find cases in whom a history of "cold," "sore-throat," "mumps," &c., some time previously may be elicited. They may also have some form of paralysis, and are obviously neglected cases of diphtheria. Thirdly, there are cases without a clinical history of diphtheria, but with some local lesion of the throat, nose, skin, ear, &c., where the bacillus diphtheriæ finds continued lodgment—membranous rhinitis is the most common lesion found. Fourthly, akin to the third group are those who have passed through a definite attack of diphtheria, and in whom usually associated with some pathological lesion the bacillus diphtheriæ remains for lengthy periods after convalescence.

The diagnosis of these carriers was, in the largest proportion, made from microscopical demonstration of the bacillus diphtheriæ obtained from isolated colonies. The exceptions mentioned in considering Table II. were temporarily diagnosed from bacilli observed in mixed preparations—the microscopic preparations are extant. "Virulence" is probably legitimately assumed where morphologically typical diphtheria bacilli are found in individuals intimately associated with clinically and bacteriologically typical cases of diphtheria. In a few cases where doubts as to virulence might be raised—the scarlet fever cases and the prolonged cases—virulence was established by the physiological test at the Public Health Laboratory, Manchester, under the supervision of Professor Sheridan Delépine, to whose courtesy and kindness the permission to use the reports is due.

As a rule, when a carrier is found in association with a case there is nothing, except history of previous contact, to indicate which carried the bacilli to the other, although in some cases a pathological lesion or the bacterial flora may suggest a long-time carrier.

The fate of the bacillus diphtheriæ when it disappears from an infected person is not obvious. There is no evidence of phagocytosis in the affected regions; and the most probable explanation is that it disappears before the growth of some organism for which the environment for the time being is more favourable. The total disappearance of the bacillus diphtheriæ is very surprising in those cases where it is found for only a short time. In the chronic cases it seems usually to beat a slow retreat before a staphylococcus; and "ghost" forms of bacillus diphtheriæ are commonly to be found amongst the staphylococci for some time after the bacilli have ceased to be successfully isolated.

In some of the chronic carriers attempts have been made to implant on the pharynx and nasal passages flora which observation suggested might be inimical to the growth of the bacillus diphtheriæ; but although some of these implanted organisms were recovered on subsequent swabs, the bacillus diphtheriæ continued to grow. It seems probable, nevertheless, that further prosecution of work on these lines may result in finding harmless organisms whose implantation and growth on diphtheria-infected persons may result in ousting the bacillus diphtheriæ from its usual haunts. The administration of antitoxin has no apparent effect on the persistence of the bacillus diphtheriæ in carriers any more than in cases.

In addition to the foregoing observations the lesson of these carriers may be briefly summed up as follows:—

1. Carriers are found at all ages and of either sex.
2. The previous carrier period cannot be ascertained, but may in some cases be inferred.
3. Nor can it be said in many cases that one case was derived from another—that is, the carrier found may have given the disease to those around, or may only have just received it.
4. The presence or absence of an obvious pathological condition is no criterion of the fact of a carrier, of the length of carrier life, or of virulence.
5. The length of carrier life seems to have no effect on virulence: bacilli have been demonstrated to be virulent after four and eight months in the ear and nose of different individuals.
6. Carriers are found amongst those most intimately associated with other carriers or cases; at home between mother (nurse) and child, and child and child who play together; at school the carriers found are few and always closely associated (in play and not necessarily in school-room proximity) with some other carrier or case.
7. The control of diphtheria depends (assuming control of the case) on the control of the carrier.
8. The carrier should be notified as a case of diphtheria, no matter of what age or sex, and due quarantine and observation should be maintained until satisfactory demonstration of the disappearance of the bacillus diphtheriæ.
9. As everything points to the conclusion that the bacillus diphtheriæ is essentially a human parasite (a saprophytic existence is not evident; the transference from animal to human is at any rate rare, and many cases of apparent transport by milk and other agencies are manifestly from human contact), a determined attack on the lines of thorough bacteriological investigation should have no difficulty in stamping out diphtheria altogether from the land.
10. Evidence points also to the slow, inevitable, mechanical distribution of the disease which persists endemic in the undiscovered carriers. Epidemicity depends entirely upon the number and nature of the carriers; the headway that has been attained before preventive measures have been effectively used, and upon various sociological factors more or less under the control of the authorities. The invocation of miracle, of meteorological factors local and universal, of special intensity of the virus, *et omne ignotum*, which is the commonplace of authority to-day, might surely give way to the recognition of simple, natural, open-eye causation.

# GRAVE AND PROLONGED CARDIAC FAILURE FOLLOWING THE USE OF COCAINE IN DENTAL SURGERY.

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AND
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AT a time when the question of the administration of local anæsthetics by unqualified persons is attracting attention we think it desirable that the following case should be put on record. In our opinion it illustrates in a striking manner the risk with which such is accompanied. Not only did the patient have a remarkable escape from death at the time, but she had a dangerous relapse several weeks after, and was seriously ill for some months.

The patient was a woman, 34 years of age. Her previous illnesses were occasional "sore-throat" during childhood, scarlet fever at 19 years of age, and two attacks of influenza some years ago. She had never suffered from indications of cardiac weakness; on the contrary, she was a strong, healthy woman, who was able to run races with complacency. In the early part of December, 1908, she had five teeth of the upper jaw removed by an unqualified person under a local anæsthetic made up of cocaine, iodine, and carbolic acid. The patient fainted during the operation, and alcohol and other restoratives had to be resorted to. Afterwards she complained of feeling faint, "shaky," cold, and of numbness. These symptoms continued during the journey home, and there was a sense of suffocation, and the patient volunteered the information that she "could not properly feel her feet as she was going along." She was put to bed, but still complained of feeling faint and seemed not fully conscious. Hot bottles and flannels were applied to the legs. During the night she vomited. She had an appointment with the operator for 10 A.M. the following day, but felt so ill that she was unable to reach there until about 4 o'clock. She told the operator of the symptoms already enumerated, but upon his assurance that it was all right, eleven teeth were extracted from the lower jaw under a local anæsthetic. The patient seemed to have quickly lost the power of speech and sight, and felt faint. During the journey home she also complained of a sense of suffocation, tremors, jerkings, and powerlessness of the limbs, loss of sensation of the legs, shortness of breath,

and great coldness. After reaching home she fainted, and her condition became apparently so grave that Dr. Leakey was sent for.

On reaching the patient about 9 P.M. she was found lying in a low chair, in an almost completely unconscious condition, extremely pale and cold, the skin moist and clammy, the breathing rapid and shallow, and the pupils dilated; the back was stiffened, there were tremors and muscular twitchings, and the knee-jerks and other reflexes were greatly exaggerated; there was no appreciable pulse at the wrist; the apex-beat was slightly outside the nipple line, very feeble, and somewhat irregular; no bruit was detected; the temperature was subnormal, and there had been some vomiting. Hot brandy, strychnine, digitalis, and aromatic spirit of ammonia were administered, and the patient was lifted into bed. During the night there were repeated syncopal attacks and other indications of grave cardiac failure. The next morning the pulse was rapid and extremely feeble. The coldness of the extremities continued for three days, by which time a faint mitral systolic bruit was audible.

At the end of a week the patient was allowed to sit up in bed, and a few days later was lifted on to a couch. She went out of doors for the first time on Jan. 18th, and commenced walking with support a few steps at a time. She complained much of sleeplessness, "started" on dropping off to sleep, and had very disagreeable dreams. In the fourth week, during a short walk one morning, she had a severe syncopal attack and had to be taken home in a bath chair. On examination she was found very collapsed and pallid, with an irregular pulse and evidences of dilatation of the left heart. During the night there were frequent syncopal attacks, and the following day her condition was considered so serious that Dr. Price was called in consultation. He found her with a pulse of 90 per minute, regular, exceedingly small and feeble, and of low tension; apex-beat outside the normal; a faint mitral systolic bruit audible; knee-jerks slightly exaggerated, and suggested the following treatment. Much light nourishing food, strychnine and digitalis (later iron and arsenic), hypnotics, to be kept flat in bed for a week, gradually sitting up during the second week, to be lifted out of bed the third week if progress satisfactory.

The patient was seen again in consultation on March 8th. Progress had been so slow that she had not been allowed out of bed until March 7th. She was very feeble; pulse 80 per minute, still extremely feeble and small, though better than on the last examination; apex beat rather outside normal position; advised to be kept in bed for a week. She was carried into the next room on March 14th, and walked there on the 31st. A third consultation was held on that day, when the pulse was found to be somewhat stronger and fuller. The patient had suffered from constipation, and complained of a feeling of great weakness after the administration of aperients. Altogether the progress was very slow. On April 25th she went out for the first time again in a bath-chair. She began to walk on May 15th. It was not considered advisable to let her go home to Leicestershire until July 29th. On Oct. 26th she only complained of a feeling of exhaustion after considerable exertion, and of irritability on slight provocation. The pulse was then much larger and stronger, but still not quite up to the normal; there was a very faint localised mitral systolic bruit.

In our view it is beyond doubt that the case was one of cocaine poisoning and that the symptoms of the first two days were typical of that condition in its acute form—on the first day in a comparatively mild degree, and on the second in an alarming degree, when a fatal termination was very narrowly escaped. We believe that the heart muscle was severely damaged by the poison, and that this accounts for the subsequent slow progress and serious relapse. In our judgment it is a matter of very grave concern that according to the present state of the law it is permissible that anyone without a medical training necessitating an adequate acquaintance with the physiological effects, proper dosage, and poisonous manifestations of cocaine may administer this drug as a local anæsthetic. We think the operator should have possessed the knowledge that the symptoms of the 24 hours following the first extractions enumerated by the patient and her sister were certainly those of a comparatively mild degree of acute cocaine poisoning, in which case he would no doubt have adopted proper precautions, instead of which he admittedly administered a larger quantity of the drug.

# TWO UNCOMMON FORMS OF DEFORMITY OF THE FEMALE GENERATIVE ORGANS, ONE CAUSING SYMPTOMS SIMULATING INTESTINAL OBSTRUCTION.

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CASE 1. *Absence of body of uterus and right appendages; presence of myoma and calcified dermoid.*—A married woman, aged 46 years, was admitted to the Royal Infirmary under my care when acting for Mr. P. Paterson on Sept. 21st, 1909, suffering from symptoms pointing to intestinal obstruction. A year previous to admission she had an attack of colic which lasted for a few days. On the present occasion a much more severe attack of colic came on two days prior to admission, the pain being referred principally to the umbilicus. Vomiting occurred twice on the first day of the present illness, while the bowels moved twice on the day previous to admission. Since then the bowels had not moved, nor had flatus been passed, notwithstanding frequent doses of castor oil and the administration of enemata. Blood had never been passed per rectum. There was frequency of micturition. The climacteric had occurred two years previously.

On admission the pain had become less severe, the temperature was 102° F., and the pulse 130, irregular, thready, and feeble. The abdomen was distended and tender to palpation, particularly over the left iliac fossa, where a large mass was easily detected on palpation, which was dull to percussion. Its mobility could not be tested owing to tenderness and abdominal rigidity. On vaginal examination the cervix was found to be normal in position and direction, but small and ill-developed. The uterine sound could not be introduced into the canal, but an ordinary probe went in for about an inch. The fundus could not be detected. The vaginal roof on the left side was occupied by a mass which was tender to palpation, while on the right side a hard rounded mass was detected which projected towards the rectum, and was easily felt on rectal examination. This mass was of about the size of a golf ball and was fixed.

Two enemata were given, but without result, and operation was decided upon. A median vertical incision was made below the umbilicus; the peritoneal cavity was opened and a quantity of sanguineous fluid was evacuated. A large tumour, subsequently ascertained to be fibromyomatous, at once presented. This tumour, roughly spherical in shape, and fully 5 inches in length, was freely moveable, being attached to a pedicle, also some 5 inches long, which had become twisted and was partially gangrenous. The pedicle was ligatured down close to what was supposed to be the serous surface of the uterus, and the tumour removed. The left Fallopian tube was also in a gangrenous condition and was also removed. The left ovary appeared normal but of small size. While this tumour doubtless accounted for many of the symptoms it did not explain the condition felt per rectum, and on passing the finger down along the course of the rectum a mass was now detected. On placing the patient in the Trendelenburg position and examining the parts it was found that there was no uterine body present, the peritoneum being reflected from the rectum on to the bladder much as in the male, save that on the left side there was an ill-developed broad ligament, with the gangrenous tube already mentioned, and fairly normal ovary. On the right side the appendages appeared to be entirely wanting, while a little to the right of the normal position of the uterus the hard mass referred to presented. The pelvic peritoneum, together with a subjacent layer of fibrous tissue overlying the tumour, was now incised and a portion of what appeared to be bone presented, which emitted a slightly hollow note when tapped. As my assistant said, the mass resembled a very small, well-ossified fœtal head. Endeavours were made to remove the mass, which, after considerable difficulty, was shelled out, and was found to consist of a roughly spherical shell of osseous matter (Fig. 1), which contained an oily material at

first sight resembling pus. No hairs, teeth, or other tissue elements were present. This wound was packed for 48 hours, and the patient made an uninterrupted recovery save for slight transient jaundice for a few days after operation.

The intestinal obstruction in this case was probably due to the pressure of the fibromyoma on the bowel, but no evidence was obtained of any portion being damaged thereby. While the calcified dermoid certainly projected into the rectum, it must have done so for a considerable period previously, and hence its influence may probably be discounted.

It is interesting to note that this woman, according to her statement, had menstruated regularly. She was married, but naturally had no family. The presence of ovary and tube on the left side, albeit small, would probably account for the regular menstruation. Did the fibromyoma, which on section was perfectly solid and hard, with its pedicle represent the muscular substance of the uterine body which had begun to enlarge after the climacteric, and did the dermoid represent the right ovary? (Fig. 2.)

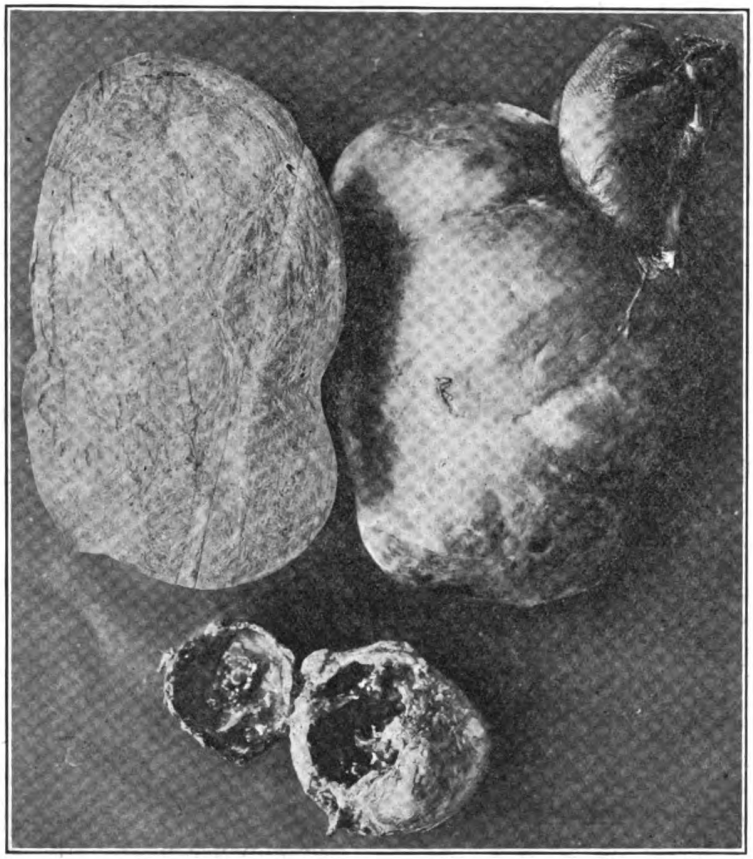
CASE 2. *Absence of the lower end of the vagina.*—A girl, 16 years of age, was admitted to the Royal Infirmary on Sept. 8th, 1908, suffering from what was diagnosed as appendicitis with abscess. Three days prior to admission she was suddenly seized with severe colicky pain referred to the umbilicus at first, but which later became located over the right iliac region. This pain was practically constant, and she was given morphia for its relief. She had a somewhat similar attack two months previously, which, however, was less severe, and lasted only for a few hours. On her way to hospital she vomited twice.

On admission the temperature was 99·2° F. and the pulse 120. The abdomen generally was not distended, but there was a distinct tumour mass in the right iliac region which was not only easily palpable, but visible. The abdomen in his region was rigid and the mass very tender to palpation. Percussion over the mass gave a dull note. The bowels had moved regularly, and the tongue was clean. Menstruation had not yet begun. A rectal examination revealed a large fluctuant swelling on the right side, a wave of fluctuation being transmissible from the rectum to the swelling in the iliac fossa. There was no swelling in the perineum, nor suggestion of abnormality from the appearance of the external genitals. A vaginal examination was not made.

On the morning following admission the temperature had fallen to 97°, while the pulse had risen to 140, and I was asked to see her. The pulse-temperature ratio being unsatisfactory, and the patient obviously suffering, it was determined to operate. Under chloroform the mass in the iliac region became, if possible, more obvious, while it retained its hardness to touch. On opening the abdomen a mass of omentum was found in front of the swelling, which had been crushed by the swelling against the abdominal wall, and had become gangrenous from ischæmia. This mass was removed and the subjacent swelling investigated. It was immediately recognised to be the uterine fundus, which was pushed up against the omentum and abdominal wall by an enormously distended vagina. A finger was now introduced from the vulva into what appeared to be the vagina, but which was found to be a greatly enlarged urethra, the finger going straight and with the greatest ease into the bladder. Careful examination revealed the fact that there was no vaginal opening, there being only a greatly enlarged urethra, which expanded at its outlet to occupy the greater portion of the perineum, there being only a short interval between its lower border and the rectum. It was now seen that the case was probably one of retained menses arising, not from imperforate hymen, as is usually the case, but to entire absence of the lower portion of the vagina, and it became a question as to how the vagina might best be opened into without injury to the bowel. It was thought that, on applying pressure to the abdominal mass, a slight bulging of the posterior urethral wall high up took place, and accordingly an incision was made in the posterior urethral wall, about 1½ inches from the orifice, and, on deepening the incision, some two pints of dark fluid blood were evacuated, the abdominal swelling meanwhile subsiding. While the vagina was, of course, much distended, the uterus was small, but apparently normal. The opening into the vagina was now packed and the abdominal wound stitched up. The patient made an uninterrupted recovery, and has since menstruated regularly. Subsequent attempts by means of a plastic operation to narrow the urethra and widen the mouth of the vagina, and also to bring it to the surface, were only partially successful, and a further attempt is contemplated.

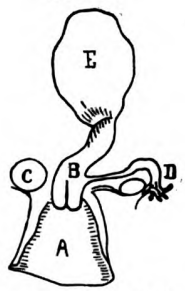
Probably two developmental factors were at work in this case. Normally the Müllerian

FIG. 1.



Myoma in section: dermoid after removal.

FIG. 2.




Diagrammatic representation of parts in the first case. A, Vagina laid open. B, Rudimentary cervix connected by pedicle to myoma (E). C, Dermoid replacing right appendages. D, Left appendages. E, Myoma replacing fundus uteri.

ducts open into the urogenital sinus about the end of the second month of intra-uterine life—the want of opening, therefore, would here date from a very early period of fœtal existence. Further, the fused Müllerian ducts open normally into the urogenital canal some distance from the surface, and only reach the surface by shortening of the sinus. In this case the shortening did not occur, and the patient was thus left with a large "urogenital" urethra, the vagina ending blindly about 1½ inches from the normal position of its orifice (Fig. 3).

FIG. 3.

Diagrammatic representation of the parts in the second case. A, Uterus projected against abdominal wall by distended vagina, which ends blindly in pelvis. B, Omentum crushed by uterus against abdominal wall and rendered ischæmic and gangrenous. C, Symphysis with bladder above and behind it. D, Rectum. E, Abnormally large urethra expanding to occupy whole vulvar orifice.

It will be seen that Case 1 presented symptoms suggesting intestinal obstruction from internal strangulation, while Case 2 resembled a case of appendicitis with a large abscess occupying the pelvis and pointing through the abdominal wall. In the first case the twisting and gangrene of the pedicle of the myoma probably gave rise to the temperature and pulse symptoms, while in the second the gangrenous omentum probably fulfilled a like function. Apart, however, from the confusion of symptoms presented, the writer ventures to think that the cases are in themselves of sufficient interest and rarity to justify their being recorded.

Glasgow.

## NUCHAL LIPOMATA IN THE LOWER ANIMALS.

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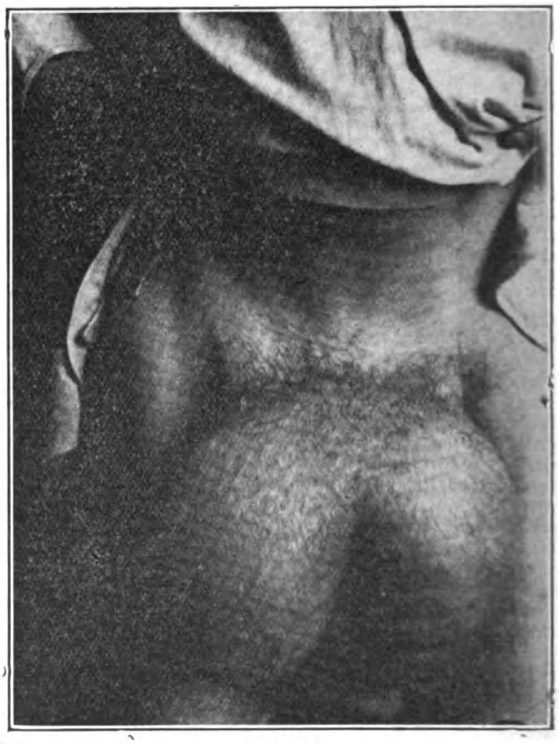
THE following note may be regarded as a kind of appendix to my article on Diffuse Lipoma published in THE LANCET of Nov. 26th, 1910, p. 1537. In that paper I advanced the opinion that what we have called the "diffuse lipoma" finds its principal form mainly in the male sex, and that it has its site in the fat which accumulates in certain regions around the roots of hair follicles. Its common position is at the back of the neck, and it might indeed be known as diffuse lipoma of the nape. In support of the statement that the fat which in this malady undergoes hypertrophy is that which imbeds the roots of large hairs I mention the facts that the region affected is that which in many animals grows the mane, and that in the human subject the same hypertrophy occasionally occurs in the pubic region around the roots of the large pubic hairs. In this latter position, although slight degrees of it are probably very common, examples sufficiently exaggerated to attract attention are probably rare. Still more infrequently are the matters of complaint brought under the attention of the surgeon.

I am now able to produce from a photograph one of these cases. It will be seen in the illustration that huge masses of fat are developed from the mons and adjacent parts, and are of such a size as completely to conceal the genitals. The patient was a man in whom very large masses had also developed on the nape of the neck and adjacent parts. Both from the nape and from the pubes the tumours were excised and were found to be huge masses of ill-defined fat developed immediately beneath the skin and closely adherent to it. The patient was a stout man in good health, but with no remarkable accumulations of fat in other parts than those named. It is the only case in which it was necessary to excise the pubic growths, and it affords proof that there is tendency in the same direction in these two regions.

It will be remarked at once that there is very seldom in the human subject any very marked tendency to the growth of large hairs in the back of the neck, and the next point I wish to establish is that certain animals in which a mane is present in this region there is a liability to fat hypertrophy about the roots of its hairs. Slight forms of this are, I believe, not very unusual, although I am not aware that any account of them has ever been published. My own experience is almost limited to asses, and at present I have under observation in two asses owned by two neighbours very remarkable examples of them. In the ass the overgrowth of fat begins at the root of the mane, and constitutes in slight forms and



Masses of fat in pubic region.

in all early stages simply a thick neck. Although placed mainly in the middle line there are, it may be observed, evidences of some central demarcation into two parallel masses which run side by side from the nape of the neck to the top of the withers. As the masses increase and become welded in one they tend to sway the mane over to one or other side. In one of the two asses mentioned above the mane is carried over by its roots to the right side, and is made to some extent irregularly pendulous. The tumours are never painful and usually the animal appears to be pleased to have them handled or rubbed.

Two points of interest must be mentioned. In the human subject these nuchal diffuse lipomata are met with, I believe, almost solely in males of middle age, and in those accustomed to drink malt liquor. The evidence given was that the patients were exceedingly fond of it, but it was not thought that they had any opportunity of over-indulgence.

I have no doubt that sex as well as habits of diet have something to say in the production of these hypertrophies, and especially with their location. In several instances in the human subject I have witnessed definite subsidence of the tumours as the result of abstinence, and conversely a few weeks of beer-drinking will cause the tumours very perceptibly to increase.

In the ass I have not as yet met with them in the female subject, and, curiously, those in which I have seen the tumours were castrated males. They were both well-conditioned animals and had been well fed and not overworked.

Anyone specially interested in this subject can have an opportunity for examining the asses I have mentioned by a visit to Haslemere (after due notice and by appointment).

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# CLINICAL ASPECTS OF SOME VARIETIES OF EXCITEMENT.

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THERE are numerous conditions of acute mania, or of delirium, with which one comes in contact in the work of a mental hospital, and many of these cases can be separated and differentiated and referred to a particular form of insanity. Perhaps most patients with any maniacal or excited condition (with the exception of acute alcoholic excitement), when certified, are looked on by the medical man as cases of mania. The object of this short paper is to try to give some points in the diagnosis which will help the general practitioner to form an accurate diagnosis and place his maniacal patients in the correct group of cases.

We have states of (1) mental exaltation or mania proper; (2) alcoholic excitement or delirium tremens; (3) excitement in general paralysis; (4) katatonic excitement; (5) semi-conscious epileptic states; and (6) excitement in dementia præcox. Let us look at such patients, and I will try to illustrate cases to give the differential points for an accurate diagnosis.

Perhaps the most common are those who suffer from acute alcoholic excitement. The general symptoms may be well known, but I give a case.

CASE 1.—Man, aged 42 years, admitted Jan. 17th, 1911. He was very restless and excited, but one could retain his attention for a minute or two, and on asking him where he came from he could tell us. He could also tell us what he did, and admitted that he had been drinking very heavily since the new year. He did not know where he was, and although he had been admitted only half an hour before examination he thought he had been here for a few days. Restlessness was extreme. He would lie still for perhaps two minutes, then would suddenly jump up as if he feared something. Again on lying quiet he would follow with his finger all round the walls and ceiling again to jump up suddenly. On asking him what he saw he described them as devils and dragons, and said he could not catch them. He was also very incoherent in his speech. He seemed to be apprehensive and to fear something. If shown anything such as a thread on his bed he lay and looked at it for a minute or two and then made a grab at it. He would also suddenly grab at the blankets at if he wanted to catch something. He was very tremulous, and his outspread fingers showed strong jerky tremors. His tongue was thickly furred and tremulous. His temperature was 100° F. and his pulse rapid. Knee-jerks were exaggerated; pupils were normal. There was a slightly dilated heart.

Now to examine the case. The patient is collected to a certain extent, but he has no idea of place or time. He can tell us what he does and where he comes from, but he does not know where he is or how long he has been here. Again, there are most vivid hallucinations of sight and continued restlessness, and the physical examination. The diagnostic features are the following: The tremor, the restlessness, the vivid character of the hallucinations of sight, the want of clearness of ideas of time and place with other signs of collectedness; and the physical features, such as temperature, pulse, slight enlargement of the heart, and exaggerated knee-jerks, are very common.

After an interval of four days the patient has recovered; he has lost 6 lb. in that time, but has gained 12 lb. since.

The next delirious condition which I wish to mention is the following:—

CASE 2.—A man, aged 39 years, was admitted on Nov. 2nd, 1910. When admitted he greeted me as an old friend and at once asked me to go to London with him. The history previous to admission was that the night before he had suddenly become unmanageable, threatening to kill his wife and children. He denuded himself, declaring that the voice of God had come to him telling him to remain nude till the Day of Judgment, and he threatened to kill anyone who came near him. Previous to that he had been perfectly well and working every day. He was put to bed but was very restless, tossing about in bed, wanting to get up, throwing the bed-clothes about him, while his movements were very tremulous. Then he would sit up and talk to himself in a most silly manner. On being spoken to he would be roused to attention for about a minute, and he told us where he came from, that he was a grand singer, and that when he sang the whole world heard him. He was very divertible; jumped from one subject to another at once. He was only to be here for a night, when Lady —— was coming for him in a flying ship. The night after admission he became violent, jumped up suddenly, attempted to jump out by the window, and cut himself slightly; then he said he was very foolish to have done so. Like Case 1, he seemed to be very apprehensive. He is also very tremulous. He tells us he sees a motor-car coming for him, then he sees Lady ——'s flying machine.

Now there are certain features which are much like Case 1. There is the tremor, the uncertainty of movement, the continued restlessness, the apprehension, and the hallucinations. Now with only the above features, and if these were not carefully noted, one might go wrong, but there are certain deviations from the picture of Case 1. Our patient is more confused and he has the most impossible delusions, while he has not the exceedingly vivid hallucinations of vision. To examine our patient further, one would notice at once that his speech was slow, syllabic, and slurring. His pupils were unequal, but reacted to accommodation, and, slightly, to light. There is no expression in his face. His tongue is tremulous, the knee-jerks are markedly exaggerated, no ankle clonus. Babinski positive, and he has a psoriasis all over his body. It is a case of general paralysis, and now we see there was nothing remarkable in his delusion that when he sang the whole world heard him. Question him further he tells us the church he sings in is his own and is painted in all the colours known. Moreover, he is very wealthy. As to causation, he has been a sailor, sailed to St. Malo and Dunkirk, but there is no evidence of specific infection.

What are the diagnostic features? We have the delusions of grandeur, the divertibility, the rapid change from one subject to another, the change of consciousness of personality, the motor symptoms, the tremor, the unequal pupils, and, on physical examination, the condition of the reflexes.

The third patient whose condition I wish to describe is, perhaps, more interesting than either of the two previous cases:—

CASE 3.—Woman, aged 27 years, a tinker. She also exhibits several features which might easily be spoken of as acute mania. Her excitement is only paroxysmal, but if seen during that stage, and only then, and not carefully examined a wrong diagnosis might easily be made.

Our patient's excitement is best seen just after meals. First, she will not start to eat anything whilst the others are at their food. Now try to take away her food—she resists. Trying to persuade her to take her food makes no difference. She will not even look up. Her face is expressionless; then try to remove her food, she resists and becomes very excited.

She calls out "Oh God! Oh God!" repeating herself several times, will clutch bread in her hands, and resist all effort to remove it. She now becomes abusive, swears at one badly, and will tear one with her fingers. You speak to her, she repeats what you say over and over again, to again become very abusive. During this stage she may attack the nurse, and does so with great cunning. Now leave her alone, she will lie back with her food, but still talks angrily, repeating herself again and again. In a short time she is quiet, and one would notice that she lies rigidly in one position. Now to note the condition as far as we have seen. There is excitement, but there is more. The perception of

the patient is perfect. Is not the condition negativism? There is first the attempt to persuade her to eat, and she never gives you any indication that she has heard you, but lies quiet; no words from her, but she will not eat. Now try to remove her food, again she is negative; and this time there is the excitement with also a repetition of phrases.

Further, a pin can be stuck into this patient's forehead and she will not wince, and if we lift an arm it remains in the position we put it into for about a minute, and gradually falls down. I have pointed out the negativism: Why is she negative? Is it from any delusion or apprehension? It cannot be from either. There is nothing in the behaviour of the patient to suggest that there is any apprehension or delusion. Again, why should she not wince when a needle is pushed into her forehead, and become excited when a gentle hand is put on her? Clearly we have to deal with a case of negativism, an instinctive opposition without foundation from delusion or apprehension.

My diagnosis is katatonic excitement. We have as diagnostic features the abrupt alternation between senseless excitement and rigid tension, the taking up of peculiar attitudes, the confusion of talk with complete comprehension, the meaningless repetition of the same words.

The next patient I wish to mention shows a condition of apprehension.

CASE 4.—Woman, aged 50 years, for the past fortnight has shown a condition of terrified apprehension. She is very excited, and every time one goes near her she calls out with a frightened look, "Oh God! Oh God! it was not me," repeating this over and over again. She varies her words "You won't do it," "I did not do it," "Why am I put here?" Then she will catch hold of you and implore you "Don't leave me," "I did not do it." Again, if I spoke to the nurse, she complained that we were speaking about her and making up our minds what we should do with her. She could easily hear what was said to the nurse, but she did not appear to understand what was said. Clearly, she is in a state of terrified apprehension. You speak to her and ask what is the matter; you cannot get any answer. She still continues in the same excited, apprehensive state, and she does not understand what is said to her. There is more or less stupor. There are features like Case 3. There is the meaningless repetition of words with excitement, but there is a great distinguishing feature in the fact that the patient is stupefied. Now again our patient is very restless, she is not in bed and she will not sit still any longer than a minute, but gets up and moves from one place to another. There is great uncertainty in her movements and she even hits out at times. This condition of seeming ignoring of questions is not negativism. She is stupefied. Again, she is quiet for, perhaps, a minute, and you can move her arms about without any hindrance from her own will. Her excitement is meaningless and her assaults are without the adroitness of Case 3. Her talk is very disconnected, but, unlike Case 3, it is comprehensive in that the whole talk is due to apprehension. The condition is a dream-like one, with changing incidents and fluctuations of emotions of an apprehensive nature and utterances in accord.

Consider the case. Here again we have excitement or delirium. What are we to eliminate? We may exclude the alcoholic form on account of the profound stupefaction, also from the want of tremor and the want of the vivid hallucinations of vision. Alcoholics are not nearly so stupefied. You can arouse them to answer you and even to give a correct answer. They are collected to a certain extent. The clouding of consciousness is too deep for ordinary fever delirium. Exclude katatonic excitement by the want of perception and hence no negativism. Again, we do not have the repetition of phrases and abuse of katatonia, nor do we have the alteration between senseless excitement and rigid tension. Our patient's excitement is continuous. Clearly we have a condition of delirium the result of an apprehensive state of mind. We have profound disturbance of comprehension, active delirium, extreme apprehension, an inclination to reckless acts of violence, and the condition of stupor along with excitement corresponds to certain epileptic semi-conscious states. The only thing else noteworthy is the condition of the pupils. They are dilated and react very feebly to light.

This patient has now recovered and does not remember anything at all about her condition, but says she must have been very ill. There is little doubt that the condition is an epileptic one. In this patient we actually have a history of fits. But apart from fits we have irritability and real bad temper just before this semi-conscious epileptic state. A typical feature of epileptics is piety alternating with irritability. At the time of writing our patient is reading the Bible.

My next patient is more impulsive. Like all the previous cases, she is subject to outbursts of excitement, and she exhibits some features which are different from them all.

CASE 5.—Woman, aged 28 years, up to a few days ago had remained very quiet, but has now reached a state of excitement. She chatters in a confused way—really a senseless playing with words. She runs about the ward, moving from place to place, is very impulsive, apt to do most reckless things, will push her fist through the window, will smash dishes, and has attacked a nurse. She is very abusive, and grimaces, making most hideous faces.

As far as we have seen, the most outstanding features are the impulsiveness and the grimacing. She is quite collected. If you ask her questions she answers only in monosyllables, and very slowly. In a short time her outburst of excitement is over and she sits down, and the most significant feature which will be observed is a vacant, silly smile. There is difficulty in getting her to start to do any work, and when she does anything one would notice that her movements are languid and listless. There is a great want of initiative, but there is no hindrance of will to action, only there is the want of interest, everything is done in such a dull, listless manner. Another feature about our patient which is noteworthy is the loss of interest in her surroundings. She does not care where she is put or who looks after her. She has no emotions. She expresses no desire, has no hopes and no fears.

Now what is the diagnosis in such a patient? We have seen her excitement, which is only temporary, her recklessness and her restlessness, but these features have little to do with the diagnosis. To consider our patient. Her ability to understand what is said to her is unimpaired, but she only answers in monosyllables. Again, there is the great want of emotion, or, as it has been put by Kraepelin, a want of the strong feelings of the impressions of life. The diagnosis is dementia præcox.

The features of such a case are: the want of feeling of the impressions of life as seen in the want of the emotions. Her lack of interest in her surroundings with ability to understand and remember. Again, the vacant, silly smile and the grimacing are common, as is also the great want of initiative.

The five cases which I have ventured to describe all show varying features, and each of them is worth consideration. One might take exception to classifying katatonia and dementia præcox separately, as katatonic symptoms are common enough in dementia præcox, but my intention was to describe katatonic excitement separately, and its significant features will justify a special description.

CASE 6.—Alongside of these five cases, and for comparison I shall illustrate the special features of a married woman, aged 32 years, who exhibits great mental exaltation and can be called a true case of mania, properly so called. As soon as one enters the ward the following picture may be seen. She is very noisy and excited. She is walking about the ward; is attracted by the least thing, will pick up anything, remark upon it, and throw it away at once. Perhaps she is induced to sit down, but the moment you turn your back she is up again, attracted by something else. Now she will seize a chair, swing it round and sit down on it, to get up again immediately and go through some other movement. All this time she is talking, but one could not follow the purport of her talk as she changes so often from one thing to another.

She is very fond of dress, and perchance in her wandering round the ward she sees herself in a mirror and she will stand for a minute and admire herself. Her own image has attracted her attention. I once saw her steal a nurse's cuffs, put them on, and sit down as "my lady" quite quiet for about a minute. You speak to her, ask her name, and she will give a correct answer, but she answers so much more, and at once gets away from one subject to another—speaks and does just whatever comes to her mind. You cannot fix her attention on one subject; she cannot be led into any connected conversation, digresses immediately, and then jumps up and moves round the ward as previously described. She is very merry, she laughs throughout her talk, and when out for her walks goes round singing all sorts

of songs, and will sing during the whole time out. Our patient's merriment may very soon change to angry irritation. She becomes very abusive and, as the impulse moves her, will attack any one, and it requires considerable restraint to prevent her doing damage.

What are the significant features of our patient? The most prominent is the divertibility. Some accidental attraction at once arrests her attention, but this is immediately thrown out and some new attraction is forced into consciousness, to be at once departed from. This divertibility is shown equally in mood—merriment to anger; in thought—changing ideas; and in action—her continued changing of position and movements. The patient has not the ability to prevent herself being ruled in thought, mood, and action by the influences of the moment. Next one would note the "flight of ideas." Her thoughts are to no purpose. The train of thought is broken at once by one idea being driven out by another. Again we would note the impulsiveness, in the fact that she will attack anyone. Here we note the same thing: there is no check on the transposition of impulses of the will into action. We would also note the deficient attention. We cannot retain our patient's attention on any subject. The rapid change of the sensations which are forced into consciousness, and each in turn receiving attention, makes it impossible for her to concentrate her mind on any subject.

The whole condition may be summed up thus:—There is no check on the number of ideas which force themselves into consciousness; no check on the sensations received, and each in turn may show itself in mood, action, or speech.

Looking at all those cases, what have we? There are certain features different in them all. First take attention. Case 1 can attend and can comprehend what is said to him to a certain extent, but is soon taken up with his hallucinations of sight. Case 2 can be aroused to attention, but is more confused than Case 1, and soon mentions his delusions of grandeur. Case 3 understands what is said to her, can attend, but will not let you see she does attend, except in the fact that she is negative. Case 4 is stupefied and cannot attend. Case 5 can attend, but she has no interest in what is said to her; she is languid and listless, and would rather not be troubled. Case 6 cannot attend on account of the divertibility; the rapid change of the sensations forced into consciousness and then put into action.

All our cases showed excitement, but all have showed some points of distinction. It would only be taking up space were I to add a note about each, as to which had delusions, hallucinations, or as to the condition of the memory, &c. Enough will be got in the short commentary at the end of each case for an accurate diagnosis. My paper is only clinical, but it may serve a useful purpose if it stimulates a proper investigation into all cases of "Mania."

Lochgilphead.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### HYSTERECTOMY FOLLOWED BY DOUBLE PHLEBITIS.

BY H. MACNAUGHTON-JONES, M.D. R.U.I., F.R.C S. IREL. & EDIN.,
PRESIDENT OF THE OBSTETRICAL AND GYNÆCOLOGICAL SECTION OF THE ROYAL SOCIETY OF MEDICINE.

THE patient, aged 48 years, a nullipara, had suffered for some years from severe hæmorrhages, for which she had been curetted a few years previously. At the time of operation for tumour of the uterus she was greatly emaciated and extremely anæmic, and altogether in a most unfavourable condition for operation. The tumour was delivered with great difficulty, being firmly wedged in the pelvic cavity. It was a multinucleated myoma, one mass of isolated nodules from cervix to fundus. On the fifth day after operation proctoclysis was commenced, and as there was some distension of the abdomen the wound was opened and a suprapubic drain inserted. Exploration revealed nothing, and only some serous fluid escaped. The proctoclysis was continued on and off for five days, but the suprapubic opening was not closed for ten days. The first symptoms of phlebitis appeared in the left femoral region on the thirteenth day after operation, and the swelling extended to the entire limb. It had returned to its normal size by the twenty-fifth day. On the thirtieth day the right thigh commenced to swell, and it followed the same course as the left, becoming the more swollen of the two. The swelling subsided completely in about ten days, and from that time there were no untoward symptoms. The patient has since done well.

This is the only instance of phlebitis in both legs as a post-operative complication that I have been confronted with. The important lesson to be learnt from the case—and one that is often overlooked—is the increased risk run from grave anæmia, the result of bleeding from fibroids, and also the unfavourable conditions consequent upon this complication which increase the operative mortality. Whatever be the precise physiological cause or causes, there is no doubt that the condition of the blood in such cases tends to thrombosis; also the possible effect of traumatism in the forcible delivery of these tightly wedged pelvic tumours has to be remembered.

As generally occurs, the left leg was the one first affected, and it was rather remarkable that the attack in the right did not begin until the thirtieth day after operation. In Kelly's "Operative Gynæcology" (1898 edition) it is stated that out of some 1100 operations he had had phlebitis in both legs in only one instance, and in his last classical work on medical gynæcology, written with Noble, the authors state that out of 7130 women operated upon thrombosis occurred in 48. Of these, 727 had fibroid tumours, and 19 of the 48 cases resulted from operations on fibroid, a relation regarding the greater risk of thrombosis from fibroids which is in accord with the experience of other surgeons.

The therapeutic points of interest in the case were the good results following the proctoclysis with suprapubic drainage, as recommended by Dr. J. B. Murphy, and the benefit obtained on two occasions when the bowel was obstinate from subcutaneous injections of infundibulin—"pituitary extract." It may also be interesting to note that in this, as in other cases in which I have had to deal with extreme anæmia, the patient was kept on "carnine," in the present instance for 17 days, in addition to other nourishment.

Harley-street, W.

### NOTE ON A CASE OF PANCREATIC CYST IN A CHILD AGED 14 MONTHS.

BY D. I. CONNOLLY, M.B., CH.B. VICT.,
ASSISTANT RESIDENT MEDICAL OFFICER, CRUMPSALL WORKHOUSE, MANCHESTER; LATE ASSISTANT HOUSE SURGEON, STAFFORDSHIRE GENERAL INFIRMARY, STAFFORD; LATE HOUSE SURGEON, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN, MANCHESTER.

THE patient was admitted into the Staffordshire General Infirmary on Jan. 29th, 1910. The history, as given by the mother, was as follows. The child had been breast-fed up to about the age of 10 months, when she was weaned. She had not had a day's illness up to three or four days before admission to hospital. The mother then noticed that the child became listless and refused food, also that diarrhœa set in. At the same time the little one developed difficulty in swallowing, apparently having a "sore-throat." The mother became alarmed at the child's condition, because, as she said, "she was always so lively and full of play," and brought her to hospital.

On admission the child looked fairly well-nourished, but wore an anxious expression, and was quite listless. The tongue was furred, the papillæ were prominent, and there was some injection of the fauces. Nothing was to be made out in the chest. On examining the abdomen, it was found to be distended and tympanitic all over. Palpation elicited a feeling of resistance in the right hypochondrium. The movements of the intestine were audible on auscultation. The pulse was rapid, reaching from 160 to 180 per minute, and the temperature at first was about 99° F. In the nervous system there was nothing of note except the general languor previously noticed. It was not found practicable to obtain a specimen of urine. There were no signs of rickets or any deformity.

Treatment consisted of milk only. The diarrhœa not improving, albumin water was substituted. Of drugs, grey

powder in half-grain doses twice a day was given; also a mixture containing 2½ grains of bicarbonate of sodium and ½ minim of tincture of nux vomica was administered every four hours. Later brandy in 10-minim doses every four hours was given. The fauces were irrigated regularly with weak boric acid lotion.

On the second day after admission slight jaundice supervened, the stools became clayey and more frequent, and curds were also prominent. The abdomen became more distended, and now a definite rounded tumour could plainly be made out in the right hypochondrium. It had a convex border directed downwards. The mass was felt to extend across the middle line and to reach into the left hypochondrium. It was dull on percussion. A peculiar fact was noticed, that on firm pressure over the swelling an evacuation of the bowels ensued. On the fourth day the jaundice deepened considerably, diarrhœa was still frequent, and the stools continued quite clayey. The temperature rose to 102·8° on the evening of the second day and continued to vary between 100° and 104°, but mostly above 102°, until the afternoon of the ninth day after admission, when it fell to 99°, and on the morning of Feb. 8th (the tenth day) to 97°, when the patient died. The pulse kept somewhere about 160 to 170 beats per minute, till the eighth day, when it dropped by degrees from 176 to 114 per minute.

*Post-mortem examination.*—The thoracic cavity was considerably encroached upon owing to the pushing upwards of the diaphragm by the liver. There was no fluid in the chest; all its viscera were healthy. On opening the abdomen the liver was found to be displaced, so that its visceral surface looked more forwards than downwards and its lower edge reached posteriorly almost to the crest of the ilium. It was bile-stained, but otherwise healthy. The gall-bladder was enlarged and contained bile. A large fluctuant mass was found pushing forwards the posterior peritoneum and intestines. The duodenum and first part of the jejunum were adherent to the surface of the tumour and spread over it. The whole of the abdominal viscera were removed *en bloc*. The kidneys were normal except that they were bile-stained. The spleen was unaffected. There was an accessory spleen present. The fluctuant mass was found to be a cyst arising from the head of the pancreas, the main portion of pancreatic tissue having disappeared; part of the tail of the organ, however, still remained. What appeared to be soft glands were found along the abdominal aorta; they resembled also small masses of fat somewhat similar to appendices epiploicæ. The tumour, by its mechanical effects, had caused a complete obstruction to the bile flow; hence the symptoms and cause of death. The cyst contents were not examined. There was no examination of the head. The pelvic viscera were normal, as was also the stomach.

I sent a report of the case to Professor J. Lorrain Smith, who very kindly looked up the literature bearing on the subject, and he said that, so far as he had gone, the case seemed to be unique. The specimen is now in the museum of the Pathological Department of the Victoria University, Manchester. I have no comments to make on the case, being content with recording the facts and leaving explanations and theories of causation to more capable hands.

I am indebted to Dr. C. Reid, senior physician of the Staffordshire General Infirmary, for leave to publish the notes of this case, and I also wish to thank Professor Lorrain Smith for the trouble he took in looking up the literature of the subject.

Manchester.

THE LIVERPOOL EYE AND EAR INFIRMARY: THREATENED CLOSURE OF WARDS THROUGH LACK OF FUNDS.—At the ninety-first annual meeting of the trustees of the Liverpool Eye and Ear Infirmary, held on March 13th in the town hall, the Lord Mayor presiding, there were expressions of profound regret at the unsatisfactory state of the finances of the hospital. The deficit on the accounts now amounts to £3246. The committee stated that the only way it could see of making a sufficient reduction in expenditure was to close the upper wards (30 beds), which would be a great calamity. The Lord Mayor, the Archdeacon of Liverpool, and other speakers deplored the paucity of support, and voiced fervent hopes that the public, who receive such benefits from the infirmary, would adequately contribute to its funds. Another wail lay in the paucity of the attendance at the meeting.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SURGICAL SECTION.

*Myositis Ossificans.—Femoral Hernia.—Congenital Pouch of Bladder.*

A MEETING of this section was held on March 14th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

The three following papers were read and are published in full in this issue:—The PRESIDENT: Myositis Ossificans Traumatica (p. 791); Mr. G. H. MAKINS: Traumatic Myositis Ossificans (p. 792); and Mr. A. A. BOWLBY: The Formation of Bone in Periosteum Separated by Injury (p. 793).

Mr. C. H. FAGGE read a paper on the Inguinal Method of Radical Cure for Femoral Hernia. He said that he would like to make a few practical remarks about the details of Lotheissen's operation, which appeared to him to be of first importance. Owing to the presence of the cord it was undoubtedly more difficult in the male than in the female, but it was relatively of greater value in strangulated than in other cases owing to the ease with which the imprisoned coils could be manipulated in full view and carefully examined before they were returned. Gimbernat's ligament might when necessary be divided. Outside the sac from above an abnormal obturator artery could be seen and avoided. The sac could usually be dragged bodily upwards out of the femoral canal after it had been opened and its contents returned; in freeing that the deep epigastric vein had to be defined and avoided; it was not until his thirty-second case that he injured that vessel and was compelled to ligature it after some annoying hæmorrhage. After ligaturing the sac and allowing its stump to retract upwards the divided edges of the parietal abdominal fasciæ (transversalis and iliac) might with advantage be brought together over the sac by interrupted catgut sutures. Three or four interrupted sutures were necessary for the approximation of the conjoint tendon and Cooper's ligament after free definition of the latter; in passing those sutures lay the chief difficulty of the operation. The outermost must be passed through the Cooper's ligament just behind the inner border of the femoral vein, which required full and careful refraction; it would be found easier to pass those mattress sutures first through Cooper's ligament and to tie them above rather than below, a half-circle cutting needle being used, while the peritoneum and bladder were protected with flat retractors. He had been accustomed to use iodised catgut throughout. He had not seen any evidence of compression of the femoral vein by those sutures, but one of his cases, otherwise successful, had developed a saphena varix.

Mr. JAMES BERRY read a paper on a Large Congenital Diverticulum of the Bladder treated by Resection. The patient was a labourer, aged 21 years, who was admitted to the Royal Free Hospital on Nov. 18th, 1904, complaining of recent hæmaturia. When examined under an anæsthetic a large, rounded, soft swelling was found in the right iliac fossa and extending thence up into the right loin. Although he had passed urine shortly before the examination, nevertheless as much as 37 oz. of urine were withdrawn by catheter. On March 5th, 1905, a long median incision was made through the lower abdominal wall and the bladder freely exposed. The bladder consisted of two nearly equal parts, each about as large as a normal bladder. The lower and anterior one occupied most of the true pelvis, and had a tough fibrous wall in which very little muscular tissue could be seen. The posterior sac had a very thick muscular wall, and lay above and behind the other. The anterior sac was then freely opened, and 41 oz. of fluid were withdrawn from it. A more or less triangular portion of the wall was left *in situ*, and all the rest of the sac was cut away. The patient made an excellent and uneventful recovery. He now informed Mr. Berry that he was in excellent health and had no urinary trouble at all. In the day-time he micturated every three or four hours, and he very rarely had to get up at night to do so. Mr. Berry ventured to record that case on account of its rarity, as he had not been able to find a precisely similar

one recorded elsewhere. Mr. John G. Pardoe had kindly drawn his (Mr. Berry's) attention to an excellent paper by Dr. Hugh H. Young of Baltimore[1] on the Operative Treatment of Vesical Diverticula, with report of four cases. A bibliography of the literature was given, together with a short account of the cases of excision of a diverticulum by Péan, Czerny, Riedel, Pagenstecher, and von Eiselsberg, besides his own three cases in which that method of treatment was adopted. The chief points of interest in the present case seemed to be the large size of the cyst; its congenital nature, shown by the existence of urinary symptoms in early childhood; the absence of any acquired obstruction in the urethra which would have led to the formation of such a pouch, and the opening of the left ureter into the pouch far away from the bladder; the dilatation of the left ureter, which was not due to any stricture at its vesical orifice, since a probe could be (and was) readily passed up into the ureter. It was apparently due to the absence of muscular fibre in the wall of the pouch into which the ureter opened, thus permitting the intravesical pressure during micturition to be transmitted directly to the ureter. The operation itself presented no difficulty of any importance.

## OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

*Exhibition of Specimens.—Primary Abdominal Pregnancy in a Rabbit.—Hæmatocolpos.—Origin of Follicle Cells of Ovary.*

A MEETING of this section was held on March 2nd, Dr. H. MACNAUGHTON-JONES, the President, being in the chair.

Dr. EARDLEY L. HOLLAND exhibited a Sarcoma of the Uterus.

Dr. R. D. MAXWELL showed an Ovarian Cyst containing thyroid gland tissue.

The PRESIDENT exhibited a specimen consisting of a large retort-shaped Hydrosalpinx and a Cystic Ovary, with a peritoneal cyst behind the mesosalpinx. On removal the latter was found to be filled with a bright orange-coloured fluid; the ovarian cyst was a blood cyst, and the dilated fimbriated end of the hydrosalpinx was adherent to the ovary. He also showed a Multilobular Myoma of the Uterus removed from a patient aged 45 years. The operation was followed by attacks of phlebitis in both legs, the first on the thirteenth day after operation in the left femoral region, and that in the right leg on the thirtieth day after operation. The value of infundibulin (pituitary extract) was shown in this case when there was difficulty in moving the bowels. It was the only case of phlebitis of both legs which he had seen, and it exemplified the well-known risk of this complication in connexion with bleeding fibroids. The patient made a good recovery.—Dr. AMAND ROUTH, Mr. ALBAN DORAN, and Dr. A. E. GILES discussed the case, which is separately reported in this issue of THE LANCET.

Dr. W. BLAIR BELL read a short communication on Primary Abdominal Pregnancy in a Rabbit, in which it was pointed out that while secondary abdominal pregnancy, following rupture of the cornua, was fairly common in hares and rabbits, primary abdominal implantation had not previously been described. Owing to the frequency with which tubal or ovarian abortion or cornual rupture with secondary abdominal implantation had occurred without macroscopical evidence being obtained, it was insisted that no case could be accepted unless serial sections of the ovaries, tubes (and, in animals, of the uterine cornua) were made, however great the other evidence might be. In the case recorded in this paper of primary abdominal pregnancy in a rabbit, four full-term fœtuses were found in a tumour attached to the gastro-colic omentum. The specimen was shown, together with skiagrams of the specimen and of the young rabbits at birth. Sérial sections had been made of the ovaries, tubes, and uterine cornua, and no trace of the laceration could be found, nor was there any evidence of a recent intra-uterine pregnancy. Seven corpora lutea of the same age, and considered to correspond with the date of the abdominal pregnancy, were found, and shown in photomicrographs. The number of corpora lutea rather indicated coincidental intra-uterine pregnancy, for it was usual to find that the number of corpora lutea corresponded with the number of fœtuses, but, of course, after several months no histological evidence would be obtainable of changes in the uterus due to a previous pregnancy.—Dr. AMAND ROUTH cited cases by Dr. Pembrey and Dr. Bellingham Smith, and Mr. Bland-Sutton's opinion that there was no evidence of the occurrence of tubal pregnancy in the lower animals (except in one doubtful case in a baboon). He believed that all the recorded cases were subsequent to rupture of the uterus.

Dr. BLAIR BELL also read a paper on the Nature of the Fluid contained in a Hæmatocolpos. The histories of two cases of hæmatocolpos in girls, aged respectively 18 and 16 years, were recorded. In both there was a large fluctuating tumour reaching above the umbilicus, on the top of which was riding the undistended uterus. A third case, under the care of Dr. T. W. Eden, was also mentioned. A bacteriological examination of the chocolate-coloured fluid collected from the second and third cases showed it to be sterile. A full chemical examination of the fluid from the second and third cases gave the following results:—(*a*) It contained a very large proportion of mucin; (*b*) the pigment is mostly hæmoglobin, with a little methæmoglobin; (*c*) there is 90 per cent. of water and 10 per cent. of solids; (*d*) the nitrogen present amounts to 1·43 per cent., which is equivalent to 9 per cent. protein; (*e*) lactic acid is present in large quantities; (*f*) the calcium content is double that of normal blood; and (*g*) neither fibrin ferment nor fibrinogen could be detected.

Dr. A. LOUISE MCILROY read a paper on the Origin of the Follicle Cells of the Ovary, which was illustrated by many lantern slides and photographs.

## MEDICAL SOCIETY OF LONDON.

*Influence of Diabetes and Gout on Tuberculous Infections.—Influence of Syphilis on Tuberculous Infections.*

A MEETING of this society was held on March 13th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. NATHAN RAW read a paper on the Influence of Diabetes and Gout on the Tuberculous Infections of the Human Body. He said that diabetes and gout were both disorders of nutrition, each presenting symptoms of great dissimilarity. In diabetes the power of resisting microbic invasion was greatly diminished, whilst in gout it was decidedly increased. Physicians had long observed the intimate association of diabetes with tuberculosis and the tendency for pulmonary lesions of a tuberculous nature to supervene in the course of the disease. It was also well known that those persons who were disposed to acute attacks of gout were peculiarly immune to tuberculosis. His observations had been made as the result of a careful study of 62 cases of diabetes mellitus occurring in hospital and elsewhere during the last 12 years, including post-mortem examination of 27 cases. Of the total of 62 cases of diabetes, no fewer than 37, or 59 per cent., were affected with tuberculosis, chiefly the pulmonary form, only two patients having abdominal tubercle. A point of great interest was that on first examination only 11 patients had symptoms of pulmonary tuberculosis on admission to hospital (as far as could be detected); the remaining 26 patients developed the disease during the progress of the diabetes. A question of absorbing interest was, When did those diabetic patients receive the tuberculous infection? In the 26 patients who developed pulmonary lesions in hospital the infection could not have occurred there, as they were quite apart from such patients. He had long held the view that the great majority of cases of pulmonary and other forms of tuberculosis received the infection in the early years of life, and that the tubercle became encapsuled and quiescent for a varying length of time, only to come into activity about the period of adolescence. It might be that those persons who were predisposed to diabetes might be unusually susceptible to infection by tubercle bacilli, and that the increasing debility associated with diabetes favoured the rapid progress of a tuberculous infection. It was most rare for any case of pulmonary tuberculosis to develop diabetes. During the last 20 years he had had under his hospital care over 4000 cases of tuberculosis, and he could not recall a single instance (in whom the urine was sugar-free on admission) which developed diabetes mellitus. Gout was another mysterious disease of which they knew little. There could be little

[1] Johns Hopkins Hospital Reports, 1906, vol. xiii., p. 401.

doubt that changes in the blood were of the highest importance in determining an attack, and in his opinion the peculiar constitution of the blood plasma induced in some unknown way a high resistance to ordinary bacterial infection. It was unusual to meet with gout amongst the working classes, but exceptions did occur, and during the last 12 years he had had under his observation 27 patients who were admitted in the acute stages of the disease, and 24 had been seen in private patients. In not a single one of those patients had he been able to detect any trace of tuberculosis. He had, therefore, come to regard the gouty diathesis as antagonistic to tuberculosis. With a view to establishing the accuracy of the clinical experiment it occurred to him to observe the results of growing pure cultures of tubercle bacilli on media which had previously been mixed with blood from cases of diabetes and gout. After four weeks' incubation no growth was observed, and even after eight weeks there was only to be seen a slight irregular growth on the surface of the medium, without any distinct clumps of bacilli. A control experiment was made when the growth was luxurious and well marked in 14 days. Those examinations were repeated exactly with blood from another diabetic case and another gouty one, with precisely similar results. His conclusions from that work were: Diabetes predisposed to the development of tuberculosis; gout had an inhibitory effect on the growth of tubercle bacilli; the blood plasma was the determining factor in the growth or inhibition of bacterial infections within the human body.—A discussion followed in which Dr. F. DE HAVILLAND HALL and Dr. F. PARKES WEBER took part.

Mr. D'ARCY POWER read a paper on the Influence of Syphilis on Tuberculous Infections of the Human Body. He said there was a general belief that the tuberculous bore syphilis badly, but a little reflection showed that such a statement was too general to be of use, for the two diseases might occur under widely different conditions. Mr. Power divided his subject into:—A. Inherited syphilis: (1) a child with heredo-syphilis might acquire tubercle; (2) an adult with heredo-syphilis might become tuberculous. B. Acquired syphilis: (1) an adult with active tubercle might acquire syphilis; (2) an adult with acquired syphilis might become tuberculous late in life. That classification showed that syphilis and tubercle might be active at the same time and in the same individual; they might overlap or they might be widely separated in point of time. Each condition had its own prognosis and the results of the various combinations could not be summed up in a single sentence. The whole question was in need of elucidation, and he thought that valuable results would be obtained if medical men in general practice would record any observations which came under their personal notice. Formerly it was difficult to distinguish between syphilis and tubercle, but the advance of pathology now afforded scientific data in place of a clinical diagnosis. Mr. Power then read the notes of cases in which syphilis seemed to have prepared the way for tuberculous inflammation of the tongue and for tuberculous inflammation of the ankle. He also gave details of cases where acquired syphilis had acted upon tuberculous lesions, making them more active, and where tubercle attacking tissues late in life had been less destructive than usual owing to previous syphilitic changes. Mr. Power concluded his paper with the following propositions: 1. Children with heredo-syphilis often showed signs of tuberculous disease of the joints in the form of "gummatous" synovitis which did not improve beyond a certain point under treatment by antisyphilitic remedies. 2. In young adults born of syphilitic parents an attack of pneumonia or other infective disease might be followed by signs of syphilitic inflammation (syphilis hereditaria tarda). The syphilitic lesions thus manifested might become tuberculous and the patient might die from tuberculosis. 3. Adults who acquired syphilis whilst they were suffering from tubercle were liable to have any pre-existing tuberculous inflammations rendered much more active. It was to those persons that the generalisation applied "The tuberculous bore syphilis badly." 4. Old persons who acquired syphilis many years previously might be attacked by senile tuberculosis. The tuberculous inflammation ran a more chronic course than usual in such persons and there was less liability to suppuration.

After Dr. PARKES WEBER, Dr. DE HAVILLAND HALL, Mr. V. W. LOW, and Dr. RAW had spoken, Mr. D'ARCY POWER replied.

## OPHTHALMOLOGICAL SOCIETY.

*Three Cases of Optic Nerve Tumours.—A Morgagnian Cataract.—Granuloma of the Retina.—Exhibition of Cases and Specimens.*

A MEETING of this society was held on March 9th, Mr. G. A. BERRY, the President, being in the chair.

Dr. A. HILL GRIFFITH read a paper entitled "Three Cases of Optic Nerve Tumour," illustrated with a number of photographs and specimens. He said that two were specimens of intra-dural and one of extra-dural growth. In the first case there had been protrusion of the right eye for seven and a half years, and when seen the patient had marked forward displacement of the eyeball. Movements were good, except downwards. There was a lobulated swelling between the globe and the inferior edge of the orbit. Distinct resistance was encountered. Vision was J 16. The disc was pale and atrophic. At the operation the eyelids and entire contents of the orbit were removed by a circular incision, the eyebrow being preserved. The cavity was lightly packed with gauze. A month after the operation five Thiersch grafts from the patient's thigh were transplanted into the orbit. When seen recently the orbital cavity was well lined with skin, except at one spot. There was no discharge. Professor Lorrain Smith's report was that there were widely dilated lymphatics and lymph spaces in a matrix of vascular fibrous tissue. The larger spaces were lined with endothelium. In the second case there was marked displacement of the eyeball forwards, which had been noticed a few weeks. There was no sign of inflammation. The pupil only reacted consensually with that of the other eye. There was marked optic neuritis in the affected eye. There were no hæmorrhages. Dr. Griffith operated 11 days after seeing the patient and removed the entire contents of the orbit in one mass, the eyelids being first reflected towards the nose by means of a horseshoe incision, the flap being afterwards replaced and sutured. The tumour consisted of small round cells, the tissue was richly supplied with thin-walled blood-vessels, and there were many widely dilated lymph spaces. Especially around the lymph spaces the nuclei were massed together, and they varied in size and chromatic contents. The third case had had protrusion of the left eye for some years, and latterly it had increased. The eye movements were good. There was recent optic neuritis, with blurring of the edge of the disc all round. There were no hæmorrhages. Shortly before the operation the vision had fallen to 6/12, and there was well-marked proptosis. No growth could be felt. The external rectus tendon and outer canthus were freely divided, and then the growth could easily be felt, obviously surrounding the optic nerve. The entire orbital contents were removed. The growth consisted of cylindrical masses made up of large epithelium-like cells, with a round central nucleus. Dr. Griffith strongly recommended the procedure he adopted in these cases. It was better to remove the lids entirely by a circular incision.—The paper was discussed by the PRESIDENT, Mr. E. TREACHER COLLINS, Mr. J. B. LAWFORD, Mr. J. H. PARSONS, Mr. G. COATS, Mr. FRANK G. THOMAS, Mr. J. B. WHARTON, Mr. J. JAMESON EVANS, Mr. R. W. DOYNE, Mr. M. S. MAYOU, Mr. S. JOHNSON TAYLOR, Mr. H. B GRIMSDALE, Dr. T. HARRISON BUTLER, and Dr. GRIFFITH replied.

Mr. JOHNSON TAYLOR read a paper on a Morgagnian Cataract. The patient was an elderly spinster who had had the condition in the left eye 25 years, without any discoverable adequate cause. The eye, doubtless from long disuse, had become amblyopic, and, though the direct pupillary light reflex was quite brisk and the tension normal, the projection was very defective. During the operation, which was a difficult one, owing to the sunken state of the eye, the small size of the cornea, and the narrowness of the palpebral aperture, no trace of a nucleus was discovered, the whole lens was found transformed into a milky fluid with the exception of some inspissated material lining the capsule, which was removed by repeated introduction of iris forceps; after a subsequent needling the vision was 5/12 (most) and J 1. Two points were insisted upon: (*a*) That operation should not be refused just because the projection was bad, if the direct pupillary light reflex was brisk and the tension normal, especially in a long-standing case; (*b*) that prevention was better than cure, and that, as a general rule, one-eyed cataracts should be operated on before getting over-ripe

(except in persons of advanced age and those the subjects of serious disease), although the other lens was perfectly clear; the advantages of such procedure must counterbalance the disadvantages and possible risks.

Mr. FRANK THOMAS and Mr. GEORGE COATS communicated a paper on a Peculiar Form of Granuloma of the Retina. The patient, a lad of 18 years, became ill in March, 1908, with influenza. Afterwards he developed pain in the hypogastrium, and suffered from retention of urine and pyrexia. He had severe pain in the left brow, and became drowsy and irritable. Routine examination of the eyes showed, in the region of the left papilla, an area resembling a greatly enlarged disc, and consisting of a central flat structureless portion, of the colour of the fundus elsewhere, surrounded by a ring of swollen nerve fibres. The retinal vessels emerged from the inner edge of this ring. The right fundus was normal. Subsequently a discharge from the left ear developed, and he recovered. Nearly two years later he came to hospital again. The eye was blind and glaucomatous, the anterior chamber very shallow, and the retina detached. Enucleation was therefore performed. Pathologically an oval yellow mass, measuring 4 mm. by 2·5 mm., was found in the stalk of the detached retina close to the papilla. The growth was purely retinal, and consisted of densely crowded cells, mostly slightly elongated. There were very little stroma and no organisation within the mass, but on its vitreous surface a small quantity of old organised tissue was found. The iris stroma was atrophic, and many small new-formed vessels were present on its anterior surface. The corneo-iridic angle was occluded. Looking to the histological characters alone the growth resembled a sarcoma more than a granuloma, but this diagnosis seemed improbable in view of its small size and slight amount of growth in two years. Moreover, primary sarcoma of the retina was unknown. An inflammatory origin was therefore probable, perhaps associated with the illness from which he had suffered — an illness accompanied by fever and a septic focus in the ear. On the other hand, had there been a septic metastasis in the retina one would have expected, after two years, a fully organised cicatricial mass, not a richly cellular tissue; moreover, there seemed to be evidence of slow progression during these two years. The histological characters did not accord well with an origin by retinal or sub-retinal hæmorrhage.

Mr. GRIMSDALE showed a case of Crystalline Opacities in the Cornea; two patients in the same family.

Mr. W. H. BRAILEY exhibited a Fixation Speculum.

Mr. F. A. JULER brought forward microscopical sections of a Neoplasm involving the Iris, from a case shown on Nov. 10th last.

Mr. CHARLES WRAY showed a Sarcoma-like Growth in the Anterior Chamber with a 16 years' history.—Mr. LAWFORD, discussing Mr. Wray's case, said there seemed to have been something visible in the anterior chamber for 15 or 16 years, but the patient said that it had increased considerably during the last two years. He thought the most likely diagnosis was that there had been a mole or innocent tumour of the iris, which had now become sarcomatous. If it were sarcoma there could be only one line of treatment—namely, removal. He would be inclined to attempt to remove the growth, and a piece of iris with it, and to examine with the microscope, basing the subsequent procedure on what the microscope revealed. He did not counsel leaving it alone.

Mr. ELMORE W. BREWERTON showed a case of Cirsoid Aneurysm.

Mr. H. L. EASON exhibited a case of Relapsing Marginal Keratitis.

## HARVEIAN SOCIETY OF LONDON.

*Discussion on Colitis.*

A MEETING of this society was held on March 9th, Mr. J ERNEST LANE, the President, being in the chair.

Dr. SIDNEY PHILLIPS, in opening a discussion on Colitis, said that so-called membranous colitis included inflammatory or true colitis and non-inflammatory cases incorrectly called colitis; he thought the latter was frequently due to spasm of the intestine. The Plombières treatment was sometimes useful. He thought that simple colitis was sometimes an early stage of ulcerative colitis, and that there was no precise distinction between them; sometimes the whole of the colon was denuded of mucous membrane. Perforation sometimes occurred, and occasionally death was deferred for days after this accident. Among symptoms were acute paroxysms of abdominal pain and also leucocytosis; neither of these occurred in typhoid fever. Hiccough was a common symptom. Prognosis was doubtful; where mucous colitis was excluded the mortality was high. As to etiology, he did not think that lead poisoning was a cause, but was convinced that acute colitis might result from articles of food or from water, and quoted cases. He thought that asylum dysentery was true dysentery, but in London colitis rarely gave bacteriological evidence of identity with amœbic dysentery. As to treatment, drugs were of little use, though calomel and opium were of value. The worst cases might recover, and appendicostomy was sometimes useful. Vaccine treatment was of use, but in very acute cases the prospects of success were small.

Mr. D'ARCY POWER said that chronic colitis might be due to simple irritation, protozoal infection, or bacterial infection, and that two classes were recognisable: (1) in which the cause could be found; and (2) in which there was a toxæmia from ulceration of unknown cause. Thorough examination was required for diagnosis, the bowel being washed out and examination made by the finger and the sigmoidoscope. Gross causes thus recognised were: (1) scybala in sacculi of the intestine; (2) polypi or cancer; and (3) certain bacterial infections. Ulcerative colitis, however, occurred apart from these causes, the lesions being chronic, destructive and extensive, and producing toxæmia. He described a case of a man who suffered from chronic constipation which became worse, and blood appeared in the stools; fissures and ulcers appeared about the anus, and the patient lost appetite and vigour. The pulse became rapid and the temperature high and irregular; the mouth was septic and he suffered from swelling of various joints. Blood and mucus persisted in the motions, which were very irregular, sometimes being passed at short intervals. After simple treatment for a long period, appendicostomy was performed and the bowel washed out daily through the appendix, with local improvement, though the patient remained very ill. A vaccine prepared from the pus was employed. The patient continued to improve, but convalescence was extremely slow, and slight relapses were frequent. The diagnosis of this condition was easy in late stages, but in early stages it gave little indication of the severity of the disease, as the patients did not look as ill as they were. Mild remedies should only be employed for a short time, after which recourse should be had to vaccine therapy and if necessary to surgery. Appendicostomy did not cure the condition, but helped to keep the bowel clean and prevent absorption of toxic products. It led to material improvement in the condition even in advanced cases, though relapses—generally temporary—might occur. For irrigation, many drugs caused irritation; he preferred carbonate of bismuth, permanganate of potassium or allmatein, and in later stages perchloride of mercury, zinc sulphate, or nitrate of silver; chlorodyne was a valuable anodyne.

Dr. W. HALE WHITE said he thought the main cause for membranous colitis was constipation. Ulcerative colitis might be secondary to disease of the appendix. Pain was an important aid to diagnosis. Acute membranous or ulcerative colitis might occur in Bright's disease. Shiga's bacillus was rarely found, but the B. coli was very frequent. The distinction between primary and secondary colitis was important. It might be secondary to infective disease, irritation, injury, or malignant disease. Primary colitis was of better prognosis. The bowel should be kept clean and empty. In mild cases castor oil should be used with rectal irrigation with plain water if necessary; failing this appendicostomy should be performed. The operation was rarely necessary in membranous, but usually so in ulcerative, colitis. Vaccine therapy was a useful addition.

Dr. JOHN MATTHEWS said that he was usually called upon to identify the organism involved in colitis and not to make a clinical diagnosis. Sometimes he had obtained organisms direct from the ulcers through a speculum which were pure B. pyocyaneus. Inoculation with this organism led to rapid improvement. Another case met with similar success with Friedländer's bacillus. As a rule he made a thin emulsion with the fæces and planted this upon neutral-red lactose-agar

plates from which discrete colonies of different organisms could be isolated. Diagnosis was made by estimation of the patient's opsonic index to the various organisms. He maintained strongly that infecting organisms do not appear in the urine, and he found that catheter specimens in these cases were almost invariably sterile. As a rule he used vaccines of coliform bacilli and occasionally a streptococcus vaccine. He gave statistics of the organisms which he had found in such cases and of his results. Out of 16 cases under his own charge he had had 10 complete recoveries.

Dr. C. W. BUCKLEY regarded mucous colitis as a catarrh of the mucous membrane due to retained fæces or bacterial toxins, and thought that associated neurasthenia or arthritis was due to the same cause. He described the Plombières treatment and he ascribed its effects to removal of toxins. He discussed the value of the fluids used at various spas and emphasised the importance of selecting a spa according to the requirements of the patient, and the necessity for skilled attendance.

Mr. L. A. BIDWELL said that colitis should generally be treated by medical methods and that surgical treatment was comparatively rarely needed, but he wished to speak on operative methods. He agreed that colitis sometimes depended on appendicitis and found that the removal of a diseased appendix often led to cure, but not always. If the appendix were healthy appendicostomy should be performed, but if diseased it should be removed. A form of colitis with single deep ulcers producing adhesions was a distinct type. In these perforation often followed, and since they showed a tendency to recur he advocated ileo-sigmoidostomy. This operation was only to be performed when the lower half of the sigmoid was healthy as determined by the sigmoidoscope. The ileum should be divided between the anastomosis and the cæcum. Troublesome diarrhœa did not follow the operation.

Dr. W. H. WILLCOX also spoke.

## LIVERPOOL MEDICAL INSTITUTION.

*Exhibition of Specimens.—Sleeping Sickness.*

A MEETING of this society was held on March 2nd, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. W. THELWALL THOMAS and Dr. STOPFORD TAYLOR showed: 1. A large Intracanicular Fibroma of the Breast (weight 7 lb.) containing cyst removed from a patient, aged 44 years; the fibrous tissue was undergoing myxomatous degeneration and in one place had fungated through the skin. 2. A large round and oval-celled Periosteal Sarcoma of the Scapula of a female, aged 20 years; an interscapulo-thoracic amputation was performed. 3. A large Cancellous Exostosis from the lesser trochanter of the femur in a patient who had 14 others, small in size, distributed at the epiphyseal ends of many of the long bones.

Mr. D. DOUGLAS CRAWFORD showed: 1. A Right Kidney with large branching calculus removed from a woman, aged 65 years, producing no symptoms except occasional pus in the urine. 2. Volvulus of the Lower End of the Small Intestine, which had lodged in the pelvis, producing symptoms of appendicitis in a woman, aged 31 years; it was excised with excellent result. 3. With Dr. MOORE ALEXANDER: Embryoma, probably Malignant Degeneration of the remains of Branchial Cleft, from a man, aged 21 years, which had grown rapidly recently. Cysts were present. Microscopically there were carcinomatous masses and tubes lined by ciliated epithelium.

Dr. K. W. MONSARRAT showed a Sacral Dermoid.

Dr. ERNEST E. GLYNN showed: 1. A specimen of Cellulitis and Suppurative Thrombosis of the Orbit due to Actinomyces; pus was found in the sella turcica. The source of infection was not discovered. 2. Multilobular Cirrhosis of the Liver, with multiple, small, old and recent red thrombi in the capillaries and smaller branches of the hepatic and portal veins. The cause of the thrombosis was not discovered. 3. Enormous Dilatation of the Bladder without Obstruction from Urethral Stricture or Enlarged Prostate; the dilatation was proved microscopically to result from chronic interstitial myositis following chronic cystitis.

Dr. R. J. M. BUCHANAN demonstrated a Method for the Examination of Red Blood Corpuscles by means of Edington's solution in combination with stains. The blood was mixed in a Thoma-Zeiss pipette, with a solution, then placed on a slide and allowed to dry. The erythrocytes by this method did not undergo any distortion from spreading.

Dr. BUCHANAN read a note on the appearance of the Erythrocytes from a case of Recurrent Attacks resembling Henoch's Purpura for 13 years. When examined by the method just described 90 per cent. of the erythrocytes from the peripheral circulation contained one or more peculiar basic staining bodies not unlike parasites. The blood in the urine contained identical bodies.

Dr. J. O. WAKELIN BARRATT exhibited the Technique of making Models of Cells undergoing Mitosis. This demonstration was illustrated by models, sections under the microscope from which the models were constructed, and by lantern slides. Reference was also made to the bearing which the forms of mitoses exhibited had upon pathological processes, particularly upon cancer and proliferating surface epithelium.

Dr. J. W. W. STEPHENS read a paper on Recent Researches in Sleeping Sickness, dealing with the following points: 1. Were there other species than trypanosoma gambiense which caused sleeping sickness in man? He pointed out that some of the trypanosomes had a nucleus at the posterior end. This trypanosome was also far more pathogenic for animals than T. gambiense. It remained to be seen whether this trypanosome was really different from gambiense. 2. The mode of transmission of T. gambiense. Up to recently it was believed that the transmission was mechanical, but recent work had shown that the fly was not infective until 20 or 30 days after biting an infected person. 3. What was the reservoir of sleeping sickness? Probably antelope and cattle and some of the domestic animals must be regarded as potential reservoirs. 4. Was sleeping sickness curable? In the early stages it was practically certain that some cases had been definitely cured by arsenic or antimony used in various ways, but if the trypanosome gained access to the subarachnoid space it was doubtful whether a cure was possible.—Dr. K. A. GROSSMANN asked whether any explanation could be given of the increased virulence of sleeping sickness in Africa?—Dr. STEPHENS, in reply, stated that sleeping sickness had been known for about 100 years, and that where a virgin population existed the disease spread with terrible rapidity, but that in other areas where the disease was still endemic it appeared not to spread. The explanation of the difference was not clear.

*Exhibition of Cases —A Rare Arthropathy.—Septic Puerperal Thrombo-phlebitis of the Pelvic Veins.*

A MEETING of this society was held on March 9th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. C. THURSTAN HOLLAND showed a series of lantern slides illustrating the Modern Short Exposure in X Ray Work: kidney stones taken with an ordinary coil and mercury break with exposure of less than one second; chests and stomachs taken with the Snook apparatus in a fraction of a second exposure; chests taken with the single flash 1/100th second Dessauer apparatus. It was interesting to note that the first successful radiograph taken in Liverpool in January, 1896, by Sir Oliver Lodge, was a hand with a bullet in it and that the exposure was one and three quarter hours.

Mr. C. G. LEE showed an infant aged 4 months. The patient had a Coloboma of the Iris in the Right Eye and a Left Microphthalmic Eye, placed far back in the orbit, with a large cystic swelling extending into the tissues of the lower lid. The skin of the lower lid was much stretched and of a bluish colour and semi-translucent. Mr. Lee said that whilst coloboma of the iris was, perhaps, the most common ocular developmental defect, microphthalmia was, with cystic extension, one of the rarer forms of this affection.

Dr. C. J. MACALISTER read a note on a Rare Arthropathy, and showed photographs of two patients suffering from it. The one case was a woman advanced in life, the other being a child aged 6 years. The characteristic features in each were that the knees were dislocated, both the ankles were ankylosed, and there were partial dislocations of both wrists, of the elbows, and shoulders; the neck was bent forward and fixed in the case of the woman; the small joints of the hands and feet were similarly affected. The disease in each case began somewhat acutely with fever and swelling of the affected joints. The initial attack was followed after periods of remission by other exacerbations, and the dislocation of the joints took place in each case rather suddenly.

The change was in its nature an osteo-arthritis, with rarefaction of the bony ends and disappearance of the cartilages. In the case of the child there was a condition of the skin resembling a scleroderma, and the skin over each knee resembled a thin cicatrix.—Dr. W. B. WARRINGTON pointed out that a sclerosing process affected in the more usual cases the skin only, as in the diffuse form of scleroderma, but that sometimes the muscles were also affected and in rare cases the bones as well. He alluded to an instance of the latter condition which had also been seen by Dr. Macalister, Mr. Robert Jones, and Dr. F. H. Barendt.

Dr. W. BLAIR BELL read a paper on Septic Puerperal Thrombo-phlebitis of the Pelvic Veins. In the first place the pathology of the condition was discussed, next the frequency of occurrence and prognosis. It was pointed out that according to the figures of Lenhartz, Trendelenburg, and others septic thrombo-phlebitis was the only gross lesion found in one-half of the cases that died from puerperal sepsis; in other words, at least one woman in every thousand delivered died from this condition. The question of operation was based upon the principle accepted in tying the internal jugular vein in septic infection of the ear to prevent general pyæmia. At present the mortality of the operation was extremely high because it had nearly always been resorted to as a last expedient. With earlier operation the mortality would be reduced. The diagnosis was the chief difficulty. The following points should be considered: (1) The late onset—10 to 20 days after parturition and following a moderate degree of morbidity; (2) rapid rise in temperature and pulse-rate generally with rigors; (3) mobility of the uterus; (4) absence of pain; and (5) dark colouration of the cervix from venous congestion. Two cases upon which Dr. Blair Bell had operated were described: the first, an unsuccessful one, had already been recorded in full, the second had recently been the subject of the operation and was now quite well. Dr. Blair Bell pointed out that the operation was a great scientific advance on the expectant treatment, which had resulted in a general mortality for all cases of at least 65 per cent. With early diagnosis and operation the mortality should be reduced to about 5 per cent.—Dr. ERNEST E. GLYNN considered that general pathological considerations justified the operation.—Dr. ARTHUR J. WALLACE spoke in favourable though guarded terms of the procedure, whilst Professor H. BRIGGS held that familiarity with figures and statements concerning the past—peripatetic—methods of treatment in cases of puerperal fever brought out the fundamental difficulty in separating the local from the general infections. He himself was a firm advocate of early local treatment, but believed that on the evidence now available the term septic thrombo-phlebitis was misleading from confusion between the changes in the thrombi themselves and in the surrounding tissues.

## LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

*Inhibition of Growth of Inoculable Tumours in Rats.—The Human Pituitary Gland.—Nutrient Media for Naked-eye Recognition of B. Diphtheriæ.—Exhibition of Specimens.*

A MEETING of this society was held on March 3rd, Dr. J. B. HELLIER being in the chair.

Dr. A. S. F. GRÜNBAUM and Dr. H. G. GRÜNBAUM made a communication on Inhibition of Growth of Inoculable Tumours in Rats, showing, among other things, that antivenom serum caused almost invariably regression of growths which were within a certain size limit at the time of its injection. An apparent antagonism between tumour growth and immunisation to cobra venom was also described.

Dr. A. S. F. GRÜNBAUM and Dr. H. G. GRÜNBAUM gave an account of the Human Pituitary Gland based on the examination of over 50 specimens. They showed that the colloid material did enter the blood vessels, and drew attention to the frequent occurrence of multinuclear areas in cases of malignant disease.

Dr. MYER COPLANS showed specimens of new Culture Media as a means for the readier recognition of B. diphtheriæ in subcultures from swabs of suspicious nose and throat cases. The media were made as follows: To sheep's blood serum to which there had already been added 1 per cent. glucose—acid producer—and 1 per cent. of ½ per cent. aqueous solution of neutral-red—indicator—(this preliminary combination being denoted as "S")—there were added, either singly or in combination, one or more of the following salts: (*a*) potassium sulphocyanate, 1 per cent.; (*b*) potassium ferrocyanide, 2½ per cent.; (*c*) potassium ferricyanide, 1 per cent.; (*d*) boric acid, about 1 per cent. The medium on coagulation and inspissation should be faint primrose-yellow in colour, the reaction being faintly alkaline. The sheep-serum was best pipetted off from recently drawn clotted blood and then allowed to stand in a refrigerator for three days in order to eliminate red corpuscles by sedimentation, only the supernatant liquid being finally utilised. With combination S. (*a*) B. diphtheriæ grew red with a bluish-pink tint diffusing through the medium in all directions; B. Hoffmann grew yellow with yellowish diffusion; some varieties of staphylococci simulated B. diphtheriæ on culture but on further incubation the tint did not intensify as with B. diphtheriæ and should be readily distinguished; B. subtilis grew brownish; B. megatherium and torulæ grew as faint pinkish-white colonies which were raised; streptococci grew apparently colourless. Combinations S. (*a*) (*b*), S. (*b*), and S. (*d*) in particular showed up to advantage the reddening and bluish-pink diffusion brought about by B. diphtheriæ as compared with various staphylococci. Confirmation as to the diagnostic value of the combination S. (*a*) had been furnished by Dr. C. Rankin, senior assistant medical officer to the Leeds City Fever Hospitals, who had used the medium in more than a thousand cases as a test for the absence of B. diphtheriæ from the nose and throat in patients already convalescent from the disease as a preliminary to their discharge from hospital. Suitable control measures had been carried out all along, and as a result of this experience it was possible to adopt the dictum, "no red colouration, no B. diphtheriæ," seeing that there had not as yet been a single exception to the rule. The test was by means of the naked eye and the labour of microscopic examination was greatly reduced since it was possible after a short experience to distinguish readily, at a distance, the various tints produced, either from the front or back of the changed medium. In case of doubt further incubation intensified the tints and facilitated the naked-eye diagnosis. These results were part of a research to determine the effect of salts of saliva on the growth of the mouth and intestinal organisms in nutrient media.

Dr. COPLANS further showed slides—(1) Splenic Puncture (Kala-Azar); (2) Splenic Puncture, Kala-Azar Infantum (Infective Splenic Fever in Children, Mediterranean); and (3) Brain Section and Blood from a case of Malarial Coma.

Dr. HELLIER showed: 1. A Fœtus stillborn in the seventh month, showing complete absence of bladder, ureters, and kidneys. A well-formed uterus with normal appendages was present. The hands and feet were webbed. 2. An Intramural Abdominal Myoma removed from the Abdominal Wall during Pregnancy. The myoma had grown with great rapidity and showed some signs of necrobiosis. There were no ill effects from the operation.

Mr. H. LITTLEWOOD and Dr. M. J. STEWART showed specimen and section from a case of Adeno-carcinoma of the Sigmoid Flexure associated with Tuberculous Disease of the Right Fallopian Tube.

Mr. B. G. A. MOYNIHAN and Dr. STEWART showed the Viscera from a patient in whom complete gastrectomy for carcinoma was performed an May 31st, 1907. Death occurred on Feb. 1st, 1911, being preceded by grave anæmia for some months, between the onset of which and the operation the patient had remained well.

Dr. STEWART showed a specimen from a case of Epithelioma of the Pharynx; death occurred from impaction of a large piece of meat.

## DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.

*Sudden Serious Peritoneal Lesions.*

A MEETING of this society was held on March 3rd, Mr. J. M. ACKLAND, the President, being in the chair.

Dr. WILLIAM GORDON read a paper on the Diagnosis of Sudden Serious Peritoneal Lesions. He divided the conditions simulating sudden serious peritoneal lesions into: (1) intrathoracic diseases (pneumonia, pleurisy, pericarditis); (2) the four colics (hepatic, renal, pancreatic, intestinal); (3) nervous cases (locomotor ataxy, hysteria);

(4) acute irritant poisoning; (5) cholera and typhoid; (6) uræmia; (7) mucous colitis; (8) acute gastric dilatation; and (9) acute intestinal obstruction by gall-stones. He classified the "sudden serious" peritoneal lesions as follows: 1. Ruptured ectopic gestation. 2. Acute intestinal obstructions: intussusception, strangulation by bands, volvulus, internal hernia, strangulation through apertures. 3. Perforations of the alimentary canal: gastric ulcer or cancer, duodenal, typhoid, tubercular, appendical, of the colon. 4. Rupture of other structures except abscesses: gall-bladder, common bile-duct, ovarian cyst, bladder, hydatid cyst. 5. Rupture of abscesses: appendical, pyosalpinx, lymph gland abscess, acute phlegmonous cholecystitis, liver abscess, empyema, renal abscess, pericardial abscess, subdiaphragmatic abscess, suppurating ovarian cyst. 6. Acute torsions (not intestinal): ovarian cyst, subperitoneal fibroid, dilated Fallopian tube, wandering spleen, floating kidney, undescended testis, omentum. 7. Acute pancreatitis and pancreatic hæmorrhage. 8. Acute peritonitis not due to the foregoing (tuberculous, gonococcal, pneumococcal). 9. Sudden vascular lesions: rupture of aneurysms, portal thrombosis, embolism of superior mesenteric artery. Dr. Gordon considered the term "abdominal catastrophe" as one embracing at the same time too much and too little. Peritonism, again, was a term purely symptomatological, and not wholly satisfactory at that, whilst the expression "acute abdomen" was obviously only an ingenious makeshift. He ventured to submit that in practically all the conditions recalled, when they spoke of abdominal catastrophes, the common factor which determined the clinical course was the peritoneal lesion. He further suggested that this lesion was characterised by symptoms of sudden onset, and by consequences too grave to associate with merely trifling injuries. He hoped therefore that by a grouping together of these lesions their knowledge of them might become more precise, and some advance be made in the matter of diagnosis. In considering the intrathoracic diseases which might simulate peritoneal lesions Dr. Gordon drew special attention to pericarditis and the motionless abdomen in respiration which might accompany it. He also mentioned as a valuable sign the absence of, or at all events reduction in, the plantar and pharyngeal reflexes in hysterical cases. Here also a leucocyte count would be of value. The difficulties met with in the diagnosis of acute dilatation of the stomach simulating obstruction and of obstruction by gall-stone were referred to at some length. Turning to the lesions which formed the main subject of his paper Dr. Gordon said that he merely intended rapidly to review them and to suggest points for discussion. The administration of opium would obscure almost all the diagnostic features on which he was about to lay stress. He considered that ruptured ectopic gestation was more often missed from oversight than from ignorance, and urged the marked and increasing pallor as a prominent sign. Fortunately, conditions with which it might be confounded called for the same treatment. In acute intestinal obstruction Dr. Gordon raised the question as to whether the period of repose, so often seen in perforative cases, was not absent. He found himself in a vast field when confronted with the perforations and felt obliged to limit himself to a few points. He was of opinion that upward extension of gastric resonance was more important than loss of liver dulness in the mammary line, often late in its appearance and often misleading. He put as a question to the surgeons present whether, as a point of contrast, shock did not develop rapidly after a perforation, whereas in strangulation the condition was of gradual onset. Dealing with rupture of abscesses and their diagnosis Dr. Gordon mentioned the ease with which most of these conditions could be confused with appendicitis; for example, ruptured pyosalpinx or phlegmonous cholecystitis. Pancreatic lesions might often simulate obstruction, but points to be noted were absence of fæcal vomiting and an epigastric swelling. Jaundice with no sign of hepatic disease would be suggestive. The stools should be carefully observed. Where doubt existed as to the diagnosis between gall-bladder or pancreatic tumour Dr. Gordon suggested the knee-elbow position, when a gall-bladder would come to the palpating hand and a pancreatic recede from it. Vascular lesions could rarely be diagnosed except by operation. Dr. Gordon finally asked for the opinion of the society as to (1) whether diagnosis would not be intensified by a closer study of abdominal pain in all its aspects; (2) importance of time of onset of collapse in diagnosis; (3) blood examinations as an aid to diagnosis; (4) the value of more frequent examinations under anæsthetics; and (5) how far a study of the vomited matter helped them in distinguishing lesions.

Mr. F. W. LANGRIDGE described what he considered to be the mechanism concerned in abdominal movements, and alluded to the viscero-motor reflex. It did not follow that abolition of this reflex meant acute peritonitis.

Dr. R. V. SOLLY did not consider that the taking of one blood film was of much help to a diagnosis. Unless a series were examined the results might be most misleading.

Mr. R. PICHARD quoted a case on which he had operated and where the signs of perforation were practically absent. He brought forward this case as an example of an undisturbed temperature, pulse, respiration ratio in perforation, and as going to prove that the negative aspect of symptoms was far less reliable than the positive.

Dr. J. RAGLAN THOMAS recalled a case resembling in all outward particulars a ruptured ectopic gestation, but which at operation proved to be rupture of a pelvic abscess.

Mr. ADAMSON remarked on the frequency with which relatively unimportant symptoms prior to the onset of an acute lesion mislead one. He instanced the case of a girl who had been under his care for symptoms suggestive of gastric ulcer, and to whom he was urgently summoned. Taken with her previous history her condition suggested acute perforation, but on opening the abdomen that cavity was found to be full of blood originating from the rupture of a broad ligament vessel. Mr. Adamson also held as equally misleading the variability of pain and the difficulty which lay in its interpretation.

Dr. GORDON replied.

## EDINBURGH OBSTETRICAL SOCIETY.

*Toxæmia of Pregnancy.—Gastro-mesenteric Ileus as Post-operative Complication in Abdominal Cases.—Double Tuberculous Pyosalpinx.*

A MEETING of this society was held on March 8th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. R. W. JOHNSTONE read notes on Some Experiments on the Anaphylactic Theory of the Toxæmia of Pregnancy. After describing the condition of anaphylaxis and instancing some of its manifestations, he referred to the fact that Anderson and Rosenau in 1908 first suggested a possible connexion between anaphylaxis and the toxæmia of pregnancy. The points of resemblance were chiefly the occurrence of convulsions during life, and after death the presence of multiple hæmorrhages throughout the body. The theory was that some alien protein might pass from the placenta to the mother and supersensitise her, and that a second transference of the same substance after a suitable interval might account for the onset of convulsions and other symptoms. Anderson and Rosenau obtained anaphylactic symptoms in a guinea-pig by using an extract of guinea-pig's placenta, which, however, was allowed to autolyse before use. Dr. Johnstone in his experiments used extracts of fresh human placenta and also extracts of guinea-pig and rabbit placentæ. He obtained no positive results with eclamptic human placenta. No results followed the use in pregnant guinea-pigs or rabbits of extract or emulsion of placenta from animals of the same species. By the use of extract of normal human placenta he obtained anaphylaxis in 8 out of 12 rabbits. This he regarded as definitely due to placenta proteins. The fact, however, that he was unable to confirm the results of Anderson and Rosenau in the use of homologous placental extracts appeared to negative any connexion between anaphylaxis and the toxæmia of pregnancy.—The PRESIDENT, Dr. A. H. F. BARBOUR, Dr. J. W. BALLANTYNE, Dr. H. O. NICHOLSON, and Dr. JAMES RITCHIE discussed the paper.

Mr. E. W. SCOTT CARMICHAEL read a paper on Gastro-mesenteric Ileus as a Post-operative Complication in Abdominal Cases. He instanced three cases. He had operated on the first for suspension of a retroverted uterus. The patient began to vomit on the third day and continuously till the seventh. She was extremely ill and seemed to be suffering from delayed chloroform poisoning. The nurse turned her on to her left side and somewhat on her face, when she vomited from two to three pints of fluid, and was never sick

again, with complete recovery. Mr. Carmichael was called to see a patient, in the absence of the surgeon, who had been operated on for hydatid cyst of the liver. Sickness had begun on the day after the operation and had continued uninterruptedly for a week, when general peritonitis was suspected. She was emaciated, dyspnœic, and in great distress. The abdomen was distended, but especially in the epigastrium and left half of the abdomen as far as the hypogastrium, but though tender the abdomen was soft, and splashing could be detected. A stomach-tube was passed and five pints of straw-coloured fluid were drawn off. This gave great relief, but in a few hours the vomiting had returned and the patient was very ill. As she was very weak, and rather than expose her to the risk of her atonic stomach filling again, he decided to perform a gastrostomy under ether, removing at the same time 4½ pints of fluid. The stomach was found to be a flaccid bag completely atonic, extending into and filling the pelvis and left iliac fossa. The dilatation extended into the duodenum as far as the duodenc-jejunal flexure, the rest of the small intestine being completely collapsed. After emptying the stomach it contracted visibly up to almost its normal dimensions. The patient died suddenly five hours after operation from exhaustion. A post-mortem examination revealed the stomach and duodenum almost normal in size and no obvious cause to explain the condition. A third case had also dilatation of the stomach with splashing and succussion, with continuous vomiting for three days. The condition was immediately relieved on emptying the stomach with a stomach-tube. Two days after there was vomiting of one pint of bilious fluid without effort, and then it ceased entirely. The chief etiological factor in all these cases seemed to be some condition which produced paralysis with hypersecretion. A similar condition had been observed to complicate eclampsia and puerperal septicæmia. It was important to recognise the condition early, and it should be suspected in all cases of chloroform sickness persisting after the second day. The fluid vomited was very irritating to the lips and cheeks. If recognised early, practically all could be cured by passing the stomach-tube. As a last resort, where the condition has led to the starvation of the patient, gastrostomy, jejunostomy, or gastro-enterostomy has been performed to drain the stomach.—Dr. BARBOUR, Dr. JOHNSTONE, Dr. NICHOLSON, and the PRESIDENT made remarks on the paper.

Dr. BARBOUR and Dr. B. P. WATSON gave a demonstration of specimens of the Cystic Ovary, showing the different varieties and a lantern demonstration of the microscopical characters. The frequency with which the condition is associated with salpingitis was pointed out. This probably depended on secondary infection of the ovary from the tube, resulting in a sclerosis of the surface which prevents the rupture of the follicles. It is wrong to class these cystic ovaries among ovarian tumours, as there is no new growth, the cysts being simple retention cysts directly derived from the Graafian follicle.

Dr. BARBOUR and Dr. WATSON also described and gave a lantern demonstration on three cases of Double Tuberculous Pyosalpinx. In one the tube was so large as to reach the level of the umbilicus, filling up the whole hypogastric region. Lantern slides were shown to illustrate the pathology and mode of spread of the tuberculous process. The picture was the same in all. In the less dilated parts of the tubes there were extensive tuberculous deposits in the mucous membrane, which was greatly thickened and had the neighbouring projections fused together. In this mucous membrane there was a very marked proliferation of the epithelium, which was arranged in gland-like spaces and in solid masses, giving an appearance like carcinoma. Where the tuberculous process was advancing the epithelium was proliferating, but in the regions where many tuberculous deposits were present it was rapidly degenerating. In the more dilated parts of the tubes at the outer ends the mucous membrane was almost entirely destroyed by tuberculous ulceration, and in the very large tube a process of natural cure had occurred. At the undilated uterine ends the mucosa was healthy, but tubercle nodules were present in the muscle wall. From a study of the specimens Dr. BARBOUR and Dr. WATSON conclude that the infection is probably a direct one of the mucous membrane through the fimbriated end from the peritoneal cavity.—The PRESIDENT, Mr. SCOTT CARMICHAEL, and Dr. JAMES YOUNG commented on the paper.

# ROYAL ACADEMY OF MEDICINE IN IRELAND.

## SECTION OF SURGERY.

*Appendicular Dyspepsia and Treatment of Diffuse Peritonitis. —Appendicectomy.*

A MEETING of this section was held on March 3rd, Mr. R. H. WOODS, the President, being in the chair.

Mr. R. CHARLES B. MAUNSELL, in a paper on Appendicular Dyspepsia and on the Treatment of Diffuse Peritonitis, pointed out that the title appendicular dyspepsia was applied to a group of symptoms which had not had public attention drawn to it until Mr. Moynihan published his paper on the subject last year. Mr. Maunsell read the histories of a few examples, and stated that, in his opinion, there were two forms of the grouping of symptoms. In the first form the symptoms were mainly gastric, in the second mainly intestinal. A warning note was sounded with regard to other possible abdominal causes of reflex gastric disturbance, and special attention was drawn to the fact that the demonstration of chronic appendicular disease did not eliminate the possible presence of organic gastric disease. The concluding portion of Mr. Maunsell's paper consisted of a strong condemnation of flushing with saline solution in cases of peritonitis following perforation of the appendix, and advocating removal of the appendix and the insertion of "cigarette" drains into the pelvis and kidney pouches, which method of treatment Mr. Maunsell and others had found uniformly successful even in most advanced and apparently hopeless cases of peritonitis.

Dr. W. S. HAUGHTON read a paper on Appendicectomy, with Special Reference to the Treatment of Adhesions. He recommended that in all cases of operation on the appendix during the "cold" stage a search should be made for adhesions, the result of previous attacks of acute inflammation. There would be found in many cases kinks in the intestine due to bands which should be divided. He had found in all cases in which he examined for it a thin membrane spread over the cæcum and ascending colon, rendered visible only by the fine network of blood-vessels which ramify in it. The division of this always caused the cæcum to bulge forward, showing that it had previously been bound down by this membrane. He advocated crushing the base of the appendix before removing it. The crushed part should be then cut through and invaginated beneath a purse-string suture.

Mr. MAUNSELL said he would be inclined to crush the stump close to the clamp, ligature with silk and top sew. The method advocated by Dr. Haughton, he said, sometimes led to hæmorrhage from the bowels.

Dr. H. STOKES mentioned a case of appendicular dyspepsia with symptoms suggesting duodenal ulcer. Subsequently pain was referable to the appendix, which was removed. It was very diseased, while the duodenum seemed normal, but the dyspepsia remained. He thought adhesions in the chronic stage should be divided.

Dr. W. G. HARVEY said with regard to acute fulminating appendicitis that there were usually many abscesses, and unless the appendix was removed and all infected cavities were drained, the patient went from bad to worse. With regard to appendicular dyspepsia, he thought somewhat similar symptoms might occur in floating kidney, gall-stones, or pelvic trouble. Where the appendix lay behind the cæcum the symptoms produced simulated those of acute biliary obstruction.

Mr. R. A. STONEY said there was a condition which explained the recurrence of pain when the appendix was removed, and that was the dilatation and abnormal mobility of the cæcum. There was a stasis of abnormal contents in the cæcum. The opening from the appendix into the cæcum was dilated, which resulted in the passage of the intestinal contents into the appendix, and a chronic appendicitis was set up. These cases were supposed to be due to adhesions. When a ligature was applied to the stump of the appendix there was danger of locking up a certain amount of sepsis between the ligature and the purse-string suture. Pus might form and burst into the peritoneal cavity. He always ligatured the appendix with catgut instead of silk, and used silk for the purse-string suture. A distinct hæmorrhage might occur from the vessels of the appendix where

it was crushed and not ligatured, which hæmorrhage escaped into the cæcum.

Mr. L. G. GUNN, Mr. A. J. BLAYNEY, and Sir C. BALL also spoke.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held on March 10th, Mr. R. H. Anglin Whitelocke, the President, being in the chair.—Dr. W. A. P. Waters showed a case of Mitral Stenosis in a young man, aged 21 years, who had twice had chorea at an early age. Subjective heart symptoms were first noticed at 14 years. The heart was very large, with a marked retraction at the apex. The remarkable feature was an antero-posterior curvature of the spine, which had been becoming much more marked lately. The case was shown in order to elicit opinions whether the spinal and heart conditions were in any way related.—Dr. E. Mallam mentioned a patient with lateral curvature of the spine in whom he had watched the development of mitral stenosis. —Dr. A. G. Gibson mentioned the views of certain French writers that there existed a close relation between thoracic deformity and enlargement of the heart.—Mr. A. P. Dodds-Parker showed a case of Tertiary Syphilis which he had recently treated by the intravenous injection of salvarsan. The patient had been previously treated with mercury and potassium iodide with very partial success, but since the injection (three weeks previously) the lesions of the frontal bone had completely healed and a subcutaneous gumma near the angle of the jaw had aborted. The patient had had no inconvenience from the injection.—Mr. Dodds-Parker described the details of the intravenous and intramuscular methods of injection and demonstrated the apparatus.—Mr. E. C. Foster read the history of a case of Pyelitis following Pregnancy in a woman aged 30 years, the onset appearing two months after the birth of the child. She recovered but had several other attacks, three occurring two days before the onset of menstruation. Mr. Foster thought them due to retained products following pregnancy. Curetting was not done as the patient made fairly rapid recoveries, and was now in good health.—Mr. H. E. Counsell related the case of a postman, aged 22 years, who had laryngitis and sore-throat. Nothing more than an ordinary cold was suspected, and the patient improved a little on staying indoors. Six days later he had great difficulty in breathing and appeared moribund. He recovered, but the same day had another attack and died. There had been no laryngeal obstruction necessitating tracheotomy. A culture of the throat showed the presence of streptococcus. Subsequent questioning of his landlady showed that the patient had suffered recently from what appeared to be peripheral neuritis in the legs, that he had been in the habit of drinking enormous quantities of fluid, and that he had passed large quantities of urine. Mr. Counsell believed that this case was undoubtedly one of diabetic coma.—Dr. H. T. Gillett related the history of a middle-aged woman who was suddenly attacked with hæmorrhage from the bowel necessitating surgical interference. The greater part of the transverse colon was found to be much thickened and dark red in colour. The transverse meso-colon showed petechial hæmorrhages. As the patient had mitral regurgitation, the intestinal condition was thought to be due to infarct, and a short circuit was performed, but the patient did not recover. On post-mortem examination no evidence of infarct was found. The localisation of the affection to the middle part of the transverse colon was very definite. The mucous membrane and sub-mucous layer of the intestine were necrotic and showed the invasion of organisms from the lumen of the bowel. The muscular layer and peritoneum were in a state of acute inflammation.—Dr. M. C. Hayward related a case of Saccular Aneurysm of the Second Part of the Aorta in a man aged 58 years. The patient had persevered for six weeks in a rigid Tufnell treatment, which was effective in relieving all symptoms, but had left some wasting of the upper arm muscles; these had subsequently recovered their power. Later the patient developed an epithelioma of the palate, for which he was successfully operated upon, and was now in good health.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held on March 8th at the Royal Army Medical College, Colonel Sir David Bruce being in the chair.—Lieutenant-Colonel P. J. Freyer, I.M.S. (retired), read a paper on the Symptoms and Diagnosis of Stone in the Kidney, Ureter, and Bladder. After detailing the various symptoms present in these conditions, he laid special stress on the value of radiographs of the parts as a precedent to operation; in his opinion it was only in exceptional cases that one would be justified in operating on a suspected case of stone in the kidney or ureter without having the diagnosis confirmed by an X-ray photograph.—Dr. W. Ironside Bruce showed a number of Radiographs from cases of Stone in the Kidney, Ureter, and Bladder. In his remarks he emphasised the necessity for always taking the picture in a standard position.—Colonel H. G. Hathaway, A.M.S., read a paper on Ambulance Transport. After pointing out that there was likely to be a shortage of horses in future campaigns on account of the large growth of motor transport, he gave as his opinion that it would be necessary to provide motor transport for wounded in all cases except at the immediate front, where it would still be necessary to have horse transport on account of the difficulties of getting motor wagons over rough country away from roads. The use of motor transport would have many advantages, not only in the more rapid clearing of the front, but also in the greater comfort to the wounded and quicker attention to their needs in the better adapted hospitals of the rear. He discussed the various types of motor vehicle at present in use, and suggested that the most economical method of use would be to remove the body and replace it by a platform adapted for the carriage of wounded lying down or sitting up. If large users of motor transport in peace-time were subsidised it might be possible to arrange that they should have their chassis built to standard sizes which in war-time would fit bodies kept in mobilisation stores.—Major Crofton Atkins, A.S.C., said that the War Office had, of course, had the matter of motor transport under serious consideration for some time. Probably the best solution of the problem would be the subsidising of cars with a standard chassis; these would be registered and would be available for military purposes in case of mobilisation. It was doubtful if motors could be much used away from roads, but on roads he thought there was no doubt that they would add greatly to the comfort of the wounded as well as facilitate their more rapid removal to the rear.

# Reviews and Notices of Books.

*Puerperal Infection.* By ARNOLD W. W. LEA, M.D., B.S. Lond., B.Sc. Manch., F.R.C.S. Eng., Lecturer in Obstetrics and Gynæcology in the University of Manchester; Surgeon, Northern Hospital for Women; Assistant Surgeon, St. Mary's Hospital, Manchester. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 384. Price 25*s.* net.

THE advances made in the last 20 years in our knowledge of the bacteriology of puerperal infection have been very considerable, but even now we are not in a position to distinguish, at any rate by bacteriological methods, between the various forms which this disease may assume. The importance of this form of infection can hardly be overestimated, since it is still responsible for nearly half the deaths of women occurring in child-bed, and it certainly accounts for a very large number of the cases coming under the care of the gynæcologist.

These facts must be considered sufficient justification for the length of this monograph, extending as it does to some 384 pages. Dr. Arnold Lea has written the book with the intention of presenting what is known of puerperal infection with some degree of scientific precision, and certainly he has attained his object. Our only criticism of the work is that there is a great deal of repetition, and the whole suggests to the reader a collection of isolated essays rather than a single work dealing with the entire subject. If more care had been taken in this respect the contents of the book could have been compressed within a smaller compass with advantage. The repetition which exists is, however, not without its advantages, for the author is enabled thereby to make certain

important statements several times over, and in this way to lay a corresponding amount of stress upon them.

After a short chapter devoted to a historical review, Dr. Lea attempts to define and classify puerperal infections. On the whole he accepts the statement of von Herff that all forms of puerperal infection are due to invasion of wounds by living organisms, and must be regarded as essentially the same whether the organisms lead to intoxication or to general invasion of the blood-stream. After reviewing the mortality and morbidity of puerperal infection, the conclusion is arrived at that the mortality of this disease has been reduced to as little as 0·1 or 0·2 per cent. in lying-in hospitals, but that outside such hospitals it has shown little diminution, while the morbidity even in other hospitals is still between 10 and 20 per cent.

In the section dealing with the bacteria of the genital canal the results of 58 cases investigated by Dr. Sidebotham and the author are given, and it is stated that in 80 per cent. of the cases pyogenic organisms were found in the early days of the puerperium in the interior of the uterus. In view of the fact that in some 90 per cent. of the cases the puerperium ran an uneventful course, it is probable that such organisms exist only in small numbers and possess but little virulence. It has been suggested by Fromme and other observers that the virulence of any streptococci that may be present can be measured to some extent by their hæmolytic power. Although the researches so far carried out show that in cases of severe infection the streptococci present as a rule possess marked hæmolytic power, yet this is by no means a constant sign, since organisms having this same property may be found in cases running a perfectly afebrile course. As Dr. Lea truly remarks, it is not possible to assert therefore that hæmolysis forms an absolute distinction between the saprophytic and slightly virulent organisms and those which are pathogenic. In connexion with the question of auto-infection, he states that, while such infection is extremely rare, yet it may occur, inasmuch as the vulva and lower portions of the vagina frequently contain pathogenic organisms which may ascend into the uterus.

There are two very good chapters dealing with the general pathology and pathological anatomy of puerperal infection in considerable detail. Dr. Lea holds, and in our opinion quite rightly, that in the early stages of puerperal infection it is often impossible to distinguish with certainty between the symptoms due to pure toxæmia and those due to septicæmia, as in both forms of infection they are essentially due to the bacterial toxins. For the sake, no doubt, of completeness, one chapter is devoted to a consideration of the symptoms of puerperal infection as a whole, and another long chapter to a description of the symptoms of the various forms of local infection. This arrangement necessarily leads to a considerable amount of repetition.

The chapters dealing with treatment, both medical and surgical, are distinguished by a judicious conservatism. The operation of curettage is recommended only when retained products cannot be removed effectually by the finger, and when the lochial discharge, after washing out the uterus, still remains abundant and foul-smelling. In considering serum treatment it is pointed out that with the present methods of preparing antibacterial sera a great deal of uncertainty attends their use, while with regard to vaccines the author holds that it is not yet possible to form a final judgment on their value. Posterior colpotomy, whenever sufficient, is favoured rather than abdominal section in cases of peritonitis; and hysterectomy is regarded as useless as a means of preventing death from septicæmia, in the absence of local lesions, in all forms of general peritonitis, and in thrombophlebitic infection. Indeed, the author comes to the same conclusion as most other writers on the matter—viz., that we are far from a solution of the difficulty of treating these cases successfully. We notice throughout the book the not infrequent mistake of spelling "aërobic" with a diphthong.

The book forms an excellent *résumé* of our present knowledge.

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*Lectures on Biology.* By Dr. CURT THESING. Translated from the second edition by W. R BOELETER. With 6 coloured plates and 74 figures. London: John Bale, Sons, and Danielsson, Limited. 1910. Pp. 334. Price 10*s.* 6*d.* net.

THIS book consists of lectures which were given by Dr Thesing during the winter terms of 1905 to 1907 at the Humboldt Academy and the Urania in Berlin. Their avowed object is to show that it is no longer possible, having regard to the advances of modern research, to find complete satisfaction in being an out-and-out believer in the Darwinian or Lamarckian or any other theory. There are in all nine chapters. The first is entitled "From Thales to Lamarck," Thales being one of the seven wise men who attempted to establish a uniform principle of all phenomena. This original principle he sought in water. Erasmus Darwin is singled out as the first man who clearly enunciated the idea of evolution. The story is very readable, and well illustrated by reference to the evolution, uses, and modifications of limbs in different animals; while the proposition that it is the function which determines the form of all organs is supported by a study of animals of different classes but with the same life habits.

The second lecture deals with the "Phenomena and Conditions of Life." Proceeding from the dictum "All that moves lives," Dr. Thesing discusses motion in and by animals from the amœba upwards, deals with aeronauts and their ascents, deep-sea life, Regnard's researches and those of Bert on high atmospheric pressures; "gutter-fauna," e.g., bear-animalcules, apparent death, "dry-coma," the tenacity of life displayed by the lower organisms in the presence of cold, e.g., the survival of bacteria for seven days when exposed to a temperature of −190° to −225° C., all in turn receive attention. The cataplexy of W. Preyer is discussed, also Kircher's "experimentum mirabile" (1646) on a hen, and similar so-called hypnotic phenomena are introduced under the head of "Psychic Influences." We are told that the larva of corethra, a species of gnat, if placed in alcohol or osmic acid swims placidly about just as if it were in its proper element. Only after several days does this delicate little animal succumb to the effects of the poison.

The next subject is "The Forces of the Organism." At least twice there occurs this curious mistake when referring to Wöhler's synthesis of urea; it is given as "urine" (pp. 51 and 101). The term "fibre ducts" in bone must, we think, be a mistranslation. There is an interesting account of the architecture of bone. The author concludes that there is no need to assume the existence of a mysterious vital force in order to explain the purposeful construction of the bones or any other organs. One of the mysteries, however, will always remain hidden—consciousness, and so we are back at the famous dictum of du Bois Reymond "ignorabimus."

The fourth subject, "Building Stones of the Organic World," deals with cells and cell-life. Then follows an interesting chapter on the "Origin of Life," including the fantastic conceptions of Preyer and the cosmogenic views of the late Lord Kelvin. "The Evolution Theory," "Factors of Evolution," "Conservation of Life," and "Reproduction and Heredity" are pleasantly written sections rather in popular style. By way of illustrating phylogenetic relationships there are introduced hæmolysins, precipitins, and the "biological reaction." Other subjects considered are organic light production, artificial selection, colour adaptation, formative powers of light, symbiosis, transmission of

acquired characters, malarial parasites, mutation and Mendelism; and many other topics are interestingly discoursed on, the discussion including comments on the weakness of Darwin's theory of sexual selection.

The book is very readable and informing. There are some curious printer's errors, a few of which we note. "*Omni vivum*" for *omne*, "Erzengung" for Erzeugung, "scuttle fish" for cuttle-fish, "Remack" for Remak, "Columbia livia" for Columba. Eunuchs are described as having "very pronounced mammals."

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*Applied Anatomy.* By GWILYM G. DAVIS, Associate Professor of Applied Anatomy, University of Pennsylvania, &c. With 630 illustrations. London and Philadelphia: J. B. Lippincott Company. 1910. Pp. 630. Price 24*s.* net.

THIS work is, as the author himself tells us in his preface, "an attractive volume," being well printed and well illustrated. The 630 illustrations are mostly very good; many are original, and many are taken from the well-known work of Professor Piersol. Some exceptions to the general high standard of excellency must, however, be noticed. Figs. 172 and 176 both show a strikingly confusing picture of the great vessels of the neck appearing to pass superficially to the clavicle to reach the thorax; and Fig. 532 can not be named a success. The author has adopted the BNA terminology, but he has not followed it entirely, and it would have been better if he had included the universal nomenclature for the position and direction of the parts of the body, for on p. 177, in one paragraph, the terms "below" and "beneath" are used in different and very confusing senses—"below" apparently signifying caudal, and "beneath" signifying deep.

Professor Davis has dealt with the subject of applied anatomy in a wide sense, and he has embarked on a discussion of all that is best in anatomy. As a result he has produced a very useful book, which, if not embodying much that is new, contains a clear and accurate account of what is generally accepted. In places the information is in some need of being modernised, and the description of the testicle and its descent should certainly be made to conform more to modern knowledge. The author makes repeated appeals to embryology for the explanation of various pathological conditions, but embryology cannot be considered as one of the strong points of the work, and it would seem a pity to introduce the subject when such assertions as that the malformations of the bladder are due to the failure of union of "the two lateral halves of the bladder" are made.

While we have perused this book with much interest a very disturbing train of thought has been brought about in us by attempting to follow to their logical conclusions some of the very curious speculations of the author. Take as samples two sentences, at random, the one from p. 216 and the other from p. 222. "If the forearm were lacking and the hand were attached to the end of the humerus it would still be a very useful appendage, far more so than the stump which is left after the hand has been amputated." And, "If the upper portion of the femur was like the upper end of the humerus, the lower extremity would be continually rolling in and out, making walking or running at least difficult, if not impossible." The attempt to appreciate these speculations has reduced us to a condition of anatomical nightmare that is difficult to shake off. We prefer the reasonings of an older generation of anatomists, and to admire an organ for what it is—the perfect outcome of its functions—rather than to attempt to picture the results of its removal to some other part of the body. Besides this peculiarity of speculation the author has many little tricks of phraseology which are inelegant and it may be noted that "insert" is usually considered to be a transitive verb in English, although the author uses it differently. These peculiarities do not, however, seriously detract from the general utility of the work.

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*Hydrotherapy.* By GUY HINSDALE, A.M., M.D., Secretary of the American Climatological Association, &c. Illustrated. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 406.

IN the introductory part the author deals with the *rationale* of hydrotherapy, and the effects of baths on metabolism and the circulatory and respiratory systems. The various affections in which water can be therapeutically applied are then considered in order, after which detailed instructions are given as to the application of the remedial measures. Then baths and douches are described, and the use of packs, compresses, and douches. Lastly, the administration of mineral waters internally, "crenology," or "crounotherapeutics," is discussed, though briefly.

Dr. Hinsdale alludes to the corroboration by recent authorities, such as Kisch of Marienbad, and Simon Baruch, of the old observations of Robert Pierce of Bath, in 1713, and James Currie, in 1798, that absorption of the fixed constituents of water does not take place through the skin, and therefore that "mineral waters, the analyses of which are quoted with such particular exactitude, are neither more nor less efficacious on that account," when used as baths. The value of the cold bath in pyrexial and hyperpyrexial cases is fully discussed and mention made of the early (and forgotten) pioneers in this method, such as James Currie, the English ship surgeon just alluded to, and Hiram Carson of Pennsylvania. Since its revival by Brand in 1861 it has been widely used, but H. A. Hare has always favoured substitutes for the Brand method since his experiences with typhoid in 1900, and sponging is now preferred to tubbing, unless the temperature rises above 102·5° or 103°F. The author insists that "as the main object of the cold bath in typhoid fever, or any other febrile disease, is *not* the reduction of temperature, ..... even in such a serious affection as sunstroke ..... the good effect of the use of cold water ..... is accomplished only by the vigorous stimulation of the nerve centres, inducing an added power to withstand toxæmia." There are, however, many tropical practitioners whose experience leads them to believe that the actual abstraction of heat is the only thing that is effectual, be the explanation what it may. A good account is given of therapeutic measures in cardiac affections, and the Nauheim baths and Schott treatment are well described and illustrated; the utility of bath treatment in insanity is also dwelt on. The third section is devoted to the technical details of the application of heat and cold in every form, hot-air and the electric-light treatment, sand and mud baths being described, as well as the various forms of water treatment.

The last section deals with the internal use of mineral waters—"crenology." It is generally understood that a natural mineral water has a distinctly greater therapeutic power than a water artificially prepared having precisely the same chemical constitution. The author considers that "it is barely possible that the recent discovery of radio-active properties in some of these waters may afford some explanation of these qualities." At Bad Gastein the radio-activity in "milligramme minutes" for 10 litres of gas issuing from the spring is stated as 79·20; the presence of the radium emanation is considered to be the main source of the beneficent quality of these waters. At Neusser's clinic in Vienna a large number of patients suffering from gout, rheumatism, neuritis, and diabetes have been treated with waters from the mines in Joachimsthal, near Prague,

the locality where the greatest quantities of pitchblende and radium salts are found. This water has much greater power than that of Gastein.

A very large amount of practical information is contained in this useful volume, with abundance of illustrations.

## LIBRARY TABLE.

*Conferences on the Moral Philosophy of Medicine.* Prepared by J. W. S. GOULEY, M.D. London and New York: The Rebman Company. Pp. 368. Price 6*s.* net.—This little work is primarily a text-book of medical ethics, and in many ways is a most useful compilation. Dr. Gouley, however, ranges over many subjects ancillary to ethics, and such subjects are necessarily treated in a superficial manner. He imagines an aspirant to the medical profession inquiring of his family physician as to certain "items of information concerning the profession whose ranks he hopes to enter." The family physician, called by Dr. Gouley "the sponsor," thereupon begins by giving the aspirant a short sketch of the history of medicine, including the erroneous statements that "the great colleges of Oxford and Cambridge in England were founded late in the ninth century," and that "the University of Paris was originally started towards the end of the eighth century through the influence of Alcuinus who became one of its first professors." Dr. Gouley is on much firmer ground when he discusses the career of the medical student and lays down rules for his behaviour when acting as interne and during his early days as a physician in practice. One of the most valuable portions of the book is the National System of Medical Morals, adopted in the year 1847 by the American Medical Association, a code of professional morals which is excellent. Among other points with which Dr. Gouley deals is that of the young physician as a writer. His precepts, we must say, are better than his practice. He advises the young physician to avoid fine writing, but on p. 77 of his own book we find the following sentence describing a hospital patient: "..... not being judged fit to retire to bed, fatigued as he was and suffering with some contusions from sundry blows and heavy falls caused by inco-ordinate muscular action due to many free libations of fluids which at first more than gladdened his heart, was ordered to disrobe and be cleansed." But although we cannot praise the manner of the book and have felt compelled to notice erroneous statements, yet the advice which Dr. Gouley gives as to conduct is in general most praiseworthy.

*Landmarks and Surface Markings of the Human Body.* By L. BATHE RAWLING, M.B., B.C. Cantab., F.R.C.S. Eng., Surgeon with Charge of Out-patients at St. Bartholomew's Hospital. Fourth edition. With 31 illustrations. London: H. K. Lewis. 1911. Pp. 96. Price 5*s.*—Mr. Bathe Rawling is to be congratulated upon the appearance of a new edition of his useful little manual of surface markings. That the issue of a fourth edition was already demanded is better proof of the utility of the book than any comments written by a reviewer. Some years ago Mr. Rawling had the good fortune to appreciate that a need existed for such a book, and he also possessed the ability to write the very book that met the need. Professor Bertram Windle had shown the road that should be followed when he published his "Handbook of Surface Anatomy and Landmarks," and Mr. Rawling has advanced along somewhat similar lines to a stage as near to perfection as it seems possible to go at the present time. The book gives in a short space all the important landmarks and surgical surface markings; it defines them accurately and illustrates them well; and it includes no additional matter such as may always be found in either the text-book of anatomy or the text-book of surgery. The material has been presented in the handiest form, both for revision for examinations and for reference in practice, and it is therefore not surprising that the demands of the student and the practitioner have made a fourth edition necessary so soon.

*Nisbet's Medical Directory, 1911.* In two parts. Part I., Directory of Medical Practitioners. Part II., The Local Directory. London: James Nisbet and Co., Limited. Pp. 838. Price 7*s.* 6*d.* net.—This handy and inexpensive directory is very useful for general purposes. The names are arranged in one alphabetical series without any local subdivisions; the local directory in its turn naming alphabetically every place in the world where a British registered practitioner resides, with the names of the medical men living there. In some instances that we have tested changes of address that occurred so lately as the middle of December are duly noted here.

*Ambulance Examination Questions: Being a Catechism on First Aid to the Injured and Sick.* By D. M. MACDONALD, M.D. Aberd., M.R.C.P. Edin. Fourth reprint edition. Bristol: John Wright and Sons, Limited. 1911. Pp. 24. Price 6*d.* net.—The best method of learning is by frequent questioning. In default of a questioner the student should learn to question himself. The difficulty he often finds in attempting to question himself is how to word a question without first thinking of the answer, which is a reversal of the method that should obtain. This collection of questions will help the first-aid student to test himself as an examiner would test him. The necessity for a fourth reprint is a testimony to its usefulness.

*Garden Foes.* Pp. 336. Price 2*s* 6*d.* net. *Carnations, Picotees, and Pinks.* Pp. 187. Price 2*s.* 6*d.* net. *Salads and their Cultivation.* Pp. 110. Price 1*s.* By F. W. SANDERS, F.L.S., F.R.H.S. London: W. H. and L. Collingridge.—A beautiful garden appeals to everyone and should engender feelings of peace and repose, but, as those who cultivate fruits or flowers know, beauty of perfection in the garden can only be attained by a ceaseless warfare against many enemies. In "Garden Foes" Mr. Sanders tells us how best to deal with the pests and diseases which are ever ready to spoil or destroy the cultivator's work in the flower, fruit, or vegetable garden and in the greenhouse. Chapters are also devoted to the foes of forest trees. In dealing with the process known as "cyaniding," the author is careful to point out the dangers of sodium cyanide, and the process, useful as it is, should certainly not be used by any but experienced persons. The chapter on "A Few Friends" should prevent those whose knowledge of entomology is small from destroying creatures which are useful allies to the gardener. Under miscellaneous pests the author includes the cat, and his ingenious devices for keeping these animals out of the garden will be appreciated by all who know by experience the damage which the cat can do to a seed-bed or among growing plants. The book is well illustrated, the notes are practical, and there is a good index.——The cultivation and propagation of the genus dianthus are dealt with in "Carnations, Picotees, and Pinks." This is a favourite group of flowers with amateur gardeners, among whom are many medical men, and Mr. Sanders has produced a book which very fully discusses the subject. Cross-breeding receives careful attention, and instructions are given for dealing with insects and other pests which are sometimes a source of trouble to the carnation grower.——The book on "Salads" includes some useful receipts.

UNIVERSITY OF OXFORD.—The electors to the Radcliffe Travelling Fellowship have reported to the Vice-Chancellor that they have elected Mr. E. P. Poulton, B.M., Balliol College, to the Fellowship. Mr. G. B. D. Adams, Christ Church, has taken the degree of D.M.

# Reports and Analytical Records
FROM
# THE LANCET LABORATORY.

## PERGENOL.

(THE SACCHARIN CORPORATION, 10, ARTHUR-STREET WEST, LONDON, E.C.)

THIS is an interesting product which brings the use of hydrogen peroxide of definite strength into easy practical application. Pergenol is a molecular combination of sodium perborate and sodium bitartrate. The compound in water immediately yields hydrogen peroxide by the interaction of the two salts. The statement is correct that when one part by weight of pergenol is dissolved in four parts of water a solution of peroxide of hydrogen of B.P. strength is obtained. The B.P. peroxide is required to yield from 18 to 22 volumes of oxygen when treated with permanganate. We found that one part pergenol dissolved in four parts of water gave 19–20 volumes of oxygen. It is evident that pergenol provides a simple way of applying oxygen, and lozenges are made for dissolving slowly in the mouth and tablets for preparing a solution for brushing the teeth or for gargling. It may be noted that as the result of decomposition boric acid appears also with the peroxide of hydrogen, so that there can be no question of the antiseptic as well as disinfectant value of the combination.

## VALIDOL.

(WIDENMANN, BROICHER, AND CO., 33, LIME-STREET, LONDON, E.C.)

Validol is an interesting compound of menthol and valerianic acid, which has been known for some time for its valuable sedative properties; it has been used for the same purposes in fact as valerian preparations with, however, certain advantages. More recently it has been found of value in sea-sickness. In this connexion we have read a considerable amount of testimony in its favour, the evidence being furnished in general by ship surgeons. Validol is a clear colourless liquid with a peculiar but not unpleasant odour and mild taste; it is readily administered in a small glass of wine, which aids its favourable effect. In severe cases validol camphoratum has given distinct benefit.

## "VAPOROLE" EPININE.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

Epinine is the synthetic hæmostatic which is said to possess all the remarkable physiological properties of the suprarenal principle. Being a synthetic preparation, it can be obtained in a particularly pure state, while the preparations of epinine are stable. Physiological tests have established that action on the blood pressure which is so characteristic of the suprarenal principle. Epinine is supplied contained in a "vaporole" or in a stoppered bottle containing 10 cubic centimetres.

## SHAKER SALT.

(AGENCY, COSENZA AND CO., 95, WIGMORE-STREET, CAVENDISH-STREET, LONDON, W.)

This is a clean white salt which keeps its fine dry powdery condition owing to its purity and to the fact that 1 per cent. of carbonate of magnesia has been added to it. It is free from lime salts, but contains traces of sulphate. It does not cake or "lump." The pleasant saltiness of its flavour is due to the absence of impurities. We found present 98·86 per cent. of pure chloride of sodium.

## STANDARD GERM FOOD.

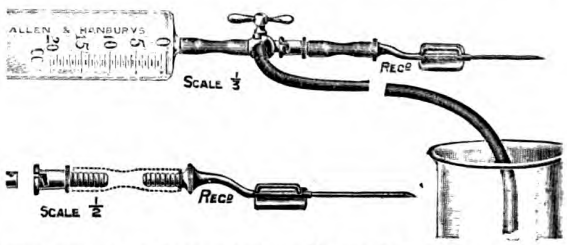
(H. W. MURFITT AND SON, DOWNHAM-ROAD, ELY, CAMBS.)

Analysis shows that this food cereal is rich in valuable dietetic constituents. Its composition suggests that it is rich whole wheat reduced to a fine powder and dried. The results of analysis were as follows: moisture, 4·50 per cent.; proteins, 11·90 per cent.; fat, 1·50 per cent.; mineral matter, 1·00 per cent.; carbohydrates by difference, 81·10. The mineral matter contains about half its weight of phosphoric acid. The food is entirely free from irritating branny particles. Practically 15 per cent. of the food is soluble in cold water, and this carries with it 0·80 per cent. of mineral matter. We regard it as a valuable cereal food presenting good dietetic points, and it can be employed in many agreeable ways, as with milk, for the preparation of a really nourishing article.

# New Inventions.

## A THREE-WAY SYRINGE AND CANNULA.

Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W., have constructed according to my suggestions a three-way syringe and cannula for the intravenous method of giving salvarsan. The needle, which is made of platinum with an iridium point, is only just over an inch in length, the advantages of a short needle being that it is not easily dislodged; is not likely to injure the vein or to perforate its walls; and the operator has more command over it. The point of the needle is on its under surface. Behind the needle is fitted a small plate, concave underneath, to lie more easily on the arm, and above it is a metal bridge through which a piece of tape can be passed and tied round the forearm or a piece of rubber tubing fastened by means of pressure forceps. The base of the needle then curves upwards and is fixed by means of a bayonet catch on to the three-way stopcock, which entirely prevents leakage. Between the catch and the needle there is a loose connexion made by thick rubber tubing. The advantage of this loose connexion is enormous, since any




movement is not transmitted to the needle, which not only prevents the needle becoming dislodged from the vein but avoids injury to the intima. The stopcock is fitted with a projecting piece on the right side, to which is attached some rubber tubing for the purpose of conveying the salvarsan solution to the syringe. The syringe, which should be all glass and of 20 c.c. capacity or more, fits on posteriorly by means of a small piece of indiarubber tubing, which enables any syringe to be used and again prevents leakage. To use the syringe the tap should be turned at right angles to the needle and some saline solution drawn up the long tube into the syringe, which should be emptied and refilled until all the air has disappeared. With the syringe full of saline solution the tap should be turned until it is parallel with the needle and some of the solution injected to remove any solid particle or air from the needle; then, with the stopcock open, the needle should be grasped by the plate behind it and inserted into a vein. The moment the needle enters the vein blood flows back into the syringe. The plate should then be fixed as above described and the tourniquet removed from the arm and some saline solution injected to be quite sure that no infiltration forms. The tap is turned back again, the tube transferred to the salvarsan solution, which is then aspirated into the syringe and injected. When the salvarsan solution is finished the tube should be transferred back to the saline solution, and finally a small quantity of this solution injected to wash out the vein and prevent any leakage of "606" into the subcutaneous tissue. To inject a dose of "606" in this way occupies about six minutes.

Harley-street, W. J. E. R. MCDONAGH, F.R.C.S. Eng.

## SELF-RETAINING MASTOID RETRACTOR.

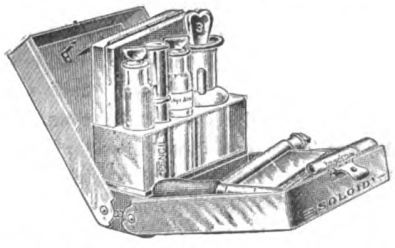
I HAVE for some time past tried to find a satisfactory self-retaining retractor, and having failed in the attempt have got Messrs. Mayer and Meltzer of Great Portland-street, London, W., to make one to my design. It is made in pairs, right and left. The body is constructed on the mouth gag principle, with ratchet action, one blade terminating in the oblong plate rounded off at one end to a point, and so constructed that, however deep it is inserted into the auditory meatus, it cannot injure the tympanic membrane. The opposing blade terminates in a row of hooks. The plane of the blades is such that when opened to the width of 1½ in. the action of the two blades is absolutely parallel. In practice it is used as follows. In the mastoid operation, after making the skin incision, elevating the periosteum and separating it from the posterior wall of the osseous canal, the retractor, with blades

closed, is inserted from above, the blade with the oblong plate being introduced between the periosteum and the posterior wall of the osseous canal and pushed well down. The retractor is then opened and the posterior lip of the skin incision engaged with the hooked blade. It is then further opened until the posterior lip of the incision is put on the stretch by the hooks, and all the structures in front are pressed against the anterior wall of the osseous canal by the plate blade, thus giving an absolutely clear view of the whole field of operation. The advantages of the instrument are: It retains its position throughout the operation; the one instrument is suitable for all sizes of meati; it mechanically prevents all oozing; it leaves both hands of the assistant free; and it takes the place of a skilled assistant. If the operator is attempting to conserve drum and ossicles, as in Heath's operation, the instrument does not leave him entirely at the mercy of a careless assistant.

CHAS. A. ADAIR DIGHTON, F.R.C.S. Edin.,
Honorary Assistant Surgeon, Eye and Ear Hospital, Myrtle-street, Liverpool.

## A BLOOD TEST CASE.

WE have received for inspection the "Soloid" Blood Test Case, No. 506, recently introduced by Messrs. Burroughs, Wellcome, and Co. of Snow Hill Buildings, London, E.C., which will prove of aid to the physician, since in many




more diseases than formerly was the case an examination of the blood is now made. Although the case is of pocket dimensions, the contents are so comprehensive as to include all the materials required for the speedy preparation of blood, pus, and tissue films. They comprise: one tube of "Soloid" brand Romanowsky stain (Leishman's powder), one 20 c.c. drop bottle, 10 c.c. stoppered phial of distilled water, 10 c.c. stoppered phial of methyl alcohol, 1 c.c. pipette, grease pencil, and vest pocket case containing six microscopic slides and Hagedorn needle in alcohol. Great skill and care have been exercised in designing the case, and it is of elegant workmanship.

## MEDICAL INSPECTION AND TREATMENT OF LONDON SCHOOL CHILDREN.

THE London County Council's arrangements for medical inspection and treatment were the subject of discussion—and condemnation—at a meeting called by the Fabian Society at Clifford's-inn Hall, Fleet street, E.C., on March 16th.

Sir VICTOR HORSLEY, who presided, said the London County Council system of medical inspection was a failure and did not fulfil the intentions of Parliament. The way the Council had dealt with the matter constituted a breach of faith with the nation. The staff of school doctors was inadequate and the organisation was ridiculous from a medical point of view. In support of the latter statement Sir Victor Horsley referred to the proposal to place Dr. Kerr under the control of Mr. Blair.[1] The parallel question of dental inspection had not been taken seriously into consideration by the Council, except for two "experiments" at Deptford and Poplar. As to treatment, Sir Victor Horsley declared that the only way of carrying it out was by means of school clinics.

Mr. R. A. BRAY, L.C.C., summarised very succinctly what the Council had done in regard to this question since it first came into prominence at the beginning of 1909.

Dr. H. BECKETT-OVERY, in the absence of Miss Margaret McMillan, discussed "What the Council ought to do," speaking strongly in favour of clinics, which, he said, were not, as some seemed to think, second-rate hospitals. It was essential to have an institution in close touch with the school, so that the coöperation of teacher, parent, doctor, and nurse might be secured. Most of the ailments from which the children suffered needed not so much treatment by specialists as constant attention by a nurse under the supervision of a doctor. With adenoids, for example, the removal was a minor part, subsequent physical and breathing exercises were more important. At Deptford the medical treatment of 5000 children was found to cost just over 2*s.* per head. Dr. Beckett-Overy's final point was that for a clinic the general practitioner could perform the best service and he could decide which cases should be seen by a specialist.

Dr. MARION PHILLIPS spoke of the incomplete way in which inspection was carried out. More time should be devoted to each case, the parent should be present, and it should be part of the school doctor's duty to give the parent some information as to the child's condition. The speaker dealt with the disadvantages of the present system of treatment through the hospitals, and said out-patient departments were totally unsuitable for the work. What was needed was a place to which the children could go regularly and get the nursing that home conditions made impossible.

The discussion was then thrown open, and many interesting points were raised. A parent aired his grievance that, though a contributor to various hospital funds, he had to pay for his children's treatment at voluntary hospitals. Another speaker urged that every effort should be made to influence members of the council to throw over the hospital scheme and institute clinics, and another that definite information as to the cost of clinics and the number likely to be required in London should be supplied to the Council.

Dr. HASTINGS supported school clinics from the point of view of the hospitals and their staffs. The hospitals did not want the routine work the present system gave them; they wanted the "interesting" cases.

Other speakers diverged into wider social problems, such as the need for improvement of the home conditions of the working classes.

In closing the meeting Sir VICTOR HORSLEY declared that the Board of Education ought never to have allowed the Council to embark on its present scheme.

[1] THE LANCET, March 18th, 1911, p. 760.

# THE LANCET.

*LONDON: SATURDAY, MARCH 25, 1911.*

## The Epidemic of Measles in the Metropolis.

THE recent behaviour of measles once more throws into relief the remarkable tendency of the disease to display over and above its well-known predilections for certain seasons of the year, and its rise and fall in "minor waves," often of biennial rhythm, fluctuations in major waves of prevalence. These peculiarities of measles epidemics were first clearly described by Dr. B. A. WHITELEGGE, in a paper on "Measles Epidemics, Major and Minor," read before the Epidemiological Society in 1892. Dr. WHITELEGGE referred in this paper to the major waves of the "thirties," the early "forties," the "sixties," and the "eighties," and the years which have since passed by have seen the wave of the "nineties" (1892–1898), and now once more from 1909 onwards another major wave is being developed. As in PHARAOH'S dreams, the fat years are followed by lean years; but the major waves of measles cover, as a rule, a longer period than the seven years, "such as were never seen in all the land of Egypt for badness," and, moreover, in the case of the measles waves the general perturbation is disturbed by minor oscillations, for upon the upward and downward slopes of the major measles waves there are superimposed the (usually) biennial minor waves and the annual oscillations associated with seasonal prevalence.

Reference to the measles chart in Sir SHIRLEY MURPHY'S annual report for 1909 clearly shows that since the prevalence of 1897–98 London has enjoyed comparative immunity from measles for fully ten years; then in the early part of 1909 followed a notable exacerbation; and after the customary biennial interval there supervenes in 1911 the epidemic prevalence which is now just reaching its height. The number of measles deaths has, in fact, risen in the last four weeks from 131 to 136, to 175 and to 197, the last-named total being apparently the highest total weekly number of deaths from measles ever recorded in London. This very serious mortality is the more emphasised because other infantile maladies have in recent years shown marked abatement. Dr. WHITELEGGE in 1892 coupled measles with whooping-cough as representing zymotic diseases which had exhibited "little tendency to diminish their ravages." Whooping-cough, as Sir SHIRLEY MURPHY'S chart indicates, has never shown its head above the mean line (1841–1909) since the year 1890, and hence the development of the present major wave of measles brings that disease into a position of special prominence. The recent decision to utilise the hospitals of the Metropolitan Asylums Board for the treatment of certain cases of measles is an important one, and will be, no doubt, attended by considerable reduction of case mortality, and the children of the very poor will be far better cared for in these institutions than in their own homes. But a good deal still remains to be done with regard to securing earlier knowledge of the development of cases of measles, with a view to the adoption of measures of isolation and prevention.

A comprehensive and valuable report on measles was written by Dr. THEODORE THOMSON as long ago as 1896. This report discusses in a detailed way the use made of notification and of various preventive measures in a number of different sanitary areas. It is remarkable that hitherto so little practical effect has been given to the teaching of this report. The points emphasised by Mr. JOHN BURNS last week, in summarising conclusions arrived at by London medical officers of health at the meeting at the Local Government Board, were practically the same as those discussed by Sir R. THORNE 15 years ago in the final paragraph of his introduction to Dr. THOMSON'S report. They included notification, prompt and systematic visitation, further hospital accommodation, the judicious use of restriction of attendance at elementary and other schools, and the need for exclusion of children under five years of age during epidemic prevalence. In no single district in which Dr. THOMSON had made inquiry had all the practicable measures for the prevention of measles been systematically adopted. In how many districts have all these measures been "systematically adopted" in the last 15 years? Sir R. THORNE observed, in commenting upon Dr. THOMSON'S report, "Good result is not to be expected from adoption of any one of (these) several measures ..... each one ..... must be regarded as necessary and supplementary to the others." Dr. THOMSON'S report came nearly at the end of the major wave of the "nineties," and in the comparative calm of a succeeding ten years' interval it received less attention than was its due. Now that a major wave of measles is again upon us, Dr. THOMSON'S facts and conclusions will doubtless again be weighed and considered, and it may safely be predicted that the outcome will be a more practical one now than it was at the end of the prevalence of the "nineties."

## Tuberculosis in India.

WE have received a copy of a report on "How Tuberculosis is Spread in India," by Dr. J. A. TURNER, executive health officer, Bombay, which presents numerous interesting features. The modes by which tuberculosis, more particularly the pulmonary variety, is conveyed in Europe have been discussed times without number. Varying opinions have been expressed by different observers, and these opinions have occasionally had to be modified or abandoned. When the theory was first promulgated that pulmonary tuberculosis could be communicated by infection it was considered that dried sputum was the greatest danger—that is to say, that inhalation played the principal part. Another problem then arose—namely, whether human and bovine tuberculosis could be respectively communicated to cattle and human beings. In 1901 KOCH stated that tuberculosis could only be caused by food substance through a primary infection of the intestine. The work of VON BEHRING and others has shown, however,

that bacilli can pass through the healthy walls of the intestine and become lodged in the lymphatic glands and ultimately reach the lungs without causing any lesions in the intestine. Thus flesh and milk from tuberculous animals may also be an important factor in the causation of pulmonary tuberculosis. There is, however, a third source of infection which has scarcely received in this country the attention which it merits—namely, the possible contamination of food matters by individuals and animals the subjects of active tuberculous disease.

The sources by which tuberculosis is spread in India have not been so minutely studied, and Dr. TURNER'S remarks offer some valuable suggestions as to the differences which exist in the factors most potent in the dissemination of the disease in Europe and India respectively. In the first place he shows that the mortality from tuberculosis is higher in India than in England, and he then proceeds to briefly describe the methods of life led by the natives which especially tend to encourage the dissemination of the pathogenic bacilli. The first question he investigated was as to whether cows or buffaloes suffer extensively from tuberculosis in India, and he came to the conclusion that cattle are affected, but only to a slight extent. He then endeavoured to ascertain whether milk could be infected from human or bovine agencies, after it had been drawn from a healthy animal, by the habits and customs of the attendants or by the infected fæces of the tuberculous animals. His account of the manner in which the milch cattle stables, dairies, and milkshops in India are conducted is certainly not encouraging, and the habits and customs of the gowlis, their methods of milking the cattle and washing themselves and their milk vessels, leave much to be desired. The milk vessels are scoured with cowdung and dirt, the buffaloes and cows wallow in their excrement, and the buffaloes are washed at the same well that the milk vessels are cleaned at. Considering that the results of the Royal Commission on Tuberculosis (at the present time carrying out its investigations in this country) prove clearly that the fæces of the tuberculous cow are loaded with bacilli, the conditions referred to above show that there is a great possibility of the milk becoming infected. In addition Dr. TURNER says that it is a common thing to see the gowlis and stable attendants making their morning toilet at the well, and at the same place and with the same water they use for washing the buffaloes and milk vessels. A third point which Dr. TURNER investigated was as to whether human beings, especially children, could contract tuberculosis because of the intimate relation of the working classes with cows, bullocks, and buffaloes, and the enormous use which is made of cowdung, some of which must be infected. Cowdung mixed with urine and mud is used for plastering walls and floors and roofs of houses, and it is stored in the house. Even in large cities in India the cow and bullock are inmates of the dwelling-house, and all the cooking-pots and vessels used are scoured with cowdung from the street. From these observations it is therefore evident that the prevention of tuberculosis in India is intimately involved with the housing problem, perhaps even more intimately than is the case in our own country. Given healthy environment, the incidence of tuberculosis is lessened in India as elsewhere, while the climate must have some influence on the life of the bacilli, as the heat of the sun would kill the organisms if they are exposed to it. The dust of the streets where there is so much bullock traffic probably contains many bacilli, while the flies are an additional danger in conveying the infection. In addition, therefore, to the risks of infection from dried sputum, the habits of the natives undoubtedly tend to convey the bacilli, and the difficulties in the way of prevention must prove even greater than in England. Dr. TURNER makes many practical suggestions in relation to this matter, and shows the admirable sanitary work which is now being done in India to the best advantage.

A subject which is not discussed in this report is the influence of race. It is generally acknowledged that some of the dark races are especially prone to be attacked by tuberculosis. For instance, the negro is very susceptible, especially when removed from his own country, and an American observer, Surgeon KENNEDY, has stated that the mortality from this disease in a tribe of Red Indians living in the Rocky Mountains, in a splendid climate, amounts to 23 per cent. of the total death-rate. Similar observations from India and other countries on the lines of Dr. TURNER'S report would be of considerable interest and value. The diminution in the incidence of the disease in Great Britain which has accompanied the improvement in the general hygiene of the big cities is encouraging. Improvement in the dwelling-houses of the working classes and supervision of the milk-supply are all-important, and they would appear to be even more urgently required in India, where, moreover, the difficulties of compelling sanitary improvements are immense. The sections of the Act relating to the control of milk in Bombay are stated to be so defective that little control can be exercised over the sale of milk. Nevertheless, as much should be accomplished as possible. The opportunities for the contamination of the milk, even although tuberculosis does not seem to exist to a great extent amongst cattle in India, are so many that attempts must be made to guard against all such sources of infection, whether of bovine or human origin. If the milk-supply could be rendered more secure against pollution much would be done towards the prevention of the disease in India as with us. The nature of the climate tends to counteract in some measure the danger by inhalation, and if the risk of infection by food and milk could be lessened the mortality now caused by the disease would be doubtless considerably lessened. This is the main lesson taught, and now being put into practice by the executive health officer of Bombay.

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LONDON SCHOOL OF TROPICAL MEDICINE.—Arrangements have been made for lectures on tropical subjects to be delivered to nurses at the London School of Tropical Medicine, Royal Albert Dock, E. Any qualified nurse may attend the course whether she intends proceeding abroad or not. Further information may be obtained from the Matron, Seamen's Hospital, Royal Albert Dock, E.

# Markham *v.* Abrahams.

THERE would appear to be an increasing tendency on the part of the public to seek for pecuniary damages on account of injury said to have been occasioned by the acts or defaults of unqualified persons who have attempted the discharge of medical or surgical functions. The recent action against Mr. BARKER the bone-setter was hardly concluded when that of MARKHAM against ABRAHAMS came on for trial and occupied the LORD CHIEF JUSTICE and a specia jury during the whole of two days, which might surely have been better employed. The plaintiff, a young lady who was preparing to be a science teacher, and had passed certain examinations with that view, became conscious of a defect of sight, and in 1907 she went, during his advertised "consulting hours," to the shop in Manchester of the defendant, who described himself as "an eyesight and spectacle specialist" and "a qualified optician of London," in order to seek advice. She was examined by an assistant and received spectacles; and during the next two years she paid further visits to the shop, usually seeing an assistant, and once seeing the principal himself. Her spectacles were changed on more than one occasion, but the result was unsatisfactory; and in 1909 she consulted Mr. CHARLES WRAY, who discovered her to be the subject of advanced conical cornea, and advised accordingly. She was compelled to abandon her intended profession; and it was maintained on her behalf that if the defendant had exercised reasonable care, and had been possessed of reasonable skill, he would have seen the case to be one of disease; that he had represented himself as a specialist and was bound to show reasonable care and skill as such; and that he could not avoid liability by saying that he was merely a tradesman engaged in the sale of spectacles. It was urged for the defence that the defendant did not profess to be a person able to diagnose and cure diseases of the eye, but was simply a maker and seller of spectacles. A chance customer came in and asked for spectacles to let her see better; she was tested, not for disease, but to find what spectacles would best assist her sight, and the defendant was only paid for supplying those spectacles, not for examining for disease. Mr. ENSOR, the defendant's assistant who first saw the plaintiff, said that he tested her eyes, found that she was astigmatic, and supplied her with spectacles which he told her would enable her to see better. He admitted that he had not made a study of the diseases of the eye; but it appeared, from the evidence of the plaintiff herself, that he had "used an instrument for throwing a strong light into her eyes." It is therefore manifest that she was examined with an ophthalmoscope.

The LORD CHIEF JUSTICE, in summing up, characterised the case as an extremely difficult one, and asked the jury whether they could say, "in view of the fact that opticians carried on a well-known trade, that they were under any obligation to discover disease?" The general framing of this question appears to indicate that his lordship would himself have answered it in the negative. With great respect for him, we would urge that the answer should depend entirely upon the acts and representations of the defendant or of his agent. If the plaintiff merely went into a shop where spectacles were sold, asked to see some, and selected a pair for herself, it is clear that the salesman would have no responsibility. But surely, if the plaintiff does not select for herself, but is "examined" in some way which she does not understand, and then has spectacles selected for her, and is induced to purchase them by a statement that they are what her condition requires, the salesman who attends upon her is clearly making a claim to special knowledge of the conditions governing sight, and ought not to be permitted to evade responsibility on the ground that he is a mere salesman, selling what his customer chooses to buy. During the considerable controversy which raged around the doings of so-called "opticians" a year or two ago, it was strongly urged on their behalf that they would always be able to detect "disease," and would be only too anxious to transfer any sufferer from it to the care of a competent adviser. We pointed out at the time that this claim was absurd; and in the case now under consideration the defendant himself said in the witness-box that he had "had no training or experience in diagnosing or dealing with diseases of the eye." The same was manifestly true of his assistant, Mr. ENSOR, who used the ophthalmoscope to test the plaintiff's refraction, because, as the late Sir WILLIAM BOWMAN pointed out 50 years ago, even the quite early stages of conical cornea are rendered conspicuous by the first glance at the eye through that instrument. If Mr. ENSOR had been a competent examiner he could not have failed to see by the shadow playing round the base of the cone that there was at least something unusual in the condition of the eye, something which, if it did not reveal disease to him, should at least have induced him to suspect it. We, therefore, think that he must have made a claim to the possession of skill and knowledge which, as a matter of fact, he did not possess, and had never had any opportunity of acquiring. From this point of view we entirely approve the verdict for the plaintiff, and at the same time we find no fault with the moderation of the sum of £25 awarded to her, although it is no sort of compensation for the injury she has sustained. The public must really be taught to use common sense, and to go to skilled advisers when they are in need of skilled advice. The case of Miss MARKHAM was one to which the maxim of "*caveat emptor*" should apply, and persons who are induced by the sort of patter that may be talked by unscrupulous shopmen to regard the talkers as authorities upon a difficult branch of medical science have only themselves to thank for any results which may ensue.

We regret to add that the trial gave occasion to something like a conflict of medical testimony, of a kind which might probably have been spared, and which could not fail to increase the difficulties of the judge and jury. Mr. WRAY, who was the first medical man to see the plaintiff, gave his evidence very fairly and clearly, and described conical cornea as a rare disease, occurring in perhaps one case out of a thousand, and he does not appear to have been asked about the possibilities or prospects of treatment. For the defence it was sought to establish that the disease was so rare that no recognition of it was reasonably to be expected, and so completely incurable that no ill-results could be

traceable to the circumstance that it had not been discovered. Mr. SYDNEY STEPHENSON (we quote from the *Times* report) said that conical cornea was a "very rare disease; he would estimate it at one case in 10,000 patients"; and that "in its incipient stage it was very difficult to discover"; while Mr. G. HARTRIDGE said that "there was no known treatment which would avail with conical cornea." Both gentlemen were, of course, giving accurate expression to their own experience or convictions; but we doubt whether ophthalmologists generally would be found to agree with either of them. Conical cornea occurs, as a rule, chiefly in adolescents of studious habits, and therefore does not occupy a large place in hospital statistics. PANAS quotes WHITE COOPER as having observed 194 cases in 209,000 patients, or 1 in 1077, figures so large that hospital cases must certainly be included in them. Mr. BRUDENELL CARTER contributed to THE LANCET in 1892 (Vol II., pp. 988 and 1374) a report on 10,000 consecutive cases of eye affection seen in private practice in London, and among these there were 20 of conical cornea, 5 males and 15 females, or 1 in 500 of the whole. There were 2431 simple refraction cases, to which those of conical cornea bore the proportion of 1 in 121·5. It is obvious that, apart from presbyopia, only the refraction cases and the early cases of conical cornea or of chronic glaucoma would be likely to find their way to a spectacle-maker's shop; and it may be inferred that an "optician" might be likely to see a case of conical cornea among every 130 or so of his younger customers. On the question of treatment, again, it is impossible to forget that the progress of conicity has, in a very large number of cases, been completely arrested, and the eye restored to fair and permanent usefulness, by the formation of a central cicatrix at the summit of the cone, and of a lateral pupil behind the portion of the cornea which most nearly retained its normal curvature. The excellent work of VON GRAEFE, carried on by Sir WILLIAM BOWMAN and his contemporaries, and materially improved upon in our own day by Sir ANDERSON CRITCHETT and by the use of the galvanic cautery, ought certainly not to have been ignored as an aid to the jury in estimating the amount of injury suffered by the plaintiff as a consequence of her reliance upon an adviser who was incompetent to advise. If she had sought surgical aid in 1907 she might have been enabled to continue the occupation which she has now been compelled to relinquish.

DEATH OF LORD AIREDALE.—When in the year 1904 the University of Leeds was inaugurated, among the first list of honorary graduates the name of Sir James Kitson found a natural position as being that of a man held in universal respect, fully alive to the responsibilities and duties of citizenship, generous in his views and in his actions, and a warm supporter and patron of the various charitable institutions of his native town, in many of which he had taken an active interest. His work as the head of a great industry made him an appropriate recipient of the degree of Doctor of Science. By the death of Lord Airedale, which occurred suddenly in Paris while he was on his way home from the Riviera, Leeds has to mourn the loss of one of its most distinguished public men and the University one of its earliest graduates.

# Annotations.

"Ne quid nimis."

## SUNSHINE AND RAINFALL IN 1910.

| | | Sunshine. | | Rainfall. | | |
|---|---|---|---|---|---|---|
| | | Number of hours. | Difference from average. | Total fall. | Difference from average. | Number of days with rain. |
| | | | Hours. | Inches. | Inches. | † |
| | Sandown | 1672 | * | 36·4 | * | 203 |
| | Ventnor | 1654 | − 69 | 32·1 | + 2·5 | 204 |
| | Southampton | 1517 | −148 | 33·6 | + 2·7 | 190 |
| | Bournemouth | 1715 | * | 33·6 | * | 191 |
| | Jersey | 1739 | −188 | 44·4 | +10·2 | 230 |
| | Guernsey | 1773 | −133 | 46·2 | + 8·6 | 232 |
| | Weymouth | 1695 | * | 30·4 | * | 183 |
| | Torquay | 1770 | + 39 | 41·0 | + 7·7 | 222 |
| | Plymouth | 1652 | + 2 | 44·3 | + 8·4 | 212 |
| | Falmouth | 1730 | − 36 | 53·0 | + 7·6 | 230 |
| | Scilly | 1660 | −151 | 36·6 | + 3·0 | 226 |
| | Penzance | 1713 | * | 44·4 | * | 238 |
| | Newquay | 1716 | + 29 | 36·0 | + 1·0 | 216 |
| | Cardiff | 1600 | * | 47·2 | + 4·5 | 235 |
| | Pembroke | 1593 | − 49 | 38·9 | + 3·8 | 232 |
| | Llandudno | 1564 | +108 | 36·7 | + 5·9 | 225 |
| | Rhyl | 1656 | * | 28·7 | + 2·7 | 210 |
| | Southport | 1570 | +104 | 35·0 | + 2·1 | 213 |
| | Blackpool | 1627 | +218 | 33·3 | − 0·5 | 217 |
| | Carnforth | 1378 | * | 39·7 | * | 214 |
| | Scarborough | 1297 | * | 25·9 | − 1·4 | 191 |
| | Whitby | 1399 | * | 22·6 | − 3·1 | 180 |
| | Skegness | 1504 | * | 26·0 | * | 198 |
| | Cromer | 1425 | * | 25·5 | * | 255 |
| | Yarmouth | 1648 | * | 28·5 | + 3·2 | 170 |
| | Lowestoft | 1667 | * | 29·0 | + 5·3 | 172 |
| | Felixstowe | 1768 | * | 25·4 | * | 189 |
| | Clacton | 1584 | * | 21·5 | * | 163 |
| | Southend | 1493 | * | 22·0 | + 0·7 | 173 |
| | Margate | 1454 | − 86 | 28·3 | + 5·3 | 183 |
| | Folkestone | 1727 | * | 34·6 | + 6·6 | 180 |
| | Dover | 1683 | * | 34·1 | * | 192 |
| | Hastings | 1719 | − 64 | 28·9 | − 0·2 | 212 |
| | Eastbourne | 1752 | + 13 | 34·8 | + 3·9 | 174 |
| | Brighton | 1690 | − 41 | 32·4 | + 4·8 | 179 |
| | Worthing | 1731 | * | 32·6 | + 5·9 | 191 |
| | Harrogate | 1407 | * | 34·0 | + 4·5 | 201 |
| | Buxton | 1423 | * | 48·7 | − 1·9 | 209 |
| | Bettws-y-Coed | 1210 | * | 58·7 | * | 232 |
| | Llangammarch Wells | 1236 | * | 58·8 | * | 239 |
| | Bath | 1578 | * | 39·6 | + 9·1 | 193 |
| | Cheltenham | 1431 | * | 31·1 | + 3·5 | 176 |
| | Tunbridge Wells | 1543 | − 45 | 35·3 | + 5·7 | 198 |
| | Newcastle-on-Tyne | 933 | −133 | 24·6 | − 2·8 | 206 |
| | York | 1229 | − 47 | 24·6 | − 0·7 | 191 |
| | Hull | 1062 | * | 25·6 | − 0·2 | 207 |
| | Sheffield | 1264 | * | 31·0 | − 1·6 | 190 |
| | Nottingham | 1285 | * | 24·7 | − 0·1 | 203 |
| | Birmingham | 1113 | * | 31·3 | + 3·9 | 202 |
| | Manchester (City) | 982 | * | 37·5 | + 2·3 | 223 |
| | Prestwich | 1015 | −119 | 40·0 | + 3·0 | 219 |
| | Liverpool (Bidston) | 1585 | * | 28·6 | − 0·2 | 227 |
| | Oxford | 1376 | −122 | 29·2 | + 3·1 | 192 |
| | Cambridge | 1501 | − 59 | 22·8 | + 0·1 | 185 |
| London district. | Tottenham | 1373 | * | 23·2 | * | 186 |
| | Camden Square | 1183 | * | 25·4 | + 0·2 | 186 |
| | Westminster | 1146 | + 2 | 23·4 | − 1·0 | 201 |
| | Greenwich | 1379 | −125 | 28·1 | + 4·0 | 185 |
| | Norwood | — | — | 27·8 | + 2·9 | 191 |
| | Bunhill Row | 1047 | − 93 | — | — | — |
| | Kew Observatory | 1350 | −117 | 25·5 | + 1·5 | 180 |
| | Strathpeffer | 1150 | − 38 | 33·6 | + 1·4 | 230 |
| | Fort Augustus | 1016 | −127 | 42·2 | − 2·4 | 216 |
| | Aberdeen | 1369 | − 32 | 27·7 | − 3·0 | 223 |
| | Nairn | 1240 | * | 27·5 | + 2·8 | 233 |
| | Glasgow | 1044 | − 51 | 39·2 | + 0·5 | 194 |
| | Oban | 1404 | * | 51·9 | * | 221 |
| | Marchmont | 1314 | − 17 | 28·9 | − 5·5 | 193 |
| | Dublin | 1433 | − 97 | 31·4 | + 2·9 | 221 |
| | Birr Castle | 1280 | − 70 | 34·2 | + 1·2 | 231 |
| | Armagh | 1323 | + 33 | 32·5 | + 0·6 | 217 |
| | Valencia | 1344 | −113 | 52·8 | − 3·7 | 268 |

* No trustworthy average.
† A day with at least 0·01 in.

The above statistics have been compiled from the annual summary of the weather, issued by the Meteorological Office, and afford on the briefest examination a good idea of the general character of the weather during the past year. It

will be at once observed that the only parts of the kingdom which did not suffer from a lack of sunshine were the coast of Lancashire and North Wales, Torquay, and some other resorts on the South-West of England, the North of Ireland, and one or two isolated localities elsewhere. The sunniest districts were the Channel Isles, the coast of Devon, and various resorts on the coast between Bournemouth and Felixstowe, while the most sunless were the City of London, and some of the large populous centres of the North, the absolute lowest record being 933 hours at Newcastle-on-Tyne. Compared with Torquay, the sunniest spot on the mainland, the figure at Newcastle is remarkable, showing an average of little more than 2½ hours per day against an average at Torquay of more than 4¾ hours. The greatest minus difference from the normal was at Jersey, which suffered a loss equal to more than half an hour a day, while at Blackpool, the only place with a very notable excess, there was a similar amount per day gained. In the metropolitan area there was a general deficit, except at Westminster, where the total number of hours exceeded the average by two. Over the kingdom as a whole the rainfall was in excess of the average, the plus value being very large in the Channel Isles, at many places in the south-west of England, and also at Bath. It may be remarked that for several years before 1910 the south-west of England had an annual fall considerably below its normal. The driest place given in the table is Clacton, with no more than 21·5 in., but Southend-on-Sea, Cambridge, and Whitby had an aggregate nearly as low, while the number of days with rain was smaller at Tottenham than in any other part of the kingdom. Many districts in England experienced at least 50 more days with rain than Tottenham, and at Cromer there were as many as 99 more rainy days. The frequency of slight rain in some parts of East Anglia was one of the most noteworthy features of the year. Very few localities in the wettest districts of Ireland and Western Scotland had rain on more days than Cromer, and yet at Great Yarmouth and Lowestoft the number was relatively low—only 170 at the former, or 85 less than at Cromer. Although the general character of the year was wet there were dry patches, especially in the centre and north-east of Great Britain, and also in the south of Ireland. In the latter region most of the recent years have been markedly deficient in their rainfall, and last year the largest deficit was at Roche's Point at the mouth of Cork Harbour, where the total fall was 5¾ in. less than the average.

## THE CONQUEST OF CONSUMPTION.

ONE of the most hopeful auguries for the eventual conquest of tuberculous disease is the increasing attention that is being devoted to this subject by public health authorities, philanthropic agencies, and administrative bodies. The various suggestions for the establishment of sanatoriums for poor consumptives, for compulsory notification, and for invalidity insurance are all indications of the increasing interest aroused in this subject. One of the greatest needs at the present time is a general awakening of the public at large to the main facts in connexion with this disease and to the great waste of human life and activities which it entails. Dr. A. Latham and Mr. C. H. Garland have recently published a new and revised edition of their book, "The Conquest of Consumption: an Economic Study."[1] In it they give an interesting and instructive account of some of the main problems in connexion with this disease, written in simple, non-technical language, and they also suggest a scheme for an efficient campaign against consumption, with some calculations of the probable cost. In our review of the first edition of this book we pointed out that the statistics of the mere monetary loss produced by tuberculosis among the wage-earning classes, as given by Dr. Latham and Mr. Garland, were simple but convincing. Consumption alone appears to cost the friendly societies more than £1,000,000 a year in sick benefits, and if to this are added the sums expended by means of Poor-law relief and by charitable agencies, such as special hospitals and sanatoriums, the total direct loss is estimated at nearly £3,000,000 a year. The subject of State intervention in this matter is discussed in an interesting and practical manner. The writers assert that it is the duty of the State to protect the population from this disease and to provide means of regaining the wage-earning capacity to those who fall victims. They estimate that of the total population of 43,000,000, only 2,000,000 persons are in a position to pay fully for treatment of this disease if they fall victims to it, and that of the remainder 13,000,000 are so near the poverty line that they would be quite unable to contribute towards their own treatment. Any successful scheme for dealing with this question must, they propose to demonstrate, embrace measures for the prevention of the spread of infection, the detection of the disease in its early stages, the provision of adequate sanatorium and home treatment, the support of the family when the breadwinner is away, and the question of after-employment. The essentials of the scheme suggested in this book are the provision of 30,000 sanatorium beds, the establishment of anti-tuberculous dispensaries, the allowance of a weekly payment of £1 to the individual patient's dependents, and some means of dealing with the hopeless and incurable cases. It is estimated that about 56,510 persons contract consumption every year, and that the total consumptive population reaches figures between 250,000 and 300,000, many of whom are in such an advanced stage that there is no hope of restoring them to lasting working capacity. The suggested scheme would provide adequate accommodation for 60,000 patients per annum if treatment at the sanatorium were to extend to six months. The estimated cost, based on certain actuarial calculations, would involve a capital outlay of £2,250,000 and an annual expenditure of £4,500,000, the latter diminishing as the good results of efficient and early treatment became felt. Dr. Latham and Mr. Garland defend the sanatorium system against the attacks which have been made against it, and especially against the suggestion that if some specific treatment more effective than the present tuberculin injection is discovered the sanatoriums will be unnecessary. They admit that the details of any comprehensive scheme, and the methods of raising the necessary money are questions to be worked out by statesmen, but conclude by stating that their endeavour has been to show the urgent necessity of both Government inquiry and State intervention. The problem is certainly one of national importance, and one which will sooner or later have to be faced. This little book is a practical discussion of the question and one which may be read with advantage by the public, for whose instruction it is primarily intended.

[1] The Conquest of Consumption: An Economic Study. By Arthur Latham, M.D., and C. H. Garland. London: T. Fisher Unwin. 1911. Pp. 159. Price 1s. net.

## WINKLES AND TYPHOID FEVER.

A CASE of typhoid fever having been traced to winkles taken from the river Ouse at Newhaven the urban council of that town prosecuted at Lewes petty sessions on March 14th a man who had been gathering the shell-fish from the river bank. An officer of the council approached the man while taking the winkles. He informed him that they were not fit for human food and asked him to give them up. The man declined, but consented to interview a magistrate who at once condemned the winkles as being

unfit for human consumption. The man still refused to give up the winkles, hence the summons and the police court proceedings. Defendant contended that if properly cleaned the winkles would be wholesome and of good flavour. The justices, however, thought otherwise and imposed a fine of 5s. The fine does not err on the side of severity, but it was the first case of the kind taken by the authorities under the Public Health Act. Authorities in general while looking after winkle gatherers might do well to give some attention to the condition of the river banks where winkles unfit for human consumption appear to thrive.

## BERI-BERI ON SHIPS.

BERI-BERI is met with at British ports on board ships under two different conditions: (1) on ocean-going steamers carrying Asiatic crews; and (2) on sailing ships, manned chiefly by Scandinavians, coming into port after a protracted voyage. Modern scientific investigation has brought forward very strong evidence associating the disease with the consumption of white polished rice from which there had been removed in the process of milling certain layers of the rice grain containing relatively large proportions of organic phosphorus; and that among the coolies employed on the plantations in the Malayan Peninsula this form of "phosphorus starvation" was the cause of beri-beri. An Asiatic crew on ship board among whom white or polished rice was the staple article of diet might be expected to suffer from the disease in the same way as the Malayan coolie on shore. But on the sailing ships the crews of which are Europeans, and where little or no rice is consumed, it was until lately more difficult to account for the appearance of beri-beri. These ships, owing to their slower progress, remain at sea for long periods, during which no fresh meat or vegetables can be obtained. Their dietary is of necessity made up largely of preserved food, much of it tinned. There has been brought forward recently evidence to show that in some of the processes employed for preserving these kinds of food the organic phosphorus is extracted or destroyed, and also that the growth of certain moulds on long-stored foodstuffs robs them of a proportion of their phosphorus. So that it appears that beri-beri may be produced by the same cause, not only among coolies in the East and Asiatic sailors aboard steamships, but also among European seamen on sailing vessels during long voyages. The deficiency of the necessary amount of organic phosphorus in the dietary produces wasting of nerve tissue which needs a certain amount of that element for its normal nutrition. It is not so long ago that beri-beri was regarded by some persons as an infectious disease, and this view still retains a hold upon the public mind. In THE LANCET of March 4th our correspondent in Ireland reported that three negroes had been landed at Galway from a barque which had arrived there from the West Coast of Africa, and that under the directions of the port medical officer the patients had been removed to the union fever hospital. Considerable anxiety, it was stated, had arisen from the presence of beri-beri in the town, the sanitary condition of which, it was admitted, left a good deal to be desired. Since this was published one of our readers has written to point out that the good people of Galway had no cause for anxiety, since the disease was not due to infection and could not therefore spread from imported cases; some of his own experience of the disease while abroad was also quoted by him in support of his opinions. It may be mentioned that on March 9th a question was asked in Parliament as to the isolation of these cases. In this connexion we may refer to a leaflet recently issued by the Marine Department of the Board of Trade, giving instructions on the subject of beri-beri, and intended primarily for the use of masters of steamships carrying Asiatic crews. After a distinct statement that beri-beri "is not contagious from one man to another," the leaflet goes on to describe the symptoms of the disease; the appropriate treatment is then indicated and the prophylaxis discussed. The theory of causation of beri-beri by white rice appears to be accepted by the Board of Trade, for it is strongly recommended that the ship's stores should contain no white or polished rice, but that yellow or unpolished rice should be substituted. At the same time an open mind is kept, for the leaflet states that the instructions issued by the Board of Trade will be liable to revision as the advances of our knowledge of the causes and effects of the disease may require. It is further mentioned that though many deaths from beri-beri are annually reported to the Board as having occurred on British vessels, these may not show the full extent of the mortality from the malady, since other cases which are reported as dropsy, paralysis, or heart disease may very probably be in reality deaths from beri-beri. The Board of Trade's leaflet should prove of great service in spreading knowledge as to the causation of this interesting disease and to the simple means for preventing it. To the masters of vessels carrying no surgeon the outlines of treatment given in the instructions should be of much assistance in the event of any of their crew being attacked.

## THE "DRY" WINE AND THIRST.

THERE is a curious lay impression that the so-called "dry" wine conduces to thirst, a literal meaning, no doubt, being associated with the word "dry." Applied to wine, the word "dry" really means, of course, free from juice which implies sugar. As sugar disappears in a wine by the continuance of fermentation the acid character of the fluid comes into evidence. Sugar, in fact, masks acidity, and the use of sugar in a lemon squash or on a fruit tart is resorted to for that reason. The acidity, however, is still there, but owing to the presence of sugar the acid is probably not so rapidly diffused, and therefore it does not have such an exciting effect upon the sensory nerves. It can hardly be supposed that because a wine is "dry"—that is, contains a minimum of sugar—it is thirst-producing. The "driest" of all wines is claret, and that is why so many people regard it as a sour or acid wine, there being practically no sugar present to balance the acidity. Sound claret is, as a matter of fact, the least acid of wines and the least sugary, but no complaint is made against it that it is thirst-producing. Champagne is just as acid as, if not more so than, claret, but contains more sugar, and it is champagne which is commonly accused of giving rise to a considerable thirsty feeling. The ingestion of much sugar gives rise to thirst, but a dry champagne contains not more than 2 per cent., and a reputed pint would not contain more than one-fifth of an ounce of sugar, which is less than many people use in a cup of tea or coffee. Another theory has reached us, which is that champagne gives rise to thirst because it is "limed" to make it "dry." Here again the suggestion is that the word "dry" connotes an absence of moisture or that lime absorbs moisture and leaves the consumer thirsty. The theory is manifestly absurd, and as a matter of practice lime is never found in the wine. It is, however, so common a matter of observation that champagne leaves a thirsty feeling, that there must be some reason why that wine should be distinguished from other wines in having this post effect. The sparkling quality of champagne, perhaps, coupled with the sugar contents, is probably a factor. Apart from the consideration that an alcoholic beverage is in itself a diffusible stimulant, its action is, no doubt, considerably accelerated when that

beverage is effervescing. Carbonic acid gas acts as a stimulant to the movements of the stomach and further aids the mechanical processes of digestion. It is probable, therefore, that dry sparkling wines are more readily diffusible than still wines, their effects are more pronounced on the functional activities, the fluid equilibrium of the blood is disturbed, its density is increased, and thirst tells this long tale.

## A RARE TYPE OF UNILATERAL HÆMOTOGENOUS INFECTION OF THE KIDNEY.

IN the *Yale Medical Journal* for January Dr. G. Emerson Brewer of New York has described an acute type of unilateral hæmotogenous infection of the kidney which he has studied since 1896. It is well known that in certain slight surgical lesions, such as boils, whitlows, and mildly infected wounds, and in some trivial medical diseases, such as coryza, bronchitis, and tonsillitis, as well as in severe infections, microbes enter the blood-stream. If their number is small, their virulence low, and if the kidneys are healthy, they may pass into the urine without causing any demonstrable lesion. If, on the other hand, their number is large, if their virulence is high, or if one or both kidneys are diseased, lesions are produced which vary from slight cloudy swelling or glomerular nephritis to complete destruction of the organ by purulent infiltration or necrosis. In the great majority of cases the early symptoms produced by this bacterial invasion of the kidney are comparatively mild, and are rarely differentiated from those of the primary disease or lesion. But as the renal disease advances a more or less characteristic group of symptoms is developed, such as increasing pyrexia, local pain and tenderness, pyuria, and leucocytosis. If unrelieved by treatment the patient becomes profoundly ill, and a diagnosis of pyelonephritis, pyonephrosis, abscess of the kidney, or perinephritis is easily established. The progress of the disease is gradual, but in the rare type now described, on account of the virulence of the infecting organism or the low resistance of the patient, the infection of the kidney is immediately followed by a toxæmia so intense as to resemble the onset of pneumonia or other acute infection, and the local symptoms are so overshadowed by the general symptoms that they are overlooked unless an unusually careful physical examination is made. If both kidneys are infected the patient, often without obvious cause, becomes violently ill with high fever, total suppression of urine, and rapid prostration, and dies in a few days from a combination of sepsis and uræmia. In the unilateral type, which Dr. Brewer thinks is the more frequent, death is due to sepsis alone, as one kidney continues to act. The following is an example. A woman, aged 28 years, was admitted into hospital suffering from a fracture of the leg and contusions. After three weeks, during which there was no evidence of disease, she suddenly became ill with symptoms suggesting a severe attack of influenza. The temperature rose to 104° F., and she complained of severe pain in the back and limbs. After two or three days tenderness over the right kidney and albumin and pus in the urine were found. Exploratory nephrotomy was advised but declined. The symptoms increased; she complained of constant aching in the right flank, had chills, became delirious, and showed every evidence of profound sepsis. Consent was finally obtained to lumbar nephrotomy. The perirenal fat was œdematous and the surface of the kidney was studded with deep, red, and elevated lesions. On incising the cortex the whole parenchyma was found filled with minute abscesses, of which the largest was 0·5 cm. in diameter. There was considerable hæmorrhage, which was controlled with difficulty. The incision was packed with gauze and the external wound was partly closed. The patient died after 12 hours. Dr. Brewer has observed 14 cases of this severe type of unilateral infection of the kidney. Of these, two were untreated, and death occurred in both within 12 days. Four patients were treated by nephrotomy and drainage, and all died soon after operation. Eight were treated by early nephrectomy and all recovered. He therefore strongly recommends this treatment, and says that to procrastinate or adopt other treatment is to invite disaster. But there are milder types in which less radical measures are indicated. These often simulate appendicitis, cholecystitis, or hepatic abscess. If unrecognised and unrelieved by treatment the disease progresses to the more definite and easily recognised text-book lesions, such as nephritic or perinephritic abscess, pyelonephritis, or pyonephrosis. The lesions are of the same general character as those of the severe type, but are fewer and involve less renal tissue. Stripping the capsule from the organ when the lesions are small, or a combination of this with the opening and draining of cortical abscesses or necrotic areas, is the best treatment. The following is an example. A woman, aged 26 years, complained of right-sided abdominal pain, nausea, headache, and fever. The temperature was 102° and the leucocytes numbered 19,000. Catheterisation showed that the urine from the right ureter contained a few pus cells, albumin, and blood. The right renal region was tender. Lumbar incision revealed œdema of the perirenal fat and a congested kidney with six indurated areas. They were incised and packed with gauze which was allowed to protrude through the wound. Only one contained pus. The renal pelvis was opened and appeared normal. Cultures from the pus showed the bacillus coli. Slow recovery ensued.

## CAISSON SICKNESS AND COMPRESSED AIR.

Dr. Leonard Hill recently read a paper on this subject before the Royal Society of Arts, giving an account of the experiments he had carried out with the help of first one and then another colleague—J. J. R. Macleod, C. E. Ham, M. Greenwood, F. Twort, and H. B. Walker. It used to be believed that exposure to compressed air immediately alters the distribution of the blood, forcing it inwards and causing a congestion of the viscera, which is suddenly and dangerously altered on decompression; and in spite of the writings of many investigators in France and Germany it was not until 1879, when Paul Bert published his great work "La Pression Barométrique," that the truth became generally known on the continent. But in England and America, where many great caisson works were initiated, engineers remained in ignorance of Bert's work and the mechanical theory held sway. In 1898 Dr. Hill began the experimental study of the subject in England, and by his experiments he established the truth of Bert's conclusions and overthrew the mechanical doctrines which were generally held here and in America. By a series of admirably contrived experiments on animals Paul Bert proved that compression caused no ill-effect until the amount of oxygen dissolved in the blood was sufficient to act as a tissue poison, that pathological accidents occur only after decompression, and are due to bubbles of nitrogen appearing in the blood and interfering with the circulation, and that these effects can be prevented by making the rate of decompression slow enough. In 1899 Lorrain Smith greatly advanced our knowledge of oxygen poisoning, and in 1907 Vernon made the important discovery that oil or fat exposed to air takes up in solution over five times the volume of nitrogen and oxygen that water does. On the direct effects of high pressure Dr. Hill had

some interesting remarks to make. As their experiments showed that dogs and cats and monkeys could be safely decompressed at a rate of 20 minutes per atmosphere from 100 lb., he and his colleague Greenwood went under pressure themselves to the extent of between 3 and 5 atmospheres, and were safely decompressed at the same rate. They found that there was no sense of pressure. The voice became very high-pitched and nasal in quality, whispering and whistling being impossible. They collected and analysed their alveolar air whilst in the caisson and found that the percentage of $CO_2$ fell as the pressure rose. Respiration is regulated by the quantity of $CO_2$ in the alveolar air, which, under normal pressures, is about 5 per cent. At a pressure of + 75 lb. it was found to be only 0·9 per cent. Within the limits of Dr. Hill's experiment the variation in pressure was such that the product of the percentage of $CO_2$ in the alveolar air and the number of atmospheres pressure was always the same, thus ensuring a constant concentration of $CO_2$ in the blood passing through the respiratory centre in the brain. In order to discover the best method of decompression, Dr. Hill and Mr. Greenwood studied on themselves the nitrogen saturation of the kidney. One of them drank two pints of water and half an hour later was compressed to + 45 lb. He then emptied his bladder and ten minutes later emptied it again. The urine filled a glass receiver which was sealed, and the gases were extracted from it afterwards by the gas pump. By this device samples of urine actually secreted in definite intervals, after a given pressure limit had been reached, were available for analysis. The results showed that the kidney, in a state of activity, is about saturated in 10 minutes. The observers were decompressed at a rate of 20 minutes per atmosphere, and their urine showed that desaturation of the kidney lagged behind the fall in pressure. Dr. Hill doubts the statement that the blood is completely desaturated during its passage through the lungs. The practical conclusions to which Dr. Hill comes are that while decompression times at caisson works are often too short, those tabled by the Admiralty Committee are too long, particularly if the men be persuaded to exercise their bodies during decompression. He finds that the "stage" method of decompression can be made fairly safe and is better than the uniform method for caissons. Fat and heavily-built men, and all men with defective circulation or pulmonary ventilation, should be excluded from caisson work, while it should diminish the tendency to bubble formation if fat food were avoided by caisson workmen and the diet limited to lean meat, bread, and vegetables.

## THE INFLUENCE OF DIABETES, GOUT, AND SYPHILIS ON THE TUBERCULOUS INFECTIONS OF THE HUMAN BODY.

AT a meeting of the Medical Society of London held on March 13th Dr. Nathan Raw read a paper on the Influence of Diabetes and Gout on the Tuberculous Infections of the Human Body. Diabetes has long been recognised as predisposing to pulmonary tuberculosis, although the former disease is also associated with bronchitis, pneumonia, and gangrene of the lung independently of tuberculosis. The resistance to microbic infection or activity is considerably lowered in diabetes, and particularly so to the action of the tubercle bacillus. In former years the lesions of the lungs in diabetes were ascribed to a non-tuberculous inflammatory process. Virchow was one of the first to demonstrate the true tuberculous character of the pulmonary affection, but the exact connexion of the two remains doubtful. Beyond the general statement made above—viz, that the resistance in diabetes to certain lung affections is lowered—Dr. Raw considers that the blood plasma is the determining factor in the growth and inhibition of bacterial infections, and supports his contention by experiments he has made with blood from cases of diabetes and gout. It is generally known that gouty individuals rarely suffer from tuberculosis, and Dr. Raw relates the results of growing pure cultures of tubercle bacilli on media which had previously been mixed with the blood of patients suffering from this disease. After four weeks' incubation, it appears, no growth was observed, and even after eight weeks there was only to be seen a slight irregular growth on the surface of the medium without any distinct clumps of bacilli. At the same meeting of the society Mr. D'Arcy Power read a paper on the Influence of Syphilis on Tuberculous Infections of the Human Body, in the course of which he arrived at some interesting conclusions. This is a wide subject and it requires further research, for the two diseases may occur under widely different conditions. That syphilis may predispose to tuberculosis is probable, and also acquired syphilis may render tuberculous lesions more active, but the influence of tubercle on syphilis has not been, as far as we are aware, clearly demonstrated. If medical practitioners who in the course of their duties are frequently brought into contact with such cases would record their observations some interesting results might be obtained. There is also here a large field open for laboratory research, which would materially help to clear up the uncertainty which now prevails.

## DEATH OF PROFESSOR JOHN ATTFIELD, F.R.S.

THE announcement of the death of Professor John Attfield, F.R.S., will be received with very genuine regret by members of the medical, chemical, and pharmaceutical professions. Professor Attfield was for a good many years the adviser on pharmaceutical subjects to the General Medical Council, and in the 1898 edition of the British Pharmacopœia the Council expresses its indebtedness to him both for his scientific and for his literary services. He had at one time a large consulting analytical practice, and was an authority on questions of food and water-supply. His book on "Chemistry, General, Medical, and Pharmaceutical," is still a favourite, particularly with pharmaceutical students. He was professor of practical chemistry at the Pharmaceutical Society from 1862–96, his appointment previously being that of demonstrator of chemistry in St. Bartholomew's Hospital.

## SMALL-POX IN BURY AND WIGAN.

A LOCAL correspondent writes: "Two new cases of small-pox were notified in Bury on March 14th, and the patients were removed to the Ainsworth Hospital. Two further cases were reported on the 15th, making nine in all. On the same day the operatives at the cotton mill where all the sufferers were employed refused to start work. The mills are being disinfected, and there is a great demand for vaccination. A further case, a man employed at the same mill, is suspected of having caught the infection. In view of the suspected origin of the outbreak the medical officer of health has recommended that all cotton operatives should be vaccinated or revaccinated. Three more cases are reported at Wigan, where there are now five persons suffering from the malady. The first patients removed to the local sanatorium were two men who had been employed at a mill at Ince. The latest victims are the wife and daughter of one of the men and a married woman who had visited the house. The vehicle of contagion is believed to have been the imported cotton. So far, only one case of small-pox has been notified in Liverpool. Liverpool is, fortunately, one of the best

vaccinated cities in the kingdom, the 'conscientious objector' being there a *rara avis*." Under date March 21st he adds: "Since writing the above, I am informed that on March 16th eight new cases were reported at Bury, bringing the total to 20 since the first case was reported on March 7th. The outbreak appears to be rapidly assuming epidemic form. The woven cloth warps and wefts in several of the looms at the mill have been destroyed, and some 3000 pieces of finished cloth have been disinfected at the Ainsworth Hospital. All the patients are being removed to this building, where there is permanent accommodation for 35 patients, but foundations are in for temporary buildings by which in case of necessity the accommodation could be more than doubled." Only two new cases have been notified this week.

## A PLEA FOR CHEESE.

WE have received from Major R. J. Blackham, D.P.H., R.A.M.C., a copy of a lecture on "Cheese in History, Commerce, and Dietetics," which contains many sensible observations in favour of including more cheese in the daily diet. After summing up the virtues of cheese he says very rightly that against its good qualities the only defects that can be urged are that it may be indigestible if improperly eaten or cooked, and that there is a popular prejudice which associates meat with wealth, cheese and oatmeal with poverty, and bread and water with criminals. He reminds us that cheese is nutritious, very wholesome, very cheap, keeps well even in the tropics, is a very compact and portable food, and it need not be cooked. He appeals to his medical colleagues to join in the crusade against the over-eating of meat and to induce their patients, occasionally at least, to substitute for the "meretricious attractions of the ill-cooked joint" the wholesome and far more nutritious qualities of good, sound, English or colonial cheese. Medical men, he adds, should certainly encourage amongst the so-called better classes the inclination towards the "simple life" which has now become more than a mere fashionable craze, for in matters of health a simple dietary has, in these strenuous days, much to recommend it. In cheese we possess a substitute for meat foods of value in domestic economy, but the considerations have to be borne in mind that to not a few cheese tends to become a monotonous diet and with some it will not agree. Flavour is of considerable physiological importance in dietetics.

## TAKA-DIASTASE IN THE TREATMENT OF DIABETES MELLITUS.

Dr. E. J. G. Beardsley, writing in the *Therapeutic Gazette* of Feb. 15th, quotes with approval a remark to the effect that the best way to learn all about a disease is to see its development in a friend. This was his own experience with diabetes mellitus; the futility of our present available means of treatment was borne in upon him when he was confronted with the symptoms of this disease in a friend. As a result of several conversations with Dr. H. A. Hare he determined to test the effect of administering taka-diastase in the form of powder. The patient, a man aged 32 years, had been under treatment by various physicians on both sides of the Atlantic for about three years. The amount of sugar had varied from 3 to 9 per cent. When Dr. Beardsley first saw him he was very ill, unable to get up, troubled by intense hunger and thirst, passing about 200 ounces of urine per diem, and suffering from diarrhœa. The urine contained 4·6 per cent. of sugar with a large amount of acetone and diacetic acid. He was given taka-diastase in 5-grain capsules, one after each meal and at bedtime. During the first 24 hours of this new treatment, the urinary excretion fell to 130 oz, the sugar fell to 3 per cent., and the ketone products also decreased. This improvement continued, the output of sugar remaining at 3 per cent., although the total excretion of urine fell to 85 oz., and a much freer dietary was being permitted. After three months' treatment the excretion was still about 80 oz. a day, and the patient had put on weight and felt better in every way. Dr. Beardsley has had good results in four other cases: in one man, aged 36 years, a non-diabetic glycosuria disappeared completely; another man suffering from diabetes was so much improved that he gained 6 lb. in as many weeks, and went back to his work as a carpenter; a third patient (a woman aged 42 years, with 1·5 per cent. of sugar and intense pruritus vulvæ) was relieved of the itching, although the sugar rose to 3 per cent.; while the fourth, a case of alimentary glycosuria, was also greatly relieved. Dr. Beardsley found in all these cases that improvement ceased if the drug was stopped, but that no untoward effects were traceable to its administration. The number of cases is small, but in so desperate a disorder as pancreatic diabetes anything that holds out the faintest prospect of improvement is worthy of extended trial, and there is no doubt that other physicians will watch with eagerness, and we hope without disappointment, the effects of taka-diastase.

# MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

### *The Material for Petrol Tanks.*

RECENTLY a colleague consulted me on a peculiar trouble that he had with his car. It was a good car, of a well-known make, and when going went well, but at times the carburettor absolutely refused to flood, with the consequence that the car on such occasions also declined to go. At first the body builder was credited with the blame; it was alleged that the tank was too low, as the petrol was gravity fed; the petrol plug was tapped to take the end of the tyre pump, but even when the petrol was thus pressure-supplied at times the carburettor was starved. A double petrol pipe was then fitted, the pipes were moved, and even a larger one was introduced, and all without avail, and then the cause was indirectly ascertained by the fitting of a new tank. The old one was of galvanised iron, the new one of brass; with the change the trouble vanished. The galvanisation of the iron tank had worn off and the iron on the tank's mucous membrane or interior had scaled, and little bits of these foreign bodies entered the petrol supply-pipe and so acted like a calculus in the ureter, and stopped, until they were passed, the passage of petrol. The deduction is therefore that these vessels for storage of petrol should be made of either copper or brass, and any way not of galvanised iron. On most good cars I understand that this is the rule, though on some of the cheaper ones galvanised iron is employed.

### *Is the Petrol Tank an Integral Part of the Chassis?*

This question arose out of the case just mentioned, as it was suggested that the petrol tank on the car in question may have been changed. I am given to understand that the petrol tank is an integral part of the chassis of a car, and if a chassis is bought the original petrol tank that was on the chassis at the time of purchase of the car is included and should go with the car.

### *Retreading of Tyres and the Proposition of the Challenge Rubber Mills.*

Without question the most important item in the running of a car is the cost of tyres, and a point that frequently has to be settled is, Shall an old tyre be thrown away, or sold as old rubber, or is it worth retreading? If the tyre is much worn or has had a burst the mileage to be obtained from the repaired cover often makes the expenditure less remunerative than the cost of a new tyre would be. To meet this, the

Challenge Rubber Mills of Eagle Wharf-road, City-road, London, N., offer that if a worn or burst tyre is sent to them they will report if it is worth retreading, and if not they are agreeable to select from their huge stock of second-hand covers one that will stand retreading, and which they will guarantee will give good service, and this they will do for the cost of the new tread, exchanging the scrap cover without charge; or they will accept the old cover in part payment for a sound second-hand cover that does not require a new tread. This firm have large works, where every process, including that of the preparation of the retreading compound, is carried out; they are thus in a position to give good workmanship and quality of material, and from what I have heard from motorists who have had tyres retreaded there this proposition is well worthy of the fullest consideration. This firm also market an all-rubber inner tube which they guarantee up to 10,000 miles if run within 12 months, and during that period they repair punctures free and also reseat valves. Their combination tube and shield is reinforced on all sides except the tread, which is of all rubber for the purpose of expansion and resiliency, and this is protected by a rubber-covered fabric shield, which is light and easy to fit and is practically unpuncturable.

*The Licence for Electric Cars.*

Under the terms of the Treasury regulations any car deriving its motive power otherwise than from an engine worked by cylinders is deemed to be of a horse-power exceeding 12 but not exceeding 15, which means a tax of £4 4*s*. to the general public. Recently at the Marylebone police-court an owner of an electric car which was supposed to be of 4½ horse-power was summoned for only taking out a licence for £2 2*s*., while under the regulations it should have been one for £4 4*s*. It was, however, suggested that the unit of horse-power for the purpose of any rate of duty under the Finance Act of 1910 shall be calculated in accordance with the regulations made by the Treasury for the purpose, and it was maintained that the Treasury should make regulations by which the unit of horse-power could be worked out, and that any way in this case it was not fair to fix an arbitrary and excessive horse-power. Finally, the representative of the Excise Department of the London County Council withdrew the summons. Probably a decision will eventually be arrived at under which owners of low-powered electric cars will not have to pay as if they had a 12 to 15 h.p. car.

*A Useful Fixed Cut-out Switch.*

Frequently, if one of the cylinders on a multicylinder car is missing fire, a screwdriver or spanner is used to cut out each plug in turn, and thus the one that is giving trouble is ascertained. In doing this it is possible to get a shock, or even if this is avoided the make-shift method is rather clumsy. Messrs. Brown Brothers of Great Eastern-street have introduced a well-insulated little device, known as the Tangye cut-out switch, which is inexpensive, and is intended to be permanently fixed in position, one on each plug, and by this means, without any trouble, the plugs can each be separately cut out and the offending one detected.

*The "Motor" Doctor's Edition.*

Our contemporary the *Motor* devoted its issue of March 14th especially to the requirements of the medical profession in things motoring. The advertisers entered into the spirit of the issue, one of them catching attention with an opening remark upon "cerebral tumour." Any professional man contemplating the purchase of a car may get some useful information from the number in question.

*Free Motor-car Insurance Policy.*

In connexion with their motor tyres, Messrs. Pirelli, Limited, of 45, Basinghall-street, London, E.C., are offering a free motor-car insurance policy against accidental damage to the car and accessories, accidental damage whilst in transit by road or rail, wilful and malicious damage, and cost of carriage to or from repairers, &c. The policy is issued by the London and Lancashire Life and General Assurance Association, Limited.

# THE REGISTRAR-GENERAL'S ANNUAL REPORT FOR 1909.

## I.

THE seventy-second annual report of the Registrar-General of England relating to the year 1909 has recently been issued by H.M. Stationery Office. It will be remembered that the corresponding report for 1908 appeared within 12 months of the close of that year. The needful preparations for the census taking of next month must, however, have absorbed a large share of the time of the Registrar-General's staff, and in such circumstances the impracticability of completing the volume within a similar period may reasonably be accounted for.

In his prefatory remarks Mr. Bernard Mallet draws attention to certain changes now introduced in the form of his report. For several years past the several sections dealing with the registration of births, deaths, and marriages have been authenticated by the Registrar-General himself, whilst the analysis of causes of death has formed the subject of a letter addressed to his chief by the medical superintendent of statistics. In the present volume the Registrar-General contents himself with a brief address officially presenting the report to the President of the Local Government Board and discussing the changes that will appear in the present and in future numbers of the series. The statistical portion of the report is dealt with in detail by Dr. T. H. C. Stevenson, the statistical superintendent, who thus becomes virtually responsible for the accuracy of the entire report. In the Registrar-General's opinion this arrangement will enable the statistics to be treated as a whole, and in a clearer and more consecutive manner than before, the overlapping and repetition in the mortality sections which, under the old system, were unavoidable now disappearing.

*Improvements to be Made in Future Reports.*

On the score of practical utility English national statistics are sometimes adversely criticised, because of the lack of uniformity among publications issued by the various State departments. From circumstances beyond departmental control the vital statistics of the General Register Office must be regarded as in one sense defective because of want of correspondence between the registration areas to which they relate and the administrative areas which have been established throughout the country for sanitary purposes. Sir William Dunbar, in particular, always deplored the persistence of this anomaly during the period when he was Registrar-General, and several of his most recent reports attest the fact that in his time much was done to adjust anomalies of this kind which could not be entirely removed except by the amendment of statute law. Mr. Mallet may be congratulated on being able to record that since the issue of his previous report all administrative difficulties have been overcome and that certain far-reaching improvements will be introduced into the report for the first year of the new decennium. The Registrar-General informs his readers that in considering the changes now decided upon his main object has been to secure coördination between the statistics published by his authority and those of other departments of the State, as well as those of other countries, thus rendering the official returns of greater use than before, not only to those engaged in public health administration but to scientific inquirers generally.

Among the changes above alluded to the most important would appear to be the substitution in the annual reports of local government administrative areas for registration or Poor-law counties and districts. For reasons given in a previous report[1] the statistics must continue to be collected for registration areas as long as the present Registration Act remains in force; but after the close of 1910 these returns will be rearranged in the central office and published according to administrative areas. It is believed that by this and certain other modifications in the annual report the statistics will be brought into line not only with those of the annual summary, but also with the statutory returns of the local sanitary authorities furnished to the Local Government Board.

Another desirable change promised in future reports is the

[1] Registrar-General's Seventy-first Annual Report (1908), p. vi. (Cd. 4961).

distribution of births and deaths to the districts to which the mothers or the deceased persons respectively belonged. This method of distribution has not hitherto been adopted in the annual reports, although it has been partially carried out in the weekly and quarterly returns and in the annual summary, on the authority of unverifiable returns furnished by the local registrars. In order to secure the necessary uniformity of distribution in the national statistics arrangements have been made for reference to the districts to which they belong of all transferable deaths and institution births, and this rule will be observed both in the Registrar-General's official tables and in the tables prescribed by the Local Government Board for use by medical officers of health. The necessary information will be collected by the central office and furnished by that office to the local authorities throughout the country. Mr. Mallet acknowledges the readiness with which county medical officers of health have promised their coöperation in effecting this distribution in their own counties.

The need for rearrangement of local returns in order to publish them under administrative areas has necessitated recourse to the card system, and to the complementary device of electrical sorting, the cost of which in the present case has been materially reduced by the circumstance that the card system has already been adopted for the purpose of the approaching census. Lastly, the Registrar-General expresses the belief that the application of the foregoing methods to the elaboration of vital statistics will greatly increase their flexibility and their value, inasmuch as it will facilitate the making of special inquiries necessary from time to time for official purposes, or called for by scientific investigators outside.

*Estimates of Population in Intercensal Years.*

As the interval increases since the last census the trustworthiness of population estimates becomes annually more doubtful, whatever methods of estimation be employed. This applies more especially to estimates of the population of the large city areas, which have been considerably affected since 1901 by improvements in the means of transit. Like most of its predecessors, the coming census will almost certainly show that the previous rate of increase has by no means uniformly been maintained in the chief urban centres, but that the rate of increase has been accelerated in their outlying portions. The ultimate effects of these changes will, of course, depend upon the extent to which the municipal area of a large town represents the actual residence of the population in each case. It is obvious that the only remedy for the present uncertainty as to population lies in the more frequent enumeration of the people. The staff of the General Register Office is fortunate in possessing in Mr. A. C. Waters, F.S.S., a statistician of large experience and of conspicuous mathematical ability. By his many valuable contributions to the Royal Statistical Society Mr. Waters has shown his deep interest as well as his skill in the examination of statistical problems relating to natality and to mortality. The high value of his services has been repeatedly acknowledged by his official chiefs, and by none more appreciatively than by Sir William Dunbar, who in his last annual report as Registrar-General particularly directed attention to Mr. Waters's methods for estimating local populations in intercensal years. For years succeeding the date of the coming census this method will replace that at present in use for the estimation of local populations in the administrative areas of England and Wales.

*Decline in Marriage-Rate.*

The graphic representation of statistics is a feature of the Registrar-General's recent reports to which we have alluded approvingly on several previous occasions. In the present report this method has been considerably extended, and although to some persons the older tabular method appeals more strongly, we are convinced that the majority of readers will appreciate the further development of the graphic method. The first diagram in the present report is conclusive as to the still persistent depression of the English marriage-rate. From this diagram we learn that the rate of marriage, based on the total population at all ages and of both sexes, does not adequately express the real decline that has taken place. Accordingly an additional curve is inserted showing the rate in terms of marriageable persons living; and, thus estimated, the rate in all but one of the last 29 years is shown to have been below the rate of 1876–80, taken as a standard.

*(To be concluded.)*

# MEDICINE IN THE ENCYCLOPÆDIA BRITANNICA.

## IV.[1]—*Food and Drugs.*

THE History of Adulteration affords the theme of one of the most interesting and best written articles turning upon food questions in the Encyclopædia. It is contributed by the well-known analyst, Mr. Otto Hehner, who shows a very intimate acquaintance with the subject, not merely from the analyst's point of view, but from the public point of view also. Mr. Hehner has worked hard at the administrative side of the subject, and what efficiency the present Act possesses may be attributed to the clear representations which he amongst others has made from time to time before Royal Commissions and Departmental Committees. Mr. Hehner was at one time associated with Dr. Hassall, who in the "fifties" (that is to say, before any Food Act existed) was commissioned by the Founder of this journal to extend his microscopical methods of examination, coupled with chemical analysis, to articles of food in general. The result was that, as Mr. Hehner writes, "for a period of nearly four years reports of THE LANCET Analytical Sanitary Commission were regularly published, the names and addresses of hundreds of manufacturers and tradesmen selling adulterated articles being fearlessly given. The responsibility incurred was immense, but the assertions of the journal were so well-founded upon fact that they were universally accepted as accurately representing the appalling state of the food-supply." Here was the beginning of a serious attempt to protect the public against poisonous and fraudulent practices connected with food-supply. In consequence of THE LANCET'S disclosures a Parliamentary Committee was appointed in 1855, the labours of which resulted in 1860 in the Adulteration of Food and Drink Act, the first Act that dealt generally with the adulteration of food. From that time legislation gradually advanced until the Act which is now in force passed in 1899. As Mr. Hehner points out, however, this was not a comprehensive Act superseding the previous Acts, but was an additional and amending one, so that at the present time four food Acts in reality run parallel and are together in force, rendering the subject from a legal point of view one of extreme complexity. Still more unfortunate was it that, while the Act of 1899 was made to embody the most important recommendations of the Food Products Committee, one very serious exception was made—viz., the appointment of a board of reference which should deal with difficulties as they arose, guide analysts and public authorities in fixing limits for articles (other than milk and butter), and take up such important questions as the use of preservatives and colouring matter in food. The Act, however, recognised "the importance of a regular and conscientious control of the public food-supply by the local authorities," because certain sections in it gave to the Local Government Board and the Board of Agriculture "a roving commission to see that the Acts are properly enforced throughout the kingdom so as to apply the Acts more equally throughout the country than heretofore, and in default of local authorities carrying out their duties empower the Government departments mentioned to execute and enforce the Acts at the expense of the local authorities." The Local Government Board has recently taken a practical interest in this matter and has created a new department presided over by an official inspector of food, and the department has added to its resources an analytical laboratory. In spite of imperfections in the Act the effect of the application of the food laws has been entirely beneficial. This is Mr. Hehner's view and we endorse it entirely.

In his references to the working of food Acts elsewhere Mr. Hehner deals chiefly with the National Pure Food Law of 1907 in the United States, which represents, perhaps, the strongest legislative step that has so far been taken in connexion with food-supply. This law provides an elaborate set of food definitions and standards, so that for each of the more important articles of food an official definition of its nature and composition has been established. These definitions are, he considers, of the utmost value to food officers, manufacturers, and merchants, not only in the United States but throughout the world.

[1] Articles I., II., and III. were published in THE LANCET of Feb. 25th (p. 530), March 4th (p. 609), and March 11th (p. 692), 1911, respectively.

The paragraphs on particular articles adulterated will be useful in conveying to the public in simple terms in what direction the practice of adulteration is a favourite field. In the note on beer there is an obvious misprint; bisulphate of lime should be bisulphite. In the article on spirits the writer refers to the report which appeared in THE LANCET in 1902 on "Brandy, its Production at Cognac and the Supply of Genuine Brandy to this Country," which, he says, served as a stimulus to public analysts to analyse commercial brandies, and convictions of retailers for selling so-called brandy followed. It may be remarked that, while that report pointed out what were the chemical characteristics of Cognac brandy, it did not lay down figures in terms of ethers with the view of setting up a standard. The point under consideration was whether the brandy sold in this country as Cognac brandy was entitled to the description Cognac. In another section is a good article on brandy by P. Schidrowitz.

We quite endorse the view of the writer as to the adulteration of drugs. It is satisfactory, he says, to record that but very few of the great number of drugs included in the pharmacopœias are liable to serious adulteration, and there are very few cases on record during recent years where real fraudulent adulteration was involved. The numerous preparations used by druggists are mostly prepared in factories under competent and careful supervision, and the standards laid down in the British Pharmacopœia are, broadly speaking, carefully adhered to.

The article on Dietetics is fully in accord with modern knowledge, and is contributed jointly by W. O. Atwater, who is in charge of nutrition investigation in the United States Department of Agriculture, and R. D. Milner of the same department. They have compiled an interesting table based on modern researches, giving the amounts of nutrients and energy furnished for 1*s.* in food materials at ordinary prices.

Hygiene is defined in a short paragraph, the reader being very properly referred to the various branches of this big subject under the specific headings of dietetics, food, food preservation, adulteration, water, heating, ventilation, sewerage, bacteriology, housing, cremation, and so forth; while for legal enactments which concern the sanitary well-being of the community the reader is referred to the article on Public Health.

As an example of the care that has been taken to keep the scientific side of the Encyclopædia in touch with modern developments, we may refer to the series of monographs on drugs. They are not, as a rule, long dissertations, but they contain a *résumé* of the pharmacology of the particular drug under description. In the article on Ergot the fact that the extremely complex composition of this drug has been studied in great detail is cited, and the best modes of administration are given.

In the article on Cod liver Oil the researches on the composition of this complex substance are annotated, and it may be noted that the question of the value of active principles is ignored, and the correct statement is made that cod-liver oil has been proved to be more readily absorbed than any other oil. Further, we are glad to note that it is remarked that other oils or combinations of oils promise to give the same nutritive effects.

The various subjects, here only briefly alluded to, are brought well up to date, and considering how rapidly scientific methods advance and how quickly new materials come into existence the monographs on the whole show creditable performance upon the part of the contributors.

## MEDICINE AND THE LAW.

*Medical Examinations under the Workmen's Compensation Act.*

COMMENT was made in a leading article in THE LANCET of Sept. 17th, 1910, p. 899, upon the hearing of an application in the Westminster County Court to discontinue the payment of compensation made to a workman accidentally injured, on the ground that he had refused to submit himself to medical examination on behalf of his employers when asked to do so. Since then another case heard about the same time in the county court, and raising the same point upon similar facts, has been the subject of argument in the Court of Appeal, as well as a second in which a slight variation of the facts afforded the opportunity for further discussion of the principles involved. These two cases, besides appearing in the various law reports, will be found in close proximity to one another in "Butterworth's Compensation Cases" for the current year, or rather in the convenient "Quarterly Advance Sheets" in which these are issued before the year is completed. It will be seen that the case of Warby *v.* Plaistowe and Co. is precisely like the one to which our leading article referred, but it escaped comment at the time because his honour Judge Bray did not decide it at the time of the hearing of the argument before him, but waited till the long vacation before delivering in writing a judgment which, it may be mentioned, the Master of the Rolls described in the Appeal Court as an "admirable" one.

The applicant, Warby, to whom Messrs. Plaistowe and Co. were admittedly liable in respect of injuries received through an accident, was required by them to submit himself for examination by their medical man, Dr. R. J. Collie, either at his house in Porchester-terrace, Hyde Park, or at the workman's home in Eden-grove, Holloway. The workman, on the advice of his solicitors, refused to be examined except at their office, and in the presence of a member of their firm. The county court judge had to decide whether this constituted a refusal on the part of the workman to submit himself to a medical examination, or whether the conditions imposed were reasonable on account of the alleged conduct of Dr. Collie towards workmen on other similar occasions, the allegations made being to the effect that Dr. Collie treated injured workmen as if they were malingerers, and behaved towards them in a brutal manner. In his honour's judgment he assumed in the first place that the complaints against Dr. Collie were well founded, and decided that even if they were so the presence of his solicitor would not be a more efficient protection to the workman than that of his medical attendant, who could interfere, if necessary, during the examination, who would observe, far more intelligently than a solicitor, what was being done and the workman's conduct, and who could make a note of what was said and what passed. "I have assumed," Judge Bray said, "that the charge of brutality and the other allegations were well founded; I am satisfied, however, that they were not. There was no real foundation, in my opinion, for the charge of brutality." He referred to the case of Perry (reported as Terry) *v.* The London County Council (1910) in the *Times* of August 4th, and to Judge Woodfall's decision on that occasion (commented upon in the leading article referred to above), to the effect that the charges against Dr. Collie were without foundation, and he came to the conclusion that there was a refusal on the part of Warby to submit himself to examination and that his application to have his weekly payments continued must fail. It may be mentioned that early in his judgment Judge Bray stated that at the first hearing of the application before him in June he had suggested that Dr. Collie should examine the applicant at the court, that this had been done, and that Dr. Collie's report was that in his opinion the man was still totally incapacitated. In the Court of Appeal, after hearing argument on the part of the workman, and without calling upon counsel for the employers, the Master of the Rolls gave judgment dismissing the appeal and saying that "It is rather curious that in the case we have just decided (Harding *v.* The Royal Mail Steam Packet Company referred to below) I should have expressed the opinion that it cannot be too well known that a solicitor's office is not, in ordinary circumstances, a proper place at which to hold a medical examination of a workman, and I can only emphasise again what I there said on that point." His lordship went on to observe that in the case before the court there had been an attempt by the workman's solicitors to dictate to the employers where the man should be examined by their medical man, and after calling attention to the wording of the paragraph (14) in Schedule I. of the Act governing the matter he pointed out that the Act "gives the employer the sole right to select the medical man who shall examine the workman; it does not give the workman any right to impose conditions such as are claimed here."

In the other case to which reference has been made above, and to which the Master of the Rolls alluded in his judgment, that of Harding *v.* The Royal Mail Steam Packet Company, judgment was given on the same day as in Warby *v.* Plaistowe and Co. In it Dr. Collie was again

the medical man by whom the examination was to be made, but the condition which the workman wished to impose was different, in that his solicitors offered that he should attend for examination either at their office (Lime-street, E.) or at the surgery of the medical man who had attended him, but not at Dr. Collie's house in Porchester-terrace, although the employers' solicitors sent 10*s.* to cover the workman's fare to that address. His honour Judge Bacon held, on the facts, that the workman had not refused to submit himself to a medical examination, and the court dismissed the employers' appeal. The county court judge took no note of the evidence upon which his decision was based, which was referred to in the Court of Appeal as an unfortunate circumstance, but the principle laid down by the Master of the Rolls was that "as long as a man offers to submit himself to examination, and is not unreasonable in saying where it shall take place, he cannot be punished in the manner in which he would be if he acted otherwise." His lordship further said that it was a question of fact. "Was the refusal to go to the employers' doctor's surgery so unreasonable as to amount to a refusal to submit to examination, or to be obstruction?" His lordship could not say that it was, but it was a question for the learned county court judge. "Both parties took a wrong view." It will be seen from this that the Court of Appeal has not laid down that the examination must take place in the consulting-room of the medical man who is treating the workman if the latter so desires, but only that if the workman offers to submit himself to examination there, and refuses to attend at the house of the employer's medical man, he may be acting reasonably and may not be refusing to submit to examination. What is or is not reasonable in such circumstances is a question for the county court judge, which he will have to determine after considering the facts of the individual case if the question is brought before him.

Apart from the interest of these cases to medical men who may be called upon to make such examinations as Dr. Collie was asked to make, it is satisfactory to note that that gentleman's conduct has been completely vindicated by both Judge Woodfall and Judge Bray, in whose courts discussion took place with regard to it, and before whom the serious allegations referred to with regard to it were made.

*Bell* v. *Hunt: The Loss of a Sightless Eye.*

The principles under which compensation for incapacity is awarded under the Workmen's Compensation Act have now been laid down in so many decisions of the Court of Appeal and House of Lords that points practically unaffected by precedent do not often arise. One such appears, however, to have revealed itself in the claim of a workman named Bell, an edged-tool moulder, employed by Messrs. William Hunt and Sons, Limited, a Staffordshire firm. Bell was injured in the course of his work in September, 1910, by a piece of brick which struck his left eye, necessitating its removal. As a matter of fact, however, the eye thus removed had been already injured 15 years before and the sight of it had then been totally destroyed, although this defect had not prevented the man from obtaining employment under Messrs. Hunt, who had not been aware of it. When, however, after his eye had been removed Bell had applied to Messrs. Hunt to take him back they had declined to do so, and he had met with a similar refusal from several other firms, none of which would engage a man having only one eye. The county-court judge at West Bromwich had found (1) that Bell had not full capacity to do his work; and (2) that the accident which caused the blindness was not that of September, 1910, but the one which happened 15 years before, and on these findings he had made an award in favour of the employers from which the claimant appealed. The Master of the Rolls and Lord Justice Buckley agreed with the county-court judge, the former saying that disfigurement as distinct from incapacity was not, speaking generally, within the Act, although he suggested that it might be, for example, in such a case as that of a parlour-maid, whose face might be so scarred by an accidental burning as to prevent her from obtaining employment on the ground of her appearance. The incapacity to work in Bell's case, however, was in no sense due to the accident in September, 1910, which only made obvious the existence of prior incapacity, and the employers were not to be held liable because the workman could no longer conceal his defect. From the judgments of his colleagues Lord Justice Fletcher Moulton dissented, referring to the question of compensation as depending, as a general rule, upon whether the workman had sustained an injury which lessened his earning capacity. With regard to a point which had been raised, that the workman, if compensated, would be reaping advantage from his own wrong in concealing his defect, his lordship questioned whether it was the duty of a workman to reveal his defects when applying for employment. In his opinion, the man impliedly represented himself as skilled, but made no representation as to how he obtained or retained his skill. If an employer attached importance to unimpaired physical qualifications it was for him to make inquiry with regard to those of the workman whom he proposed to engage. Bell was justified in holding himself out when he obtained employment as capable of doing his work, and in his lordship's view the case ought to be remitted to the county-court judge to assess damages. In view of this division of opinion, which had as its result judgment for the respondents, the employers, owing to a majority of the court being in their favour, the case seems likely to be heard of again, and comment upon it, if any be needed, must be deferred until the House of Lords has had the opportunity of reviewing the effect of a combination of unusual circumstances not likely frequently to recur.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the February meeting of the committee 27 cases were considered and grants amounting to £223 made to 19 of the applicants. Appended is an abstract of the cases relieved.

Daughter, aged 40, of late F.R.C.S. No income; delicate health and dependent on mother, whose income is only 10*s.* a week. Relieved 11 times, £98. Voted £12.

M.B., C.M. Edin., aged 61. No income and incapacitated by hemiplegia; four children, all dependent. Voted £12.

Widow, aged 52, of L.F.P.S. Glasg. No income; takes in boarders and receives a little help from a daughter earning 14*s.* a week; health very delicate. Relieved seven times, £70. Voted £12.

Widow, aged 37, of L.R.C.P., L.R.C.S. Edin. Unprovided for at husband's death about ten years ago and has supported herself by nursing; two children. Now asks for a little help towards the school fees of the elder daughter, aged 15. Voted £10.

Widow, aged 62, of M.D. Lond. At husband's death 12 years ago took a boarding house, but has been obliged to exhaust all her capital in order to meet expenses. Voted £12.

Daughters, aged 70 and 63, of late M.R.C.S., L.S.A. Were comfortably provided for at father's death 20 years ago, but made very unfortunate investments and are now practically penniless. Voted £18.

Widow, aged 65, of M.R.C.S. Husband's means were exhausted by a long illness, ending in death a few months ago, and applicant has chronic glaucoma. No children. Voted £12.

Daughter, aged 62, of late M.R.C.S., L.S.A. Since father's death in 1903 has held situations as cook-housekeeper, &c., but is now unable to obtain employment. Voted £12.

M.R.C.S., aged 64. Has completely broken down in health and is practically penniless. Voted £12.

Daughter, aged 49, of late M.R.C.S. Quite unprovided for at father's death and has maintained herself for nearly 20 years, but is now in a delicate state of health and can only undertake occasional and light work. Voted £12.

M.R.C.S., L.R.C.P., aged 51. Is in pecuniary distress through no fault of his own and asks for a little help towards unavoidable expenses before going abroad. Voted £5.

Widow, aged 49, of M.B. Durh. At husband's death 20 years ago started a nursing home and supported herself and a widowed mother, but is now broken down in health and requires a rest. Two children, both delicate and barely self-supporting. Relieved three times, £29. Voted £12.

Widow, aged 66, of L.R.C.P. Edin. Has given music lessons and taken lodgers, but is now in bad health and dependent on a daughter earning £1 a week. Relieved six times, £60. Voted £12.

Widow, aged 60, of M.D. Glasg. No income and dependent on a son who can ill afford to help. Relieved once, £12. Voted £12.

Daughter, aged 56, of late M.R.C.S. Endeavours to support herself by letting lodgings but finds it impossible to meet unavoidable expenses. Relieved four times, £55. Voted £10.

Widow, aged 69, of L.F.P.S. Glasg. Husband's means were exhausted by a long illness which preceded his death and applicant endeavours to maintain herself by taking boarders; health indifferent. Relieved three times, £22. Voted £12.

Daughter, aged 49, of late M.R.C.S. No income; health too delicate to admit of employment and dependent on a brother-in-law whose earnings are extremely small. Relieved twice, £24. Voted £12.

Widow, aged 65, of L.R.C.P., L.R.C.S. Edin. Is quite penniless and dependent on a married son earning £1 a week. Relieved 12 times, £129. Voted £12.

Widow, aged 45, of L.R.C.P., L.R.C.S. Edin. No income and children unable to help; is incapacitated by a chronic complaint and practically dependent on help given by this fund and another society. Relieved 15 times, £172. Voted £12.

Contributions should be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

# Public Health.

## ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Chelmsford Rural District.*—Dr. J. C. Thresh, who takes much interest in the question of housing in rural districts, thinks that the powers conferred by Sections 16 and 17 of the Housing and Town Planning Act, 1909, are not likely to prove of much service at present since the council here in question is reluctant to accept the responsibility for closing orders. As regards the power of appeal to the Local Government Board which is given to owners Dr. Thresh regards it as more disconcerting than an appeal to the magistrates or court of sessions would be. He reports that more cottages are required in several of the parishes, but the council is not inclined to take action in face of the fact that if the farmers provided proper accommodation for their labourers there would be no necessity for action on the part of the council, which objects, and Dr. Thresh thinks naturally, to subsidise the land by providing cheap cottages for the labourers employed thereon. Another objection in his opinion is the unfairness of saddling any parish or area with rates in order that a few of the inhabitants may occupy cottages at a low rental. The way out of the difficulty is, Dr. Thresh thinks, for the council to provide where required a few cottages with three bedrooms and to let them at a rent which will involve no loss to the ratepayers. This suggestion seems to accept it as established that the labourers could and would pay the rent necessary to prevent loss; in other words, it raises a large and somewhat difficult problem. But there can be no doubt as to the very great difficulty of adequate housing in rural districts, and Dr. Thresh refers to an illustrative case which occurred at Ingatestone, where there were several cottages belonging to three different owners which were considered unfit for habitation. Two of the owners offered to close their cottages at once if the council would serve closing orders, an action which would have involved turning eight families into the street. The owners refused to make any structural alteration and presumably the council refused to issue the closing orders and the cottages remain occupied. There seems, however, prospect of a solution so far as a part of Ingatestone is concerned owing to the offer of a local builder to erect as many cottages as would be required, not exceeding 50, provided that the council would offer facilities for drainage and would carry the water main to the site, conditions to which the council agreed subject to the Local Government Board sanctioning a loan for sewer extension. But here again, to some extent at least, there comes in the principle of the ratepayers helping the farmer to house his labourers, inasmuch as it does away with the expense of sinking wells and cesspools. Dr. Thresh furnishes in another part of his report an example of the facility with which diseased meat may find its way into butchers' shops. At two slaughter-houses in the district there is a suspicion that unsound animals are slaughtered, and in one of these places the carcass of a cow which had suffered from a disease rendering it unfit for human consumption was found. It was alleged that the cow had been fetched from a farm and slaughtered for the sale of its hide, and the flesh was, the butcher stated, being sent to the kennels. The clerk to the district council was consulted as regards seizure, but in his opinion it was not a legal offence to have either a diseased animal or a diseased carcass in a slaughter-house, and if it was diseased or unfit for human food there should be evidence that it was intended for human consumption, otherwise the owner might claim damages from the council. It is difficult to find fault with this reasoning, but clearly the law requires amendment to cover obvious risks such as this, more especially as in a very large number of sanitary districts, whether they be rural or small urban districts, meat inspection is not carried out, largely because neither the medical officers of health nor the sanitary inspectors have had any special training in meat inspection, and the district councils do not offer them any encouragement or facilities for acquiring such experience. Gradually we are moving forward, but at the present rate the current century will be far advanced before the inspection referred to is of much value.

*Woking Urban District.*—Dr. R. W. C. Pierce, reporting upon the housing of the working-classes in this district, states that the sanitary committee went thoroughly into the subject during the past year, and that their method of investigation consisted in taking the evidence of the officials as well as of several members of the public who had manifested an interest in the subject. Dr. Pierce, as the result of observations made, concludes that there are many families in the district who cannot, with due regard to the necessary expenditure on food and clothing, pay the rents prevailing in the district, and consequently they are obliged to share a house with another family, an arrangement which leads to overcrowding and other evils. The average rental (inclusive of rates) for a cottage with three bedrooms is between 7*s.* 6*d.* and 8*s.* 6*d.* a week, a rent which is obviously beyond the means of many of the labouring classes. Dr. Pierce regards it as an urgent necessity that the disproportion between the income and rent should be diminished either by providing cottages at a lower rental or by giving the labouring classes more constant and remunerative work, or by a combination of both methods. It seems that a row of cottages which was not being properly looked after by the owners was taken over by an association who let the houses to struggling and deserving families with very satisfactory results, lady visitors keeping a strict supervision over the cottages. The weekly rental of these eight cottages, which were taken over on lease, was formerly 7*s.*, but it has now been reduced to 6*s.* 6*d.*, the tenants earning from 16*s.* to 20*s.* per week. Lodgers are not allowed to be taken without consent, and a return of 3 per cent. only is expected from the association. Dr. Pierce suggests that other similar blocks of dwellings should be taken over by the council, and he thinks that self-contained cottage flats will meet a part of the existing need for cheaper dwellings. Gipsy encampments appear to cause some trouble in this district from the circumstance that some of them are pitched in low-lying and damp situations where slop and waste water cannot be properly disposed of. Moreover, the condition of the tents and vans is not satisfactory.

## REPORTS OF SCHOOL MEDICAL OFFICERS.

*The County of Berkshire.*—Dr. Gerard C. Taylor, the school medical officer and county medical officer of health, reports that during the year 1910 there were 58 schools or departments closed owing to infectious sickness, 17 of these being closed by the medical officer of health with the approval of the school medical officer, and 41 by the local education authorities or school managers acting on the advice of the school medical officer. During the year material improvement was made in the lighting, ventilation, and heating of several of the schools. In the cloakrooms the indiscriminate use of the pegs is prevented by each child being required to use his or her duly numbered peg. As regards the playgrounds tar-paving is not made as much use of as could be desired. The total population of this administrative area is estimated at about 142,556, and the number of children on the rolls of the elementary schools is about 24,271, no children under 5 years of age being admitted. The actual medical inspection has been carried out by two assistant school medical officers, but both these resigned their posts during the year 1910, one to become county medical officer and school medical officer of Rutland, and the other to join the staff of the London Education Committee. In two instances gratuitous dental treatment has been provided, in one case the cost being borne by one of the managers, and in the other the managers have accepted the offer of a dental surgeon to treat the children gratuitously when sent to him by the parents, and the committee have placed a room in the school at his disposal. In another instance a nursing association, acting as a care committee for two schools in this area, have arranged with a dentist to inspect the children gratuitously and to undertake any necessary treatment for a small fee, to be paid by the parent. This local scheme will probably include the sale of toothbrushes at a small cost.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7963 births and 5052 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 17·6

to 14·9 per 1000, rose again to 15·4 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these towns averaged 15·9 per 1000, and the mean recorded rate in London during the same period was also equal to 15·9. The annual death-rates during last week ranged from 4·9 in Handsworth, 5·3 in King's Norton, 7·6 in Wallasey, and 8·3 in Northampton, to 21·9 in Sheffield, 22·5 in Middlesbrough, 22·7 in Plymouth, and 23·3 in Coventry. The 5052 deaths from all causes in the 77 towns showed an increase of 141 upon the number returned in the previous week, and included 695 which were referred to the principal epidemic diseases, against numbers increasing from 477 to 702 in the five preceding weeks; of these 695 deaths, 460 resulted from measles, 109 from whooping-cough, 44 from diphtheria, 42 from infantile diarrhœa, 22 from scarlet fever, 17 from enteric fever, and 1 from small-pox. The annual death-rate in the 77 towns from these epidemic diseases averaged 2·1 per 1000. The fatal cases of measles, which had steadily increased from 160 to 474 in the first ten weeks of the current quarter, declined last week to 460; the highest annual death-rates from this disease among the 77 towns last week were 3·8 in Coventry, 4·1 in Plymouth, 5·4 in Devonport, 5·6 in Wigan, and 8·0 in Sheffield. The deaths from whooping-cough, which had been 108 and 80 in the two previous weeks, rose again to 109 last week; they caused the highest rates last week, 1·7 in Wigan, 1·8 in Aston Manor, and 1·9 in Coventry and in West Hartlepool. The 44 deaths from diphtheria showed a further decline of 12 from the numbers in recent weeks; they included 13 in London and its suburban districts, 4 in Leeds, and 3 both in Bristol and in Sheffield. The 42 deaths of infants under 2 years of age attributed to diarrhœa, showed a further decline from the numbers in recent weeks, and were fewer than in any previous week of this year. The 22 fatal cases of scarlet fever also showed a further decline from the numbers in recent weeks; 4 were recorded in London and 2 each in Liverpool, Stoke-on-Trent, and Bury. The deaths referred to enteric fever, which had been 15 and 13 in the two previous weeks, rose to 17 last week, of which 3 occurred in Manchester, 3 in Leeds, and 2 both in London and in Portsmouth. The fatal case of small-pox occurred in London, and was admitted to hospital from Poplar. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had declined in the four preceding weeks from 1276 to 1166, had further fallen to 1121 on Saturday last; 146 new cases of this disease were admitted to these hospitals during last week, against 138, 129, and 120 in the three preceding weeks. These metropolitan hospitals also contained on Saturday last 920 cases of diphtheria, 822 of measles, 256 of whooping-cough, 32 of enteric fever, and 38 of small-pox. The 1419 deaths from all causes in London last week, an increase of 28 upon the number in the previous week, included 284 which were referred to diseases of the respiratory system, against numbers ranging from 421 to 318 in the four preceding weeks; 7 deaths were also referred to influenza. In the 77 towns 156 deaths from different forms of violence were registered during last week, against 173, 153, and 142 in the three preceding weeks; and 377 inquest cases were recorded. The causes of 46, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 47 other smaller towns; the 46 uncertified causes of death in the 77 towns last week included 9 in Birmingham, 4 in Stoke-on-Trent, and 3 each in Liverpool, Sheffield, and Preston.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 907 births and 617 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 19·8 to 15·9 per 1000, rose again to 16·8 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these towns averaged 17·0 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 English towns. The annual death-rate last week in the eight Scotch towns ranged from 14·3 and 14·6 in Leith and Aberdeen to 20·1 in Dundee and 20·8 in Paisley. The 617 deaths from all causes in the eight towns last week showed an increase of 34 upon the number returned in the previous week, and included 66 which were referred to the principal epidemic diseases, against 76, 57, and 60 in the three preceding weeks; these 66 deaths were equal to an annual rate of 1·8 per 1000, which was 0·3 below the rate from the same diseases in the 77 English towns; the highest rates from these diseases in the Scotch towns last week were 3·3 in Paisley and 4·2 in Leith. Of these 66 deaths from epidemic diseases last week in the eight towns 36 resulted from whooping-cough, 11 from diarrhœa, 9 from diphtheria, 5 from scarlet fever, 4 from measles, and 1 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 32 and 36 in the two previous weeks, were again 36 last week, and included 15 in Glasgow, 5 each in Edinburgh, Paisley, and Leith, and 4 in Dundee. The 11 deaths attributed to diarrhœa (of which 10 were of infants under two years of age), exceeded the number in the previous week by 4, and included 5 both in Glasgow and in Dundee. The deaths referred to diphtheria, which had been 5 in each of the two previous weeks, rose to 9 last week; 4 occurred in Edinburgh and 3 in Glasgow. Of the 5 fatal cases of scarlet fever, 2 were recorded in Glasgow; and the 4 deaths from measles included 2 both in Glasgow and in Edinburgh. The death resulting from enteric fever was registered in Leith. The deaths referred to diseases of the respiratory system in the eight towns, which had declined in the four preceding weeks from 181 to 108, were 109 in the week under notice. The 18 deaths attributed to different forms of violence were within 2 of the number in the previous week; and 180, or 29 per cent., of the 617 deaths from all causes occurred in public institutions. The causes of 21, or 3·4 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·9 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 612 births and 389 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 24·1 to 19·3 per 1000, further fell to 17·4 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these 22 towns averaged 20·4 per 1000; the rate during the same period did not exceed 15·9 in the 77 English towns, and 17·0 in the eight Scotch towns. The annual death-rate during last week was equal to 20·8 in Dublin, 15·4 in Belfast, 16·4 in Cork, 10·7 in Londonderry, 15·0 in Limerick, and 15·6 in Waterford; in the 16 smallest of the Irish towns the mean annual death-rate last week was equal to 17·2 per 1000. The 389 deaths from all causes in the 22 towns last week showed a further decline of 42 from the numbers returned in recent weeks and included 21 which were referred to the principal epidemic diseases, against 41, 25, and 26 in the three preceding weeks; these 21 deaths were equal to an annual rate of 0·9 per 1000, which was 1·2 below the mean rate from the same diseases in the 77 English towns. Of these 21 deaths in the Irish towns from the principal epidemic diseases, 8 resulted from measles, 6 from diarrhœa, 5 from whooping-cough, and 1 each from scarlet fever and enteric fever, but not one either from small-pox or diphtheria. The 8 fatal cases of measles, of which 7 occurred in Dublin and 1 in Drogheda, showed an increase of one on the number in the previous week. The 5 deaths from whooping-cough showed a further considerable decline from the numbers in recent weeks; they included 4 in Dublin and 1 in Belfast. Five of the 6 deaths attributed to diarrhœa occurred in Dublin. The death referred to enteric fever was recorded in Dublin, and the fatal case of scarlet fever occurred in Belfast. The deaths in the 22 towns referred to diseases of the respiratory system, which had declined in the five preceding weeks from 141 to 100, further fell last week to 90. Of the 389 deaths from all causes last week, 105, or 27 per cent., were recorded in public institutions. The causes of 13, or 3·3 per cent.,

# ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1911.

*(Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1911. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES ‡ | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Enteric fever. | Diarrhœa and enteritis (under 2 years). | Total. | Annual rate per 1000 persons living. | Deaths from all causes. | Death-rate per 1000 living.† |
| LONDON | 4,912,054 | 28 | 597 | 562 | — | 53 | 1 | 21 | 272 | 10 | 1544 | 4·1 | — | 416 | 14 | 54 | 136 | 7 | 70 | 697 | 1·8 | 6289 | 17·6 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington | 154,072 | — | 15 | 11 | — | 5 | — | 1 | 8 | 1 | 41 | 3·5 | — | 1 | — | 1 | 7 | — | 2 | 11 | 0·9 | 171 | 15·5 |
| Kensington | 185,607 | — | 19 | 25 | — | — | — | — | 10 | — | 54 | 3·8 | — | 23 | — | 5 | 11 | — | 3 | 42 | 2·9 | 222 | 16·8 |
| Hammersmith | 129,140 | — | 11 | 17 | — | — | — | 1 | 5 | — | 34 | 3·4 | — | 5 | — | 2 | 5 | — | 6 | 18 | 1·8 | 184 | 19·4 |
| Fulham | 186,190 | — | 21 | 31 | — | 1 | — | 1 | 12 | 1 | 67 | 4·7 | — | 6 | — | 1 | 6 | — | 3 | 16 | 1·1 | 202 | 14·8 |
| Chelsea | 75,673 | — | 12 | 8 | — | — | — | — | 1 | — | 21 | 3·6 | — | 4 | — | 1 | 1 | — | — | 6 | 1·0 | 98 | 17·5 |
| City of Westminster | 165,593 | 1 | 26 | 9 | — | 1 | — | 1 | 2 | 1 | 41 | 3·2 | — | 2 | 1 | 1 | — | 1 | 2 | 7 | 0·6 | 188 | 16·6 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone | 124,373 | — | 7 | 7 | — | 2 | — | — | 6 | — | 22 | 2·3 | — | 17 | — | — | 3 | 1 | 2 | 23 | 2·4 | 190 | 21·2 |
| Hampstead | 97,288 | — | 5 | 15 | — | 3 | — | — | 6 | — | 29 | 3·9 | — | 2 | — | — | 1 | 1 | 1 | 5 | 0·7 | 67 | 10·2 |
| St. Pancras | 238,187 | — | 17 | 29 | — | 3 | — | 1 | 9 | 1 | 60 | 3·3 | — | 23 | — | 1 | 4 | — | 2 | 30 | 1·6 | 345 | 19·8 |
| Islington | 355,550 | — | 46 | 34 | — | 7 | — | — | 9 | — | 96 | 3·5 | — | 24 | 2 | 3 | 4 | 1 | 4 | 38 | 1·4 | 451 | 17·1 |
| Stoke Newington | 55,260 | — | 6 | 6 | — | — | — | — | 2 | — | 14 | 3·3 | — | 4 | — | — | 3 | — | — | 7 | 1·7 | 53 | 13·0 |
| Hackney | 242,388 | — | 30 | 17 | — | 1 | — | — | 21 | — | 69 | 3·7 | — | 21 | — | 3 | 12 | — | 1 | 37 | 2·0 | 295 | 16·6 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn | 52,484 | — | 2 | 7 | — | — | — | — | 3 | — | 12 | 3·0 | — | 2 | — | 1 | — | — | 1 | 4 | 1·0 | 74 | 19·8 |
| Finsbury | 93,874 | — | 6 | 9 | — | 3 | — | — | 12 | — | 30 | 4·2 | — | 20 | — | 2 | 4 | — | 2 | 28 | 3·9 | 147 | 21·1 |
| City of London | 16,069 | — | 1 | — | — | 1 | — | — | 2 | — | 4 | 3·2 | — | — | — | — | — | — | — | — | — | 31 | 27·6 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch | 113,981 | — | 11 | 9 | — | — | — | 1 | 12 | — | 33 | 3·8 | — | 28 | 1 | 1 | 6 | — | 2 | 38 | 4·3 | 203 | 24·3 |
| Bethnal Green | 131,855 | — | 17 | 14 | — | 1 | — | 1 | 13 | 1 | 47 | 4·6 | — | 16 | 1 | 2 | 8 | — | 1 | 28 | 2·8 | 210 | 21·0 |
| Stepney | 316,269 | 26 | 37 | 47 | — | 5 | — | 1 | 23 | — | 139 | 5·7 | — | 46 | — | 2 | 4 | — | 10 | 62 | 2·6 | 446 | 19·2 |
| Poplar | 172,917 | 1 | 25 | 21 | — | 4 | — | 1 | 8 | — | 60 | 4·5 | — | 32 | — | 9 | 3 | 1 | 2 | 47 | 3·5 | 272 | 21·1 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark | 212,560 | — | 29 | 23 | — | 2 | — | — | 20 | 1 | 75 | 4·6 | — | 17 | — | 3 | 12 | 1 | 2 | 35 | 2·1 | 321 | 20·6 |
| Bermondsey | 126,919 | — | 27 | 18 | — | 1 | — | 1 | 8 | 1 | 56 | 5·8 | — | 7 | 3 | — | 8 | — | 2 | 20 | 2·1 | 199 | 20·9 |
| Lambeth | 330,000 | — | 40 | 36 | — | 3 | — | — | 12 | 2 | 93 | 3·7 | — | 23 | — | 3 | 7 | — | 2 | 35 | 1·4 | 405 | 16·5 |
| Battersea | 190,434 | — | 31 | 30 | — | — | — | — | 9 | — | 70 | 4·8 | — | 28 | 1 | 2 | 6 | — | 5 | 42 | 2·9 | 227 | 16·6 |
| Wandsworth | 314,087 | — | 60 | 39 | — | 4 | 1 | 1 | 13 | 1 | 119 | 4·9 | — | 34 | 2 | 5 | 6 | — | 4 | 51 | 2·1 | 356 | 15·6 |
| Camberwell | 289,130 | — | 23 | 29 | — | — | — | 1 | 17 | — | 70 | 3·2 | — | 24 | 1 | 2 | 3 | — | 3 | 33 | 1·5 | 361 | 16·9 |
| Deptford | 120,715 | — | 14 | 14 | — | — | — | — | 13 | — | 41 | 4·4 | — | — | 2 | — | 4 | — | 3 | 9 | 1·0 | 160 | 18·2 |
| Greenwich | 114,872 | — | 8 | 12 | — | 3 | — | 1 | 5 | — | 29 | 3·3 | — | 1 | — | 1 | — | — | 3 | 5 | 0·6 | 107 | 12·4 |
| Lewisham | 169,078 | — | 21 | 30 | — | 2 | — | 3 | 4 | — | 60 | 4·6 | — | 3 | — | 2 | 7 | 1 | 2 | 15 | 1·2 | 163 | 13·1 |
| Woolwich | 137,489 | — | 29 | 15 | — | 1 | — | 5 | 5 | — | 55 | 5·2 | — | 3 | — | 1 | 1 | — | — | 5 | 0·5 | 151 | 15·3 |
| Port of London | — | — | 1 | — | — | — | — | — | 2 | — | 3 | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

of the deaths in the 22 towns last week were not certified either by a registered medical practitioner or by a coroner after inquest; the proportion of uncertified causes of death last week did not exceed 0·9 per cent. in the 77 English towns, and was 3·4 per cent. in the eight principal Scotch towns.

### VITAL STATISTICS OF LONDON DURING FEBRUARY, 1911.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 4·1 per 1000 of the population, provisionally estimated at 4,912,504 persons in the middle of this year. In the three preceding months the rates were 5·0, 4·3, and 4·1 per 1000 respectively. The lowest rates last month were recorded in Westminster, St. Marylebone, St. Pancras, Stoke Newington, Holborn, the City of London, Camberwell, and Greenwich; and the highest rates in Fulham, Stepney, Bermondsey, Battersea, Wandsworth, and Woolwich. Twenty-eight cases of small-pox were notified last month, 26 belonging to Stepney, one to the City of Westminster, and one to Poplar. The prevalence of scarlet fever showed no variation from that recorded in the preceding month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Chelsea, the City of Westminster, Bermondsey, Battersea, Wandsworth, and Woolwich. The Metropolitan Asylums Hospitals contained 1224 scarlet fever patients at the end of last month, against 1727, 1574, and 1280 at the end of the three preceding months; the weekly admissions averaged 142, against 183, 155, and 130 in the three preceding months. Diphtheria was rather more prevalent than it had been in other recent months; this disease showed the greatest proportional prevalence in Fulham, Hampstead, Stepney, Bermondsey, Battersea, and Lewisham. The number of diphtheria patients remaining under treatment in the Metropolitan Asylums Hospitals at the end of last month was 902, against 866, 827, and 842 at the end of the three preceding months; the weekly admissions averaged 120 last month, against 106, 95, and 107 in the three preceding months. The prevalence of enteric showed a marked decline; among the several metropolitan boroughs this disease was proportionally most prevalent in Paddington, Hampstead, Finsbury, Poplar, and Greenwich. There were 41 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 88 and 68 at the end of the two preceding months; the weekly admissions averaged 7, against 16, 11, and 7 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Southwark. The 21 cases of puerperal fever notified during the month included 5 in Woolwich and 3 in Lewisham. Of the 10 cases notified as cerebro-spinal meningitis, 2 belonged to Lambeth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the population of the several boroughs. During the four weeks ending Feb. 25th the deaths of 6299 London residents were registered, equal to a corrected annual death-rate of 17·6 per 1000, against 15·8 and 16·5 in the two preceding months. The death-rates last month ranged from 10·2 in Hampstead, 12·4 in Greenwich, 13·0 in Stoke Newington, 13·1 in Lewisham, 14·8 in Fulham, and 15·3 in Woolwich, to 20·9 in Bermondsey, 21·0 in Bethnal Green, 21·1 in Finsbury and in Poplar, 21·2 in St. Marylebone, 24·3 in Shoreditch, and 27·6 in the City of London. The 6299 deaths from all causes included 416 which were referred to measles, 14 to scarlet fever, 54 to diphtheria, 136 to whooping-cough, 7 to enteric fever, and 70 (among children under two years of age) to diarrhœa and enteritis. No death from any of these diseases was recorded in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Paddington, the City of Westminster, Hampstead, Greenwich, and Woolwich; and the highest rates in Kensington, Finsbury, Shoreditch, Bethnal Green, Poplar, and Battersea. The 416 deaths from measles were 268 in excess of the corrected average number in the corresponding period of the five preceding years; the greatest proportional mortality from measles last month was recorded in Kensington, St. Marylebone, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Battersea. The 14 fatal cases of scarlet fever were 22 below the corrected average number, and included 3 in Bermondsey and 2 each in Islington, Wandsworth, and Deptford. The 54 deaths from diphtheria were 12 fewer than the corrected average number; this disease was proportionally most fatal in Kensington, Hammersmith, Finsbury, Poplar, Bethnal Green, and Wandsworth. The 136 fatal cases of whooping-cough showed a decline of 23 from the corrected average number; the greatest proportional mortality from this disease was recorded in Hammersmith, Hackney, Shoreditch, Bethnal Green, Southwark, and Bermondsey. The 7 deaths from enteric fever were 5 below the corrected average number; these 7 deaths belonged respectively to the City of Westminster, St. Marylebone, Hampstead, Islington, Poplar, Southwark, and Lewisham. The 70 deaths from diarrhœa and enteritis among children under two years of age included 10 in Stepney, 6 in Hammersmith, 5 in Battersea, 4 in Islington, and 4 in Wandsworth. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was nearly 50 per cent. above the average.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: H. W. Gordon-Green to the *Hampshire*, on recommissioning. Staff-Surgeons: W. R. Trythall to the *Aboukir*, on recommissioning; and A. Davidson to the *President*, additional, for three months' hospital course at the West London Hospital. Surgeons: A. S. Paterson to the *Hearty*; E. L. Markham to the *Triton*; H. B. German to the *Jupiter*, additional; E. B. Kenny to the *King Alfred*; H. Burns to the *Halcyon*, additional, for the *Spanker*, on recommissioning; A. Fairley to the *Aboukir*, on recommissioning; A. T. Rivers to the *Africa*; A. L. Robinson to the *Victory*, additional, for disposal on the *Dreadnought* paying off; and L. C. R. Robinson to the *President*, additional, for three months' hospital course at the Dreadnought Seamen's Hospital.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel C. Birt, Officer Commanding No. 14 Company, Royal Army Medical Corps and in charge of the Royal Infirmary at Dublin, has been selected for the higher rate of pay under Article 317 of the Royal Warrant, vice Lieutenant-Colonel J. M. Reid retired. Lieutenant-Colonel H. D. Rowan has been transferred from the Aldershot to the Southern Command and appointed in Charge of the Military Hospital at Tidworth Park, Salisbury Plain. Lieutenant-Colonel T. G. Lavie has been transferred from Newbridge to Queenstown. Lieutenant-Colonel S. Hickson, from Potchefstroom, has taken up duty at Wynberg. Lieutenant-Colonel G. E. Hale, D.S.O., has taken over command of the Station Hospital at Mhow. An exchange in the roster for service abroad has been approved by the War Office between Lieutenant-Colonel W. W. Pike, D.S.O., and Lieutenant-Colonel C. R. Tyrrell. Major H. A. Hinge, on completion of a tour of service in India, has been posted to the London District and appointed to the Recruiting Medical Staff. Major A. H. Morris has vacated his appointment in the Scottish Command and embarked for Malta to take over duty as Specialist Sanitary Officer. Major S. W. Sweetnam, commanding the Military Hospital at Kirkee, has been granted six months' leave of absence. Major J. C. B. Statham, on return from a tour of service in South Africa, has been appointed Clinical Pathologist to Queen Alexandra's Military Hospital at Grosvenor-road. Approval has been given to the grant of pay at higher rate under the provision of Article 317 of the Royal Warrant to the following majors with 20 years' service and qualified for promotion to the rank of Lieutenant-Colonel, viz.: E. E. Powell, E. McK. Williams, J. C. Connor, F. W.

Hardy, W. A. S. J. Graham, D. D. Shanahan, C. W. H. Whitestone, A. Pearse, and C. Dalton. Major C. A. Young has arrived home from Mauritius. Major W. J. Taylor has embarked for Sierra Leone. Major A. W. Bewley, commanding the Station Hospital at Landour, has joined for duty at Meerut. Captain J. E. Powell, Captain R. K. White, Captain E. B. Booth, and Captain W. G. Maydon have arrived home tour-expired from India. Captain G. F. Rugg has taken up duty as Specialist in Advanced Operative Surgery to the Fourth (Quetta) Division. Captain C. R. M. Morris, from Sialkot, has been granted six months' general leave of absence. The appointment of Captain E. Bennett as Adjutant to the Royal Army Medical Corps School of Instruction, North Midland Division, has been extended to Oct. 31st next. Captain H. O. M. Beadnell, on sick leave from India, has been reverted to the home establishment, tour-expired. Captain G. J. Houghton has embarked for a tour of service on the West Coast of Africa. Captain H. Simson, Specialist in the Prevention of Disease, has been transferred from Ahmednagar to Poona. Captain E. J. Kavanagh, from Ranikhet, has taken up duty at Delhi. Captain R. C. Hallowes, from Cairo, has been appointed for duty at Dundalk. Captain E. S. Worthington, M.V.O., Specialist in Advanced Operative Surgery, has been posted to the London District. Lieutenant G. F. Dawson has been transferred from Chakrata to Meerut Cantonment. Lieutenant T. B. Nicholls, from Tidworth Park, has taken up duty at the Military Hospital, Cairo. Lieutenant R. C. G. M. Kinkead, from Buttevant, has been appointed to the Cork District. Lieutenant J. C. L. Hingston has been posted to Madras.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions of officers of the Indian Medical Service:—Majors to be Lieutenant-Colonels: James Muir Crawford, Bawa Jiwan Singh, Ernest Gerald Robert Whitcombe, Charles Henry James, Frederick O'Kinealy, and Arthur William Treminhere Buist (dated Jan. 31st, 1911). Captains to be Majors: Corrie Hudson, D.S.O., Charles Frederick Weinman, Hamilton Maxwell Cruddas, George King, George Patrick Thomson Groube, Pandit Piaraylal Atal, William MacMullen Pearson, and David Claude Kemp (dated Jan. 28th, 1911).

Surgeon-General C. P. Lukis, C.S.I., Director-General of the Indian Medical Service, has been granted a good service pension, vice Surgeon-General Sir Gerald Bomford, K.C.I.E. Lieutenant-Colonel J. T. Calvert has taken over duty as Principal of the Medical College, Calcutta, during the absence on leave of Lieutenant-Colonel F. J. Drury. Lieutenant-Colonel C. F. Willis has been granted seven months' leave of absence home from India. Lieutenant-Colonel H. Handley, civil surgeon, on completion of special duty at the headquarters of the Second (Rawalpindi) Division, has been appointed Civil Surgeon of Lahore in succession to Lieutenant-Colonel D. T. Lane, transferred. Lieutenant-Colonel W. A. Sykes, Bengal, has arrived home on leave. Lieutenant-Colonel R. Robertson has joined at Madras. The services of Lieutenant-Colonel R. B. Roe, civil surgeon and superintendent of the Lunatic Asylum at Nagpur, have been placed at the disposal of the Army Department. Lieutenant-Colonel J. W. Rodgers, in medical charge of the 52nd Sikhs (Frontier Force), has been granted four and a half months' leave of absence from India. Major E. E. Waters has been appointed to officiate as Professor of Materia Medica and Second Physician at the College Hospital, Calcutta. Major H. Innes, civil surgeon at Mymensingh, has been appointed Civil Surgeon at Shillong, in succession to Major E. C. Macleod, appointed additional Civil Surgeon at Dacca. Major C. Donovan has been granted five months' extension of his leave by the Secretary of State, on medical certificate. Major E. D. W. Greig has been appointed to officiate as Director of the Central Research Institute at Kasauli during the absence on leave of Lieutenant-Colonel Sir David Semple, R.A.M.C. Major C. Duer has been confirmed in the appointment of Civil Surgeon of Simla (West). Major J. L. Macrae, civil surgeon of Coorg, has been granted privilege leave combined with furlough, for eight months. Major H. Boulton has been granted one month's extension of his leave of absence from India. Captain S. T. Crump, civil surgeon of Loimwe, has been appointed Resident Medical Officer at the General Hospital, Rangoon. Captain W. G. Hamilton has been appointed to officiate as Superintendent of the Presidency Jail at Calcutta during the absence on leave of Major J. Mulvany. Captain D. H. F. Cowin has taken over charge of the Dera Ghazi Khan District Jail from Captain A. K. Lauddie. Captain M. Foster Reaney has been appointed to officiate as Civil Surgeon of Nagpur. Lieutenant A. Mac D. Dick has been appointed Specialist in Advanced Operative Surgery to the Burma Division. Lieutenant R. B. Lloyd, officiating as medical officer in charge of the 58th Vaughan's Rifles, has been transferred to the 31st Duke of Connaught's Own Lancers at Kohat and attached for duty. Lieutenant B. Gale has been appointed as Specialist in Radiography and Electrical Science to the First (Peshawar) Division.

SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

Sydney James Higgins to be Lieutenant (on probation) (dated Feb. 15th, 1911).

TERRITORIAL FORCE.

*Royal Army Medical Corps.*

3rd Northern General Hospital, Royal Army Medical Corps: James Martin Beattie to be Major (dated Jan. 2nd, 1911).

*Attached to Units other than Medical Units.*—Captain Cecil A. Corke resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated March 18th, 1911). Lieutenant Thomas Price Thomas to be Captain (dated Feb. 16th, 1911). Captain John G. Ronald resigns his commission (dated March 22nd, 1911).

*For Attachment to Units other than Medical Units.*—Robert Henry to be Lieutenant (dated Jan. 9th, 1911).

ROYAL ARMY MEDICAL CORPS EXAMINATION.

A competition for not less than 20 commissions in the Royal Army Medical Corps will be held on July 26th next and following days. Applications to compete should be made to the Secretary, War Office, not later than July 17th.

# Correspondence.

"Audi alteram partem."

## CHARLES BELL AND THE MOTOR AND SENSORY FUNCTIONS OF SPINAL NERVES.

*To the Editor of* THE LANCET.

SIR,—Professor A. Keith (THE LANCET, March 18th) bases his opinions principally upon: (1) Sir Charles Bell's letters published by Lady Bell in 1870 (Messrs. Murray); and (2) Alexander Shaw's "Narrative of the Discoveries of Sir Charles Bell in the Nervous System" (1839). I am, of course, well acquainted with both these publications, and while fully recognising their value as documents to character, I cannot accept them as scientific evidence relating to the physiological events of 1821–22. They, among other publications, were present to my mind when I stated that no evidence subsequent to 1822 can be accepted as "authoritative," and I hope that Professor Keith will believe that in my desire to limit the field of discussion to the scientific publications of the time I was doing my best—with due justice to "my countryman" as well as to Magendie—to keep the name of Sir Charles Bell as free as possible from the unfortunate polemics that arose after 1822, chiefly through the devoted advocacy of the two Shaws. And, with considerable knowledge of the facts, I deliberately repeat the statement that no publication subsequent to 1822 is to be regarded as authoritative; the case between Bell and Magendie as regards the nerve-roots is limited to the publications of 1811 and 1822. The tedious "narrative" promulgated by the younger Shaw in 1839, and adopted by Professor Keith as authoritative in 1911, is not entitled to rank as evidence. Nevertheless, at this stage I am afraid I cannot avoid dealing with two points raised in this connexion by Professor Keith—viz., (1) the incident of the prize medal in connexion with Shaw's visit to Paris in 1821; and (2) the experiment of the dead rabbit.

Shaw's visit to Paris in 1821 is mentioned by Shaw himself in the footnotes of pages 84 and 89 of vol. ii. (1822) of Magendie's *Journal de Physiologie;* the facts about the prize-medal are as follows. Magendie in 1821—38 years of age, at the zenith of his extraordinary powers, the undisputed master of his science in Paris and throughout the continent, member of nearly every important scientific body in Europe—gave a full account of Bell's 1821 paper on the nerves of the face, as he did of any paper that he deemed to be of value, and shortly afterwards invited Bell to demonstrate his principal experiments as a preliminary to making a report concerning the adjudication of a prize—as was then and still is the custom of the Académie des Sciences. Mr. John Shaw, who was at that time Bell's demonstrator at the Windmill-street School of Anatomy, went over to Paris, and was only partially successful in his demonstration—for various reasons of which he himself gives explanations—and the medal was not awarded to Bell.

The experiment of the dead rabbit—which even now and with careful explanation is an excellent class demonstration—is first described by Bell in the preface to his "Exposition of the Nervous System" of 1824, at p. 29.[1] Professor Keith, after quoting the more popular description of the experiment given in Bell's "Letters," at p. 171, goes on to say that:—

> No statement could be clearer as to the function of the roots. At this early date (March 12th, 1810) Bell recognised that the spinal roots were different in function and that the anterior root was "*sensible*" (*motor* in modern terminology), and the posterior "*insensible*," or sensory ..... &c.

Slightly simplified, does this not amount to saying that no statement could be clearer as to the function of the roots, because Bell recognised that the anterior root was "*sensible*"—by which, of course, he meant motor—and the posterior "*insensible*"—by which, of course, he meant sensory? Anyhow, could not the statement have been clearer?

Professor Keith also directs attention to the related but collateral case of the fifth nerve. That is a different and more complicated matter, involving many other publications besides those of Bell and of Magendie. Bell's contribution to the advancement of our knowledge of the fifth (and seventh) nerves is contained in the two papers of 1821 and 1822 in the Philosophical Transactions of the Royal Society referred to in the footnote of my letter of March 4th. I do not wish to follow Professor Keith into this complicated matter until the simpler matter of the nerve roots has been disposed of, beyond stating briefly: 1. That anatomically the nature of the fifth pair and its similarity to a spinal nerve were clearly described in anatomical treatises long before 1821, as is indicated by the names applied to it—viz., *portio major quinti paris vel nervus trifacialis et portio minor quinti paris vel nervus masticatorius.* 2. The physiological point that in 1821 Bell attributed to the entire fifth pair both motor and sensory functions, and not, as Professor Keith represents, sensory function to the portio major (trifacialis), motor function to the portio minor (masticatorius).

Dr. Leonard Guthrie's references to Magendie are quite correct, so also is his appreciation of the generous manner in which Magendie met the claim to Bell's priority preferred through the elder Shaw. Magendie, as is evident in the first two volumes of his *Journal de Physiologie*, treated Bell (*J. de P.*, I., 384, and II., 66, 363) with the utmost consideration as a man of science on the same footing as Broughton (I., 120) and Rolando (III., 95) and Brodie (III., 93) and Shaw (II., 77) and Mayo (III., 345) and Christison (III., 274), and whose discoveries, as described by themselves, he translated and published in the *Journal de Physiologie*, and as a matter of fact it is clear that Magendie gave Bell more than his due credit in conceding to him the priority of having divided the separate roots as a physiological operation. The only other mention by Bell of anything resembling a section of nerve roots occurred two years later at p. 29 of "An Exposition of the Natural System of the Nerves of the Human Body" (1824).

So much for Magendie's attitude of mind towards Bell. But as is written at the head of these columns *Audi alteram partem*, let us therefore consider Bell's attitude of mind towards Magendie. Bell's rejoinder to Magendie's claim is given in the second part of his paper on the Nerves of the Orbit in the Philosophical Transactions of the Royal Society for 1823 at pages 302 and 307:—

> Experiments have never been the means of discovery, and a survey of what has been attempted of late years in physiology will prove that the opening of living animals has done more to perpetuate error than to confirm the just views taken from the study of anatomy and natural motions.
>
> Surely it is time that the schools of this kingdom should be distinguished from those of France. Let physiologists of that country borrow from us, and follow up our opinions by experiments (see the experiments of Magendie on the distinction in the roots of the spinal nerves), but let us continue to build that structure which has been commenced in the labours of the Monros and Hunters.

I earmark this passage as conveying Sir Charles Bell's opinion of Magendie.

Magendie replied to these comments in the tenth volume (1830) of his *Journal de Physiologie*, in a footnote prefatory to the translation of Bell's paper on the Nerve of the Face, of May 28th, 1829, as follows:—

> Je me suis toujours fait un devoir de presenter aux lecteurs de ce Journal les travaux anatomiques de M. Ch. Bell. Son esprit investigateur bien qu'un peu spéculatif, sa grande habileté dans l'art de disséquer, et son rare talent pour le dessin, lui assureront toujours une place distinguée parmi les anatomists de notre époque. Pourquoi faut-il que ce savant nuise à ses travaux, se nuise à lui-même, en ne rendant pas à ses émules la justice qui leur est due? Pourquoi conserve-t-il ce patriotisme barbare qui repousse tout ce qui n'est pas du pays? Pourquoi garde-t-il des prétentions à des découvertes qu'il n'a pas faites? Sans doute parce que tel est son caractère, et qu'il n'est pas facile de se changer, quand même on en sentirait le désir. D'ailleurs, ce travers, que notre franchise se permet de blâmer en lui, est peut-être le mobile qui l'excite au travail—et alors voudrions-nous réellement qu'il ne l'eut pas?

I earmark this passage as conveying Magendie's opinion of Sir Charles Bell. I have not attempted to translate it—the language is as clear and fine as is the thought.

The "dispute," if we are to call it so, is somewhat ancient. But so long as the essential facts exist on record it cannot be regarded as closed by a gross injustice, whether to a "countryman" or to a "foreigner." In a matter of such importance as the functional distinction between motor and sensory nerves historical truth is necessary and justice must be done to the "rival claims" of Bell and of Magendie in this respect. And if, as I believe, justice is due to Magendie, it is due to our own self-respect that such justice should be rendered in our own language.

I am, Sir, yours faithfully,

A. D. WALLER.

Physiological Laboratory, University of London, S.W., March 18th, 1911.

[1] "It was necessary to know, in the first place, whether the phenomena exhibited on injuring the separate roots of the spinal nerves corresponded with what was suggested by their anatomy. After delaying long on account of the unpleasant nature of the operation, I opened the spinal canal of a rabbit and cut the posterior roots of the nerves of the lower extremity; the creature crawled, but I was deterred from repeating the experiment by the protracted cruelty of the dissection. I reflected that an experiment would be satisfactory, if done on an animal recently knocked down and insensible; that whilst I experimented on a living animal there might be a trembling or action exerted in the muscles by touching a sensitive nerve, which motion it would be difficult to distinguish from that produced more immediately through the influence of the motor nerves. I therefore struck a rabbit behind the ear so as to deprive it of sensibility by the concussion, and then exposed the spinal marrow. On irritating the posterior roots of the nerve I could perceive no motion consequent on any part of the muscular frame; but on irritating the anterior roots of the nerve, at each touch of the forceps there was a corresponding motion of the muscles to which the nerve was distributed. These experiments satisfied me that the different roots and different columns from whence those roots arose were devoted to distinct offices, and that the notions drawn from the anatomy were correct."

## DEAF CHILDREN.

*To the Editor of* THE LANCET.

SIR,—May I be allowed to supplement the reference in the leading article on the education of deaf children appearing in THE LANCET of March 11th to the school of the Association for the Oral Instruction of the Deaf and Dumb at Fitzroy-square by a short statement as to the association's aims and its present position?

The writer of the article in question rightly points out that as early as the seventeenth century Dr. John Wallis of Oxford taught speech to his deaf pupils. So, too, did his contemporary Dr. William Holder of Bletchington. A century later the renowned Thomas Braidwood opened his private academy in Edinburgh, transferring it in 1783 to Hackney, London. Braidwood's method was founded on that of Wallis, and in its turn formed the basis of that of his nephew, Dr. Joseph Watson, who was the principal of the first English public school for indigent deaf children, founded in 1792 in the Old Kent-road, London. But oralism gradually waned, until in the "sixties" of last century the French system of signs was dominant in all the schools of the country.

Hence arose the association at Fitzroy-square, founded

in 1870, with the object of establishing a pure oral school for deaf children and a training college for teachers of the deaf on the oral method, and by these means of reintroducing into the country generally the practice of the oral instruction of deaf children.

Both the school and the training college have continued their work uninterruptedly down to the present time, mainly through the benevolence of a generous public. It is, however, to the training college I now wish to call attention, as the committee find themselves confronted with a task of exceptional difficulty in their endeavour to develop this side of the association's activities. That the college has been faithfully administered and successfully conducted may perhaps be best indicated in a word by stating that every Fitzroy-square student presented for the professional examination held by the joint examination board for teachers of the deaf, and open to candidates from all parts of the British Isles, has satisfied the requirements of the examiners, and one of them has each year headed the list of successful candidates. The work of the college has, however, been conducted under constant financial strain, and at no time has this strain been more severe than it is at the present moment. The college buildings are now inadequate for their purpose, and, further than this, the committee desire to broaden the basis of instruction given to the students and provide a training which shall not only satisfy the strictly technical requirements of teachers who seek service in certified schools for deaf children, but give them that degree of general culture and professional skill as will enable them to undertake with the fullest measure of competency the very important work to which they intend devoting their lives. *The State gives no grant towards the college expenses;* consequently fees have to be charged and the benevolent public appealed to from time to time.

An appeal is now being made for £3000, sufficient for the time being to enable the committee to carry out their proposals in a modest manner, though not to place the work on a permanent footing, and so far a fund has been collected amounting to about £1800. If the public could but realise the essential importance of an adequate supply of properly trained teachers, capable of giving the deaf children of the country a sound oral education, I feel sure the money would be forthcoming for our purposes. It is not enough that schools shall be opened and children compelled to attend them. They must also be staffed with properly trained teachers, and surely the work of providing the necessary training is one worthy of the most liberal endowment.

Mr. Macleod Yearsley's excellent articles on the education of the deaf child, which have just appeared in your journal, will, I trust, help not only to remove widespread misconceptions of the deaf child's educational capabilities and of his possibilities for useful citizenship, and bring about a better classification of deaf children at school, but help the public to realise how important the work of instructing these afflicted children is, and inferentially how essential it is that there should be a proper supply of competent teachers to undertake their instruction.

I am, Sir, yours faithfully,

G. SIBLEY HAYCOCK.

Fitzroy-square, London, W., March 15th, 1911.

## THE SPHYGMOMANOMETER AND THE SPHYGMOGRAPH IN RELATION TO THE MEASUREMENT OF ARTERIAL BLOOD PRESSURES.

*To the Editor of* THE LANCET.

SIR,—I am indebted to Dr. George Oliver for his generous recognition of my address on "The Sphygmomanometer and the Sphygmograph in Relation to the Measurement of Arterial Blood Pressures," and I am, of course, glad to have the advantage of his support. Doubtless, as he says, the multiplication of the time points of the arterial cycle at which "pressure" may be read will increase the clinical value of the sphygmomanometer, but even when the maximum and minimum can each be estimated with confidence the rapidity, or otherwise, of the movement from one to the other will still be beyond the resources of the instruments at present at our disposal. Since Dr. Oliver's demonstration at the Royal Society of Medicine I have had some experience of the ingenious apparatus he has given us, and so far there does seem to me some presumptive evidence that by the auditory method, leaving on one side the question of the resistance offered by the arterial wall, a measurement of the diastolic pressure may perhaps be effected. At least, in all cases in which I have found the maximum record abnormally high Dr. Oliver's tambour has indicated also a high diastolic reading, with one exception, and that a decidedly impressive one—namely, cases of aortic regurgitation. In these, in my experience, the tambour gives a very low figure as the diastolic record, sometimes, indeed, at, or close to, zero. As in aortic regurgitation the physical conditions are particularly favourable to the fall of the intra-arterial pressure during cardiac diastole to an unusually low level, the fact that in such cases the auditory method announces a very low "diastolic pressure" may reasonably, if confirmed, be quoted in support of the claim that by this method the "diastolic pressure" may be estimated.

Dr. Reginald Pratt (THE LANCET, March 18th, p. 765) raises another issue. He challenges without qualification the whole art of sphygmometry. Now it is no doubt true that the sphygmograph, like other apparatus, may be deliberately manipulated for a particular purpose, or may, in careless or inexperienced hands, yield, within limits, unreliable results. But these possible inaccuracies can be avoided by due attention and practice, and defects due to one or other of them can, for the most part, be detected, not only at the time of record, but even in the completed sphygmogram. For example, I feel sure that anyone accustomed to the use of the sphygmograph will readily recognise that the peculiarities of Dr. Pratt's tracing B depend on some artificial limitation of the free movement of the lever of the sphygmograph. The difference between his tracings A and B is not that one shows "ill-sustained pressure" and the other "well-sustained pressure," but that A has been taken with a sphygmograph so adjusted as to allow free movement of the lever, whereas B is the expression of a checked or limited movement. I do not know under what guidance Dr. Pratt recognises A as answering to the description of a "low tension" or "ill-sustained" pulse, but personally I should not, from a contemplation of the tracing, have come to this conclusion.

I am, Sir, yours faithfully,

Harley-street, W., March 20th, 1911. C. O. HAWTHORNE.

## "606" AND SYPHILIS.

*To the Editor of* THE LANCET.

SIR,—Allow me to make a few remarks in reply to the criticism of my article on "606"[1] by Dr. James McIntosh and Dr. Paul Fildes, published in THE LANCET of March 18th. In the first place, I must object to their accusation of my having cast a slur on the name of the inventor of "606." In my article I expressly stated that, "as its inventor is one who holds a high position as a medical scientist, it is necessary to deal with this preparation on its merits." As to the manner in which this preparation was "boomed," I do not know who was responsible for this, and I am not the only one who has drawn attention to it. In the second place, I beg to state that the views expressed in my article, which Dr. McIntosh and Dr. Fildes say are "unjustified and at variance with the opinions of the vast majority of competent observers," are shared to a greater or less extent by many experienced syphilologists and other members of the profession who are certainly competent. Whether these views are unjustified or not time will show; at any rate, the time appears opportune for a little wholesome criticism. After this preamble, I will pass on to the consideration of some of the statements made by Dr. McIntosh and Dr. Fildes.

1. These authors remark that "on the average, if not invariably, '606' is far superior to mercury in the symptomatic treatment of syphilis"; yet, in a previous paragraph, they state that "'606' has no reference to symptoms—it is purely a parasiticide." How these two statements can be reconciled is not apparent. But if "606" is purely a parasiticide, I should like to ask Dr. McIntosh and Dr. Fildes

[1] THE LANCET, Feb. 25th, 1911.

how they explain the undoubted healing effect of this preparation in cases of malignant syphilis, in the lesions of which, according to Buschke,[2] spirochætes are absent. The explanation given by Buschke is that the action of arsenobenzol is not parasitotropic, as Ehrlich supposed, but organotropic, and that it acts in a similar way to mercury and iodides. This view also applies to the lesions of tertiary syphilis, in which spirochætes are absent or few in number. I may add here that Dr. McIntosh and Dr. Fildes's assumption that, in my statement that treatment by "606" is symptomatic only and "not treatment of the disease itself," I "refer apparently to the spirochæte," is incorrect; the spirochæte is by no means the only factor concerned in syphilis, as Sir Jonathan Hutchinson has well pointed out in the new edition of his book. Dr. Levy-Bing,[3] who has just published the results of six months' experience with intramuscular injections of "606" at the St. Lazare Hospital, Paris, also comes to the conclusion that this preparation only cures the symptoms of syphilis, not the disease itself.

2. Dr. McIntosh and Dr. Fildes consider that "'606,' applied at properly ascertained times, will prevent the onset of symptoms with far less inconvenience and effect upon the general health than mercury." But, so far, there is no evidence that "606" has any action in preventing the onset of symptoms; in fact, according to Levy-Bing, recurrent symptoms are more frequent, and often of greater severity, after treatment by "606" than after mercurial treatment. With regard to the effect of mercury on the general health, so far as my experience goes (and this agrees with that of Sir Jonathan Hutchinson) the general health is generally improved by a course of mercury.

3. Dr. McIntosh and Dr. Fildes are undoubtedly correct in stating that "'606' will probably be used by the unskilled," but that this will be "without danger" is hardly to be believed. Apart from the deaths and other severe accidents following the injection of this preparation, which may in part, I admit, be attributed to faulty technique, there is an increasing amount of evidence to show that "606" has a deleterious effect on the nerves. This neurotropic action has been pointed out by Buschke and Fischer,[4] Finger,[5] Stern,[6] and others, who have reported cases of paralysis of the ocular muscles and affections of the internal ear. Buschke even goes so far as to consider that, in addition to the directly injurious effects of arsenic, "606" may cause deposits of arsenic in the internal organs, which predispose to further manifestations of syphilis. Finger, on account of this neurotropic action of "606," does not consider it indicated for the ordinary treatment of syphilis. "Aus den Gesagten glaube ich zum Schlusse kommen zu sollen, dass das Arsenobenzol sich vorläufig zur Anwendung in der Praxis nicht eignet."

I am, Sir, yours faithfully,

London, N.W., March 18th, 1911. C. F. MARSHALL.

## "TERRIBLE NEWS OF THE PLAGUE."

*To the Editor of* THE LANCET.

SIR,—I have read in this week's issue of THE LANCET a report from St. Petersburg forwarded by your Constantinople correspondent and entitled "Terrible News of the Plague." The news may be terrible, but is not in any way founded on fact. I have but a few days ago returned from Peking, travelling through Manchuria, and when at Mukden met two of the workers from Harbin—namely, Dr. Wu and Dr. J. M. Stenhouse—so that I had ample opportunity of learning about the exact position of affairs.

As has been already reported by your China correspondent, active and effectual antiplague work has been carried on in the Chinese town of Harbin (Fuchiatien) for the last two months or more by Dr. Wu and other Chinese doctors, assisted by Dr. J. G. Gibb, Dr. W. H. G. Aspland, and Dr. Stenhouse, who are colleagues of my own at the Union Medical College, Peking. At the beginning of February the death-rate in Fuchiatien was as high as 150 a day, but since then conditions have steadily improved, so that at the time of my leaving (Feb. 28th) it had fallen as low as only two a day.

When these doctors first went up to Harbin the work was much obstructed by some of the local officials. Subsequently, by orders from Peking, these men were degraded, and thereafter the governor of the province and other officials did everything in their power to help the medical men in charge. The bodies of the dead were burnt to the number of about 4000, and have not been left lying about the streets as your correspondent describes. A large and efficient staff of sanitary police has been employed, while house-to-house inspection, rehousing, and isolation work have been steadily carried on, with the very satisfactory results described above. Naturally, the distress and suffering have been very great, but more from the intense cold and entire dislocation of trade than even from the plague itself. It is these conditions which have made the work so extremely difficult. Part of the Chinese Town had to be burnt down and large numbers of people had to be temporarily housed, whilst many more, as could only be expected and unfortunately could not be prevented, scattered to other parts of the country. In consequence, the town is in some measure deserted at the present time.

It is a pity, however, that these reports sent from St. Petersburg should be so inaccurate and misleading, as they bring discredit on the excellent work which has been done and which has been fully acknowledged by the Russian medical authorities. Similar reports have previously been circulated through St. Petersburg, an example occurring only the other day, when it was stated that 18 out of 19 Chinese doctors had died of plague at Kuanchengtze. The facts subsequently telegraphed by Dr. Young, also of the Union Medical College, Peking, were as follows: "Hospital under native doctors closed because four nurses, two doctors died. No precautions observed." This probably refers to a hospital manned by untrained Chinese doctors, many of whom have served bravely and faithfully in spite of their insufficiency of medical knowledge.

Before leaving Peking at the end of February I had abundant opportunity of seeing and hearing about the work done to prevent the spread of the plague. In consequence of ignorance of the danger and of the grievous insufficiency of trained medical men, the work was begun late and carried out under many difficulties; but, speaking generally, the necessary measures were widely and gladly adopted and the officials heartily coöperated in the work. It is to be hoped, however, that the present circumstances will help to awaken the Chinese Government and people to the intense need of national public health work, and of efficiently trained men to carry this out. I am, Sir, yours faithfully,

H. V. WENHAM.

St. Bartholomew's Hospital, London, E.C., March 18th, 1911.

## OPEN WINDOWS IN THE TREATMENT OF CERTAIN DISEASES.

*To the Editor of* THE LANCET.

SIR,—About three years ago I called attention to certain facts which seemed to indicate that the prevalence of adenoids among children resulted from making them sleep during cold and damp weather with the windows open. Among other things I then noted, of 49 children who had been brought up strictly on the open-window system 22 had been operated on for adenoids, while in 69 children who had been brought up on the shut-window system only two cases of adenoids were observed. Further investigation seems to me to have confirmed the supposition that cold and damp air predisposes to, or is in some way generally associated with, the causation of adenoids, and I understand that some laryngologists now admit my contention. Indeed, one told me that he was now "absolutely convinced," and another that he had been "completely converted."

Further considerations have led me to suspect the wisdom of treating certain diseases on the open-window system. That cold and damp weather has a very marked effect on the prevalence and severity of certain diseases is conclusively shown by the frequency of these diseases in winter and the mortality returns at particular periods of the year associated with cold and damp weather. On the other hand, as far as I have been able to learn, there are no satisfactory statistics which indicate that the open-window treatment of influenza, common colds, measles, and bronchitis is attended with more beneficent results than the shut-window system. The

[2] Berliner Klinische Wochenschrift, No. 1, 1911.
[3] Annales des Maladies Vénériennes, March, 1911.
[4] Loc. cit.
[5] Wiener Klinische Wochenschrift, Nov. 24th, 1910.
[6] Deutsche Medizinische Wochenschrift, Jan. 5th, 1911.

prevalence of such a deadly disease as pneumonia so frequently following some of the diseases referred to indicates that we should at least have some very definite statistical evidence as to the effect of the open-window system in the treatment of these diseases during cold and damp weather. Of course, I am not suggesting that efficient ventilation by night as well as by day is not desirable, nor that there may not be more chance of infection for others in the same room, if the windows are kept closed, nor even that in good health it is not desirable to become hardened as far as possible to the ordinary climatic variations which are likely to have to be encountered. My point is, that when any of the diseases mentioned is present that is not the time, in the majority of cases at least, for anything but sheltering the patient from certain climatic vicissitudes. Open windows are particularly objectionable in all probability when a child is ill and has hitherto not been habituated to the pouring in of cold and damp air through the open window. It would appear, however, that one of the first things which may be done, immediately a nurse for a sick child has been procured, is to open, and keep open, the windows day and night regardless of the nature of the disease, the kind of weather or the conditions to which the child may hitherto have been accustomed. I am, Sir, yours faithfully,

Wimpole-street, W., March 7th, 1911. J. SIM WALLACE.

## EYE-STRAIN IN RELATION TO GENERAL HEALTH.

*To the Editor of* THE LANCET.

SIR,—It is not easy to grasp the point of Mr. Kenneth Campbell's letter in THE LANCET of March 18th. I take it he admits the possibility of local cerebral congestion, though contradicted by experimental research, and denies that such a factor could cause the symptoms usually attributed to "eye-strain" "in view of the fact that the brain is insensitive." Headache is one of the commonest results of so-called "eye-strain," it is also the result of many other conditions—toxic, traumatic, &c. If then the sensitiveness of the brain has anything to do with the subject I would be glad to hear in what way. I am, Sir, yours faithfully,

Manchester, March 20th, 1911. A. A. BRADBURNE.

## EXPERIMENTS IN SEWER VENTILATION AT LEICESTER.

*To the Editor of* THE LANCET.

SIR,—The report of your Sanitary Commissioner in THE LANCET of March 4th, p. 618, points once more to the efforts of THE LANCET in continually making publicly known anything likely to assist in improving the health and comfort of the people all over the world in general and of the United Kingdom in particular. The truly scientific system of sewer and drain ventilation of Shones cannot be questioned by any practical man, and it is a great pity it is not more largely adopted throughout the kingdom, especially in so-called health towns, which should be compelled by Act of Parliament to have every drain and sewer fitted or a similarly effectual system.

Your Commissioner in his very thorough report calls attention to the difficulties encountered at Leicester after the system had been put in operation, especially when it was found that air was drawn into the drains and sewer through unsound and leaky joints and not through the down-cast ventilation pipes. To my mind, this is evidence of one of the valuable points of the system, because it exhibits a serious weakness that under the present system of sewer or drain ventilation would never be discovered, especially as now there are methods of making drain and pipe sewer joints sound (air and water tight) without greatly disturbing the surface ground under which drains and sewers are laid at a reasonable cost. The very great health advantage would be added to the district of having sound sewers and drains scientifically ventilated, with the advantage, as your Commissioner also points out, of having all foul smells drafted away from the town and district where they can be filtered, cremated, or destroyed. Another great advantage also accrues in that the sewage is continually being aerated, and in places where sewers have slight gradients the flow would be doubtlessly accelerated. Your Commissioner mentions cost of electric current at 3*d.* per unit, but now in most places where an efficient installation of electricity is obtained the cost for power should not be more than 1½*d.* per unit, and to avoid another risk also mentioned—viz., failure of ventilation by breakdown of motor working the fans—the motors and fans should be in duplicate.

As in my experience there are very few places where drains and sewers are sound, the value is seen of adopting some such system of sewer ventilation so nobly tried by the advanced town of Leicester, and so ably explained by your Sanitary Commissioner, and the wide publication of your report should tempt some of our good philanthropists who have the good health of the nation one of their objects.

I am, Sir, yours faithfully,

Ebury-street, London, S.W., March 8th, 1911. D. T. BOSTEL.

## A DISCLAIMER.

*To the Editor of* THE LANCET.

SIR,—Mr. Dixon, a Christian Scientist, lately said in the *Saturday Review* that I "declared openly, a few months ago, that there is such a mania for the removal of the appendix." Let me say that I never said anything of the kind, nor wrote it, anywhere. Mr. Dixon is attributing to me what somebody else may have said.—I am, Sir, yours faithfully,

Ladbroke-square, W., March 21st, 1911. STEPHEN PAGET.

## MUSCULAR SPASM IN CARIES OF THE SPINE.

*To the Editor of* THE LANCET.

SIR,—While being naturally gratified at the appreciation of my work, which so well-known an authority on spinal curvatures as Mr. Roth has been kind enough to express, I must confess some surprise at his protest against my suggestion that muscular spasm is a factor of importance in the production of deformity in spinal caries.

Mr. Roth's assertion that I have assumed the action of a whole group of muscles which do not exist is unwarranted; his appeal to you to admit that such muscles exist only in my imagination is almost pathetic; while his sneer at an eminent orthopædic surgeon, whose views may not coincide with his own, is undignified. Mr. Roth has not appreciated the fact that an anterior spinal muscle is by no means synonymous with a muscle anterior to the spine. In the paper he refers to, which you honoured me by printing in the columns of THE LANCET, I was dealing essentially with the mechanical treatment of spinal caries during recumbency. I indeed prefaced my description of the apparatus I employ by a short allusion to the factors which produce deformity, and emphasised the influence of muscular spasm. That it is a factor in the production of deformity of extreme importance I am convinced, but that its action is very complex, I think, cannot be doubted. I hope indeed later to be able to publish a separate paper on this subject, but to have dealt with it at length in the original paper was an impossibility.

Mr. Roth has deigned to criticise my remarks somewhat hastily and without due consideration. If he will dispassionately consider the factors which produce deformity in spinal caries in any particular case, he should, in the light of the suggestion I have made as to the importance of muscular spasm, soon grasp the importance of the action of the anterior spinal muscles—i.e., the anterior of the muscles investing the spine—which act to the greatest mechanical advantage in the dorsal region, and not, as he conceives they should, in the cervical or lumbar. Mr. Roth has betrayed a lack of comprehension of muscular action about the spine. Perhaps his kindly hint that I should examine the cadaver might be amicably reciprocated by me. I did not venture to advance my views until I had anticipated his advice and supplemented the information I thus gained by extensive clinical observation.

In any case, even if Mr. Roth is unable to appreciate the effects of muscular spasm in spinal caries, yet still he may care to adopt the mechanical methods I have advocated, methods which are the outcome of a study of muscular spasm in this condition. In that case I can promise him with confidence that the cases of spinal caries under his care will not become more deformed, that deformity which has not commenced will not appear, and that that portion of deformity which may be present which is due to existing muscular spasm may be safely and certainly corrected.

I am, Sir, yours faithfully,

Alton, Hants, March 20th, 1911. H. J. GAUVAIN.

# THE CHOLERA EPIDEMIC.

(BY THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

*Cholera in Russia.*

CHOLERA still lingers in Russia, as shown by the following returns (in continuation of the figures published in my last letter in THE LANCET of Feb. 11th, p. 395):—

| | | | | | | |
|---|---|---|---|---|---|---|
| Week ending Nov. | 20th | ..... | 30 | cases, | 16 | deaths. |
| ,, ,, | ,, 27th | ..... | 34 | ,, | 18 | ,, |
| ,, ,, | Dec. 4th | ..... | 13 | ,, | 9 | ,, |
| ,, ,, | ,, 11th | ..... | 37 | ,, | 18 | ,, |
| ,, ,, | ,, 18th | ..... | 14 | ,, | 5 | ,, |
| ,, ,, | ,, 25th | ..... | 2 | ,, | 3 | ,, |

The above are "corrected" figures; the following are "uncorrected":—

| | | | | | | |
|---|---|---|---|---|---|---|
| Week ending Jan. | 1st | ..... | 4 | cases, | 1 | death. |
| ,, ,, | ,, 8th | ..... | 2 | ,, | 4 | ,, |
| ,, ,, | ,, 15th | ..... | 9 | ,, | 6 | ,, |
| ,, ,, | ,, 22nd | ..... | 2 | ,, | 1 | ,, |

The cases and deaths in the bulletins for Jan. 1st and 8th all occurred in the Ekaterinoslav government, those in the bulletin for Jan. 15th in the governments of Podolia and Kief, and those in the bulletin for Jan. 22nd in the government of Podolia. (All the above dates are according to the Old Style.)

*Cholera in Austria.*

On Dec. 10th the Austrian Minister of the Interior declared officially that no case of cholera had occurred on Austrian soil since Nov. 7th, and that from the beginning of the outbreak on August 23rd there had been only 15 cases with 5 deaths. The last case was that of a major in the army, who arrived at Graz on Nov. 5th and was apparently already sickening with an attack of cholera; he had come from Pancsova, in the county of Torontal, which had already been declared an infected district.

*Cholera in Hungary.*

On Dec. 30th it was officially stated that no fresh case of cholera had occurred in any part of Hungary—Croatia and Slavonia included—for five days, and the whole country was declared "clean." The following additional figures have been received for the outbreak in Croatia and Slavonia:—Between Nov. 5th and 12th there were 9 cases and 8 deaths, occurring in six different places, situated in five different counties; between Nov. 12th and 19th there were 11 cases and 4 deaths in six places, in four different counties; and between Nov. 19th and 26th there were 4 cases and 2 deaths in four places. All these cases were confirmed bacteriologically. Between Nov. 26th and Dec. 4th no further cases occurred; but between the 4th and 10th 2 cases, both fatal, occurred in the county of Srien, and between the 10th and 17th 1 case in that of Agram.

*Cholera in Italy.*

The latest returns from Italy are as follows:—In the week ending Dec. 14th 38 cases and 11 deaths; of these, 3 cases and 1 death occurred in the province of Aquila, 1 case in that of Caltanisetta, 9 cases and 4 deaths in that of Caserta, 6 cases and 1 death in that of Lecce, 9 cases and 2 deaths in that of Palermo (including 7 cases and 1 death in the Palermo lunatic asylum), 3 cases and 3 deaths in that of Rome, and 7 cases in that of Salerno. In the week ending Dec. 21st there were 18 cases and 2 deaths, distributed as follows:—1 case and 1 death in the province of Caltanisetta, 4 cases in that of Caserta, 9 cases in that of Lecce, 3 cases and 1 death in that of Palermo (all in the asylum above alluded to), and 1 case in that of Salerno. No detailed returns have been received here since the last-named date, but it is declared officially that since Jan. 31st no further case of cholera has occurred on Italian territory.

*Cholera in Constantinople and Turkey in Europe.*

The cholera outbreak in this city came to an end early in January. In the week ending Jan. 2nd there had been 62 cases and 46 deaths; in that ending Jan. 9th the figures fell to 17 cases and 20 deaths; and between the 10th and 13th 10 more cases and 8 deaths were registered. The last new case occurred on the 11th, and ten days later Constantinople was declared free. The totals since the beginning of the epidemic on Sept. 13th were placed at 1318 cases and 793 deaths, among the civil population. Since the middle of January remarkably severe weather has been prevalent in Constantinople and neighbourhood. In Salonica no cases have been reported since Dec. 31st, and the whole of European Turkey seems to be now free from cholera.

*Cholera in Asiatic Turkey and among Returning Pilgrims.*

The following have been the recent weekly returns from Smyrna:—

| | | | | | | |
|---|---|---|---|---|---|---|
| Week ending Jan. | 1st | ..... | 12 | cases, | 8 | deaths. |
| ,, ,, | ,, 8th | ..... | 36 | ,, | 20 | ,, |
| ,, ,, | ,, 15th | ..... | 38 | ,, | 27 | ,, |
| ,, ,, | ,, 22nd | ..... | 86 | ,, | 51 | ,, |
| ,, ,, | ,, 29th | ..... | 69 | ,, | 32 | ,, |
| ,, ,, | Feb. 5th | ..... | 15 | ,, | 11 | ,, |
| ,, ,, | ,, 12th | ..... | 5 | ,, | 3 | ,, |

The last case here occurred on the 7th, and Smyrna has now been declared cholera-free. In all 341 cases and 213 deaths have been recorded in the town. Recently a few cases of suspected cholera have occurred in the neighbourhood of Broussa, and in that of Zunguldak on the Black Sea. Otherwise the whole of Asia Minor appears to be now free from the disease. The same statement may be made in regard to the Bagdad vilayet; 5 cases and 5 deaths occurred here (at Kerbela, one of the Shiah holy cities) on Jan. 1st and 2nd, and none have been reported since. The outbreak of cholera among the returning pilgrims, the beginning of which was reported in my last letter, has caused a considerable, but not excessively high, mortality. In Mecca the following cases and deaths have been recorded:—

| | | | | | | |
|---|---|---|---|---|---|---|
| Between Dec. 26th and Jan. 15th | ..... | 119 | cases, | 106 | deaths. |
| ,, Jan. 16th ,, | ,, 22nd | ..... | 24 | ,, | 26 | ,, |
| ,, ,, 23rd ,, | ,, 28th | ..... | 10 | ,, | 10 | ,, |

Since the last-named date Mecca appears to have been free from the disease. The totals here are put at 153 cases with 142 deaths. These figures are in all probability below the truth. In Jeddah the disease was first seen about Jan. 10th; the first cases occurred among the troops. The outbreak in this port seems to have been limited to about a score of cases, and on Feb. 9th it was telegraphed that no further cholera bulletins would be issued, the outbreak appearing to be at an end. From Yanbo only irregular and imperfect reports have been received; on Jan. 8th it was reported that 7 cases and 2 deaths had occurred there; and on Jan. 13th the totals were said to be 24 cases and 21 deaths. No further news has been received from Yanbo. An outbreak of cholera, in regard to which it has proved difficult to obtain exact information, has occurred in the Yemen, in the neighbourhood of Hodeidah. The first cases were seen in the village of Badjil, 25 miles to the north-east of Hodeidah; between Jan. 9th and 16th 48 cases of cholera and 37 deaths were recorded here; two fatal cases were also seen at Zeidieh, a village to the north. Between the 16th and 21st 10 further cases, with 9 deaths, occurred at Badjil. On the 21st it was reported that cholera, "confirmed bacteriologically," was prevalent among the troops in Hodeidah, causing many cases and deaths; that 3 cases and 2 deaths had occurred among the native population; and that it was reported "unofficially" that cholera existed among the troops at Menaha. Three cases of the disease occurred in the Camaran lazaret, among pilgrims returning to the Yemen and carried on board the s.s. *Budrie;* the first case was isolated on Jan. 8th, the second on the 9th, and the third on the 17th. Vice-consular reports from Hodeidah also state that cholera had, according to "unofficial" reports, broken out among recruits on a transport steamer, the s.s. *Saiyar*, and that between Jan. 17th and 19th 50 cases of the disease and 18 deaths had occurred among them. Large numbers of troops are still being poured into the Yemen, where the bulk of the Arab tribes are in revolt, and it is generally believed that both the Turkish army and the Arabs are suffering from a more or less severe outbreak of cholera; but, as already stated, it is most difficult to learn the true facts. As was anticipated, the infection was carried from Mecca to Medina by the caravans of returning pilgrims. Apparently the first infected group arrived at Medina on Jan. 4th; it had had 5 cases and 4 deaths from cholera. Succeeding caravans arrived in the same condition; they reported that the disease had appeared

among them at Rabigh (or Rabouk)—the important point on the most westerly of the three roads from Mecca to Medina, and the spot where it is generally thought a new port will some day be made, destined to replace Jeddah, and perhaps to be the terminus of the railway between Mecca and the coast. On the 10th as many as 14,000 pilgrims arrived from Mecca in the day, and 51 cases of cholera with 25 deaths were recorded among them. The disease also prevailed among the inhabitants of the town, and a score or so of cases occurred daily for some time. By Jan. 27th 400 cases and 510 deaths had been registered. It may be noted that infected caravans continued to arrive from Mecca, both by the most westerly and the most easterly roads; and that among some 7000 pilgrims arriving in Medina from Yanbo no case of cholera occurred, showing that in all probability the outbreak at Yanbo has not been a very severe one. The latest returns from Medina show that only 3 or 4 cases are occurring there daily.

*Cholera on the Hedjaz Railway.*

The first pilgrim train left Medina for the north on Jan. 5th, with 429 pilgrims. Groups of from 300 to 500 pilgrims continued steadily to arrive at the Tebuk lazaret once or twice a day. Among the first groups to reach the lazaret three suspected cholera cases occurred, and these were subsequently confirmed bacteriologically. Since then apparently no cases of the disease have been seen there. It has to be remembered that the Tebuk lazaret is still an improvised one, though it already possesses most of the essentials of such an institution. Some alarm was created recently by the report that cholera had occurred among pilgrims arriving at Damascus, after having done their quarantine and other measures at Tebuk; but fortunately this report appears to have been quite unfounded, and so far as is known no case of cholera has yet occurred north of the lazaret of Tebuk. Some suspicious cases have been more than once reported as occurring in the trains between Tebuk and Damascus, but none of these have been confirmed; indeed, they have all been officially declared not to have been cases of cholera. The pilgrims are subjected to a final medical visit on their arrival at the Kadem terminus of the railway in Damascus. The movement northwards of pilgrims still continues, and so long as it continues there must always be a danger of cholera appearing among them at Damascus or elsewhere, in spite of the measures executed at Tebuk.

*Cholera in Persia.*

Cholera appears to have lingered in many parts of Persia throughout the month of December. A telegram from Teheran, dated Jan. 7th, stated that cholera "existed positively" at the end of December in the towns of Hamadan, Kerman, and Mohammera, and that, "according to all appearances," the provinces of Ghilan, Kaskin (? Kazvin), Khorassan and Kaian (?) were not yet completely free from the disease. On Jan. 22nd another telegram stated that no case had occurred in any part of Persia since the 20th.

Constantinople, Feb. 17th.

## THE DANGEROUS WATER-SUPPLY OF CHERBOURG.

(FROM A CORRESPONDENT.)

CHERBOURG, the French naval port, lies at the mouth of the river Divette, and in the lower part of its basin. It is a town of some 43,000 inhabitants, of whom 16,000 are employed in the arsenal or are in the army or navy. It has a sinister reputation as the town in France, Toulon only excepted, the most seriously and constantly infected with enteric fever. The enteric death-rate of Toulon in the ten years 1897 to 1906 is stated at 0·86 per 1000 living, that of Cherbourg at 0·71 per 1000, while Paris only lost 0·15 per 1000 of her population by this disease. These figures are taken from a detailed account of an epidemic in Cherbourg in 1909, which appeared in December and January in the *Archives de Médecine Navale*, written by Dr. L. E. F. Brunet, Médecin de première classe. His tables show that enteric fever is every year present in Cherbourg, but that notable epidemics occurred amongst the Government employees of all kinds (the people who are treated in the naval hospital) in 1889, 1898 and 1899, and in 1909, and that every single epidemic was ascribed to the bad water-supply, which still remains ever the same. I think that readers of THE LANCET may find the story instructive.

Cherbourg gets its water-supply, it appears, mainly from the Divette, but also from brooks, from certain springs, and from wells. People who live just above the town use the Divette water exactly as they pump it up; the navy has a station a mile above the town where they take water from it—water they pipe to the arsenal for boilers, washing, and the like; just below this is the town's intake—the water is allowed to settle and is filtered before distribution as drinking water. Owing to the geological conditions of the district the springs cannot be secured against pollution, but from them the barracks are supplied, water intended for drinking being all sterilised before issue. Taps—"washing water only"—are frequent throughout the barracks and the arsenal, and men will make mistakes. Only one barrack has a supply in which bacillus coli has never yet been found, and its men got off very lightly in the last epidemic. The small houses of the district, cafés, public-houses, lodgings affected by soldiers and sailors generally get their water from wells which are all suspected; many have been closed as they contained too many of the bacillus coli. As to conservancy, there is no general system of water carriage, but there are a great number of leaking cesspools and many pail-closets. The nightsoil is spread on the fields in the valley of the Divette above the town or around the brooks mentioned, and it has been for long believed that the water becomes charged habitually with the bacillus coli and from time to time with the bacillus typhosus.

Medical men have for years been preaching about the terrible risk and the constant damage to the health of the garrison and of the townspeople involved in this lack of protection of the water-supply, but nothing thorough has been done. In 1889 there were 394 cases of enteric fever in the naval hospital with 75 deaths; the director of the naval board of health pointed out that it was not filters only, but a pure water-supply that was required, adding that it was the duty of the board of health to emphasise the dangers, but the duty of the superior authorities to remove them. A military medical officer, too, at the same time insisted on the need for pure water, but only Chamberland filters were installed. As far back as 1898 and 1899, 665 cases were treated in the naval hospital with 189 deaths, and Director Rouvier wrote that the navy must have good water for itself, and to shield its men from infection must require the town, too, to get a good supply. Yet the source of supply remains as before, only the army and navy sterilise some water for their men, and the town seems to purify its water in some degree by sedimentation and filtration. That is all that has been done. The dangers are so well known to the inhabitants that they avoid drinking the water as far as possible; some very scrupulously filter all they use, others buy the water of a particular spring, reputed safe, in bottles for drinking and personal washing; others, again, drink nothing but cider.

Cherbourg is always liable to an outburst of enteric fever, and some 30 deaths due to the disease occur there every year. The story of the epidemic of 1909 is a typically instructive one. On Jan. 7th a case of illness was received in the Naval Hospital and gave on the 11th a positive Widal reaction. Eight cases in all were received during January; they were from the arsenal. On Feb. 6th there came four men all from different parts of the district, showing that the whole of the water-supplies were infected, 65 were received in the first fortnight of February, 92 in the next fortnight, 59 and 69 in the successive fortnights of March, by which time the epidemic was nearly over, only 16 cases appeared in April, two in May, and six in the next three months. There were 317 cases altogether, of whom 58 died. It appears that the only body of men who conspicuously suffered little were the two regiments whose barracks rejoice in the water-supply free from bacillus coli (13 cases and two deaths between the two regiments). As soon as the existence of the epidemic was recognised all the emergency measures that could be taken to stop it were suggested by the doctors and at once put in orders. They could not be expected to make any difference for a fortnight or three weeks, and in the meantime everybody came to show sympathy with the sick. The Minister of Marine came, the Under-Secretary for War, many high functionaries, the Committee

to 14·9 per 1000, rose again to 15·4 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these towns averaged 15·9 per 1000, and the mean recorded rate in London during the same period was also equal to 15·9. The annual death-rates during last week ranged from 4·9 in Handsworth, 5·3 in King's Norton, 7·6 in Wallasey, and 8·3 in Northampton, to 21·9 in Sheffield, 22·5 in Middlesbrough, 22·7 in Plymouth, and 23·3 in Coventry. The 5052 deaths from all causes in the 77 towns showed an increase of 141 upon the number returned in the previous week, and included 695 which were referred to the principal epidemic diseases, against numbers increasing from 477 to 702 in the five preceding weeks; of these 695 deaths, 460 resulted from measles, 109 from whooping-cough, 44 from diphtheria, 42 from infantile diarrhœa, 22 from scarlet fever, 17 from enteric fever, and 1 from small-pox. The annual death-rate in the 77 towns from these epidemic diseases averaged 2·1 per 1000. The fatal cases of measles, which had steadily increased from 160 to 474 in the first ten weeks of the current quarter, declined last week to 460; the highest annual death-rates from this disease among the 77 towns last week were 3·8 in Coventry, 4·1 in Plymouth, 5·4 in Devonport, 5·6 in Wigan, and 8·0 in Sheffield. The deaths from whooping-cough, which had been 108 and 80 in the two previous weeks, rose again to 109 last week; they caused the highest rates last week, 1·7 in Wigan, 1·8 in Aston Manor, and 1·9 in Coventry and in West Hartlepool. The 44 deaths from diphtheria showed a further decline of 12 from the numbers in recent weeks; they included 13 in London and its suburban districts, 4 in Leeds, and 3 both in Bristol and in Sheffield. The 42 deaths of infants under 2 years of age attributed to diarrhœa, showed a further decline from the numbers in recent weeks, and were fewer than in any previous week of this year. The 22 fatal cases of scarlet fever also showed a further decline from the numbers in recent weeks; 4 were recorded in London and 2 each in Liverpool, Stoke-on-Trent, and Bury. The deaths referred to enteric fever, which had been 15 and 13 in the two previous weeks, rose to 17 last week, of which 3 occurred in Manchester, 3 in Leeds, and 2 both in London and in Portsmouth. The fatal case of small-pox occurred in London, and was admitted to hospital from Poplar. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had declined in the four preceding weeks from 1276 to 1166, had further fallen to 1121 on Saturday last; 146 new cases of this disease were admitted to these hospitals during last week, against 138, 129, and 120 in the three preceding weeks. These metropolitan hospitals also contained on Saturday last 920 cases of diphtheria, 822 of measles, 256 of whooping-cough, 32 of enteric fever, and 38 of small-pox. The 1419 deaths from all causes in London last week, an increase of 28 upon the number in the previous week, included 284 which were referred to diseases of the respiratory system, against numbers ranging from 421 to 318 in the four preceding weeks; 7 deaths were also referred to influenza. In the 77 towns 156 deaths from different forms of violence were registered during last week, against 173, 153, and 142 in the three preceding weeks; and 377 inquest cases were recorded. The causes of 46, or 0·9 per cent., of the deaths registered during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, Salford, and in 47 other smaller towns; the 46 uncertified causes of death in the 77 towns last week included 9 in Birmingham, 4 in Stoke-on-Trent, and 3 each in Liverpool, Sheffield, and Preston.

### HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 907 births and 617 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 19·8 to 15·9 per 1000, rose again to 16·8 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these towns averaged 17·0 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 English towns. The annual death-rate last week in the eight Scotch towns ranged from 14·3 and 14·6 in Leith and Aberdeen to 20·1 in Dundee and 20·8 in Paisley. The 617 deaths from all causes in the eight towns last week showed an increase of 34 upon the number returned in the previous week, and included 66 which were referred to the principal epidemic diseases, against 76, 57, and 60 in the three preceding weeks; these 66 deaths were equal to an annual rate of 1·8 per 1000, which was 0·3 below the rate from the same diseases in the 77 English towns; the highest rates from these diseases in the Scotch towns last week were 3·3 in Paisley and 4·2 in Leith. Of these 66 deaths from epidemic diseases last week in the eight towns 36 resulted from whooping-cough, 11 from diarrhœa, 9 from diphtheria, 5 from scarlet fever, 4 from measles, and 1 from enteric fever, but not one from small-pox. The fatal cases of whooping-cough, which had been 32 and 36 in the two previous weeks, were again 36 last week, and included 15 in Glasgow, 5 each in Edinburgh, Paisley, and Leith, and 4 in Dundee. The 11 deaths attributed to diarrhœa (of which 10 were of infants under two years of age), exceeded the number in the previous week by 4, and included 5 both in Glasgow and in Dundee. The deaths referred to diphtheria, which had been 5 in each of the two previous weeks, rose to 9 last week; 4 occurred in Edinburgh and 3 in Glasgow. Of the 5 fatal cases of scarlet fever, 2 were recorded in Glasgow; and the 4 deaths from measles included 2 both in Glasgow and in Edinburgh. The death resulting from enteric fever was registered in Leith. The deaths referred to diseases of the respiratory system in the eight towns, which had declined in the four preceding weeks from 181 to 108, were 109 in the week under notice. The 18 deaths attributed to different forms of violence were within 2 of the number in the previous week; and 180, or 29 per cent., of the 617 deaths from all causes occurred in public institutions. The causes of 21, or 3·4 per cent., of the deaths registered in the eight towns during the week were not certified or not stated; in the 77 English towns last week the proportion of uncertified causes of death did not exceed 0·9 per cent.

### HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,163,596 persons, 612 births and 389 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 24·1 to 19·3 per 1000, further fell to 17·4 in the week under notice. During the first 11 weeks of the current quarter the annual death-rate in these 22 towns averaged 20·4 per 1000; the rate during the same period did not exceed 15·9 in the 77 English towns, and 17·0 in the eight Scotch towns. The annual death-rate during last week was equal to 20·8 in Dublin, 15·4 in Belfast, 16·4 in Cork, 10·7 in Londonderry, 15·0 in Limerick, and 15·6 in Waterford; in the 16 smallest of the Irish towns the mean annual death-rate last week was equal to 17·2 per 1000. The 389 deaths from all causes in the 22 towns last week showed a further decline of 42 from the numbers returned in recent weeks and included 21 which were referred to the principal epidemic diseases, against 41, 25, and 26 in the three preceding weeks; these 21 deaths were equal to an annual rate of 0·9 per 1000, which was 1·2 below the mean rate from the same diseases in the 77 English towns. Of these 21 deaths in the Irish towns from the principal epidemic diseases, 8 resulted from measles, 6 from diarrhœa, 5 from whooping-cough, and 1 each from scarlet fever and enteric fever, but not one either from small-pox or diphtheria. The 8 fatal cases of measles, of which 7 occurred in Dublin and 1 in Drogheda, showed an increase of one on the number in the previous week. The 5 deaths from whooping-cough showed a further considerable decline from the numbers in recent weeks; they included 4 in Dublin and 1 in Belfast. Five of the 6 deaths attributed to diarrhœa occurred in Dublin. The death referred to enteric fever was recorded in Dublin, and the fatal case of scarlet fever occurred in Belfast. The deaths in the 22 towns referred to diseases of the respiratory system, which had declined in the five preceding weeks from 141 to 100, further fell last week to 90. Of the 389 deaths from all causes last week, 105, or 27 per cent., were recorded in public institutions. The causes of 13, or 3·3 per cent.,

## VITAL STATISTICS IN LONDON DURING FEBRUARY, 1911.

(*Specially compiled for* THE LANCET.)

| CITIES AND BOROUGHS. | Estimated population in the middle of 1911. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES ‡ | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cerebro-spinal meningitis. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.* | Whooping-cough. | Enteric fever. | Diarrhœa and enteritis (under 2 years). | Total. | Annual rate per 1000 persons living. | | | |
| LONDON | 4,912,054 | 28 | 597 | 562 | — | 53 | 1 | 21 | 272 | 10 | 1544 | 4·1 | — | 416 | 14 | 54 | 136 | 7 | 70 | 697 | 1·8 | 6289 | 17·6 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington | 154,072 | — | 15 | 11 | — | 5 | — | 1 | 8 | 1 | 41 | 3·5 | — | 1 | — | 1 | 7 | — | 2 | 11 | 0·9 | 171 | 15·5 |
| Kensington | 185,607 | — | 19 | 25 | — | — | — | — | 10 | — | 54 | 3·8 | — | 23 | — | 5 | 11 | — | 3 | 42 | 2·9 | 222 | 16·8 |
| Hammersmith | 129,140 | — | 11 | 17 | — | — | — | 1 | 5 | — | 34 | 3·4 | — | 5 | — | 2 | 5 | — | 6 | 18 | 1·8 | 184 | 19·4 |
| Fulham | 186,190 | — | 21 | 31 | — | 1 | — | 1 | 12 | 1 | 67 | 4·7 | — | 6 | — | 1 | 6 | — | 3 | 16 | 1·1 | 202 | 14·8 |
| Chelsea | 75,673 | — | 12 | 8 | — | — | — | — | 1 | — | 21 | 3·6 | — | 4 | — | 1 | 1 | — | — | 6 | 1·0 | 98 | 17·5 |
| City of Westminster | 165,593 | 1 | 26 | 9 | — | 1 | — | 1 | 2 | 1 | 41 | 3·2 | — | 2 | 1 | 1 | — | 1 | 2 | 7 | 0·6 | 188 | 16·6 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Marylebone | 124,373 | — | 7 | 7 | — | 2 | — | — | 6 | — | 22 | 2·3 | — | 17 | — | — | 3 | 1 | 2 | 23 | 2·4 | 190 | 21·2 |
| Hampstead | 97,288 | — | 5 | 15 | — | 3 | — | — | 6 | — | 29 | 3·9 | — | 2 | — | — | 1 | 1 | 1 | 5 | 0·7 | 67 | 10·2 |
| St. Pancras | 238,187 | — | 17 | 29 | — | 3 | — | 1 | 9 | 1 | 60 | 3·3 | — | 23 | — | 1 | 4 | — | 2 | 30 | 1·6 | 345 | 19·8 |
| Islington | 355,550 | — | 46 | 34 | — | 7 | — | — | 9 | — | 96 | 3·5 | — | 24 | 2 | 3 | 4 | 1 | 4 | 38 | 1·4 | 451 | 17·1 |
| Stoke Newington | 55,260 | — | 6 | 6 | — | — | — | — | 2 | — | 14 | 3·3 | — | 4 | — | — | 3 | — | — | 7 | 1·7 | 53 | 13·0 |
| Hackney | 242,388 | — | 30 | 17 | — | 1 | — | — | 21 | — | 69 | 3·7 | — | 21 | — | 3 | 12 | — | 1 | 37 | 2·0 | 295 | 16·6 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | |
| Holborn | 52,484 | — | 2 | 7 | — | — | — | — | 3 | — | 12 | 3·0 | — | 2 | — | 1 | — | — | 1 | 4 | 1·0 | 74 | 19·8 |
| Finsbury | 93,874 | — | 6 | 9 | — | 3 | — | — | 12 | — | 30 | 4·2 | — | 20 | — | 2 | 4 | — | 2 | 28 | 3·9 | 147 | 21·1 |
| City of London | 16,069 | — | 1 | — | — | 1 | — | — | 2 | — | 4 | 3·2 | — | — | — | — | — | — | — | — | — | 31 | 27·6 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch | 113,981 | — | 11 | 9 | — | — | — | 1 | 12 | — | 33 | 3·8 | — | 28 | 1 | 1 | 6 | — | 2 | 38 | 4·3 | 203 | 24·3 |
| Bethnal Green | 131,855 | — | 17 | 14 | — | 1 | — | 1 | 13 | 1 | 47 | 4·6 | — | 16 | 1 | 2 | 8 | — | 1 | 28 | 2·8 | 210 | 21·0 |
| Stepney | 316,269 | 26 | 37 | 47 | — | 5 | — | 1 | 23 | — | 139 | 5·7 | — | 46 | — | 2 | 4 | — | 10 | 62 | 2·6 | 446 | 19·2 |
| Poplar | 172,917 | 1 | 25 | 21 | — | 4 | — | 1 | 8 | — | 60 | 4·5 | — | 32 | — | 9 | 3 | 1 | 2 | 47 | 3·5 | 272 | 21·1 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | |
| Southwark | 212,560 | — | 29 | 23 | — | 2 | — | — | 20 | 1 | 75 | 4·6 | — | 17 | — | 3 | 12 | 1 | 2 | 35 | 2·1 | 321 | 20·6 |
| Bermondsey | 126,919 | — | 27 | 18 | — | 1 | — | 1 | 8 | 1 | 56 | 5·8 | — | 7 | 3 | — | 8 | — | 2 | 20 | 2·1 | 199 | 20·9 |
| Lambeth | 330,000 | — | 40 | 36 | — | 3 | — | — | 12 | 2 | 93 | 3·7 | — | 23 | — | 3 | 7 | — | 2 | 35 | 1·4 | 405 | 16·5 |
| Battersea | 190,434 | — | 31 | 30 | — | — | — | — | 9 | — | 70 | 4·8 | — | 28 | 1 | 2 | 6 | — | 5 | 42 | 2·9 | 227 | 16·6 |
| Wandsworth | 314,087 | — | 60 | 39 | — | 4 | 1 | 1 | 13 | 1 | 119 | 4·9 | — | 34 | 2 | 5 | 6 | — | 4 | 51 | 2·1 | 356 | 15·6 |
| Camberwell | 289,130 | — | 23 | 29 | — | — | — | 1 | 17 | — | 70 | 3·2 | — | 24 | 1 | 2 | 3 | — | 3 | 33 | 1·5 | 361 | 16·9 |
| Deptford | 120,715 | — | 14 | 14 | — | — | — | — | 13 | — | 41 | 4·4 | — | — | 2 | — | 4 | — | 3 | 9 | 1·0 | 160 | 18·2 |
| Greenwich | 114,872 | — | 8 | 12 | — | 3 | — | 1 | 5 | — | 29 | 3·3 | — | 1 | — | 1 | — | — | 3 | 5 | 0·6 | 107 | 12·4 |
| Lewisham | 169,078 | — | 21 | 30 | — | 2 | — | 3 | 4 | — | 60 | 4·6 | — | 3 | — | 2 | 7 | 1 | 2 | 15 | 1·2 | 163 | 13·1 |
| Woolwich | 137,489 | — | 29 | 15 | — | 1 | — | 5 | 5 | — | 55 | 5·2 | — | 3 | — | 1 | 1 | — | — | 5 | 0·5 | 151 | 15·3 |
| Port of London | — | — | 1 | — | — | — | — | — | 2 | — | 3 | — | — | — | — | — | — | — | — | — | — | — | — |

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

of Military Hygiene and Epidemiology, the Parliamentary Committee of Hygiene, and so on. (What a pity they had not come down and seen about the conditions a couple of years before, when they might have been of use and prevented the epidemic!) When they did come it was thought that these frequent visitors did the patients no good but rather harm. One man, quite alarmed at having so many visitors, asked if he was really so very ill or why were so many people taking interest in him? The epidemic manifested great severity, and when symptoms of perforation did appear the patient was always too weak to endure an operation. The best treatment was complete rest, extreme cleanliness, and only liquid food. Convalescence was rarely protracted; patients being generally young recovered quickly, and had mostly ceased to discharge bacillus typhosus in stools or urine before the end of three months. In addition to the 317 cases of typical enteric fever there were a number of others suspected to be abortive attacks or slighter infections. They occurred especially as the main epidemic was decreasing. They had nearly all headache, the characteristic tongue, gurgling in the iliac fossa, and diarrhœa; generally they gave a marked Widal reaction very early, sometimes they showed rose spots and had a pyrexia lasting from one to three weeks. They were not sufficiently marked to be declared enteric fever, an important decision; if enteric they must be notified according to recent French law, but public opinion does not seem yet to be ripe for notification, in private cases at least, for that entails disinfection and other horrors. Ten orderlies fell sick in the Naval Hospital while nursing cases. Two of them died—possibly they were overworked, for the wards had 40 beds each and were nursed by two orderlies only.

The present most dangerous water-supply has cost France in the last 21 years the lives of 424 men from her army and navy, as well as some 140,000 days wasted in hospital. A horse costs some £20; what is a man worth to the State? Dr. Brunet, in the articles from which we have quoted, accepts a moderate £60 estimate and 2*s.* 6*d.* for each day in hospital, that makes £40,000, and when all the cost of sick leave, invalidings, pensions, and so on, are added in, he makes the total national expense £80,000 in 21 years. In addition, there is the loss to Cherbourg. Dr. Brunet cannot tell how many cases or deaths from enteric fever there have been among the civil population, but in March, 1909, when the service death-rate increased so much, the civil deaths were 128, 51 above the 77 of the same month in the preceding year. And the general death-rate per 1000 in 1904–1908 was in London 15·1, in Paris 17·7, but in Cherbourg 34. All this may appear rather an old story as well as a terrible one; the main point of narrating it in these columns is to accentuate my belief that matters have not been changed, and that the water-supply of Cherbourg is still a source of grave risk. We have shown here what disastrous results may follow when administrators and high officials neglect the considered and often repeated advice of responsible medical officers.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *Cost of Sickness in Manchester.*

A FEW days ago Dr. J. Niven, the medical officer of health, read a striking paper at a meeting of the Manchester Statistical Society, on the cost of the sickness from which Manchester suffers. It may seem a cold-blooded method of treating the subject, but it is, of course, useful to estimate the cost of sickness in money. The suffering and distress cannot thus be calculated. Dr. Niven adopted the estimate that has been made that every man, woman, and child of the nation has an average value of £50. In the middle of 1909 the population of Manchester was 654,584, and on this estimate their value would be £32,729,200. Also, taking the number of deaths annually at 11,000, the value annually destroyed would be £550,000, "if the deaths were distributed in proportion to the numbers living at different ages," but instead of this being the case, death occurs chiefly at the ages when value was least or negative. It was estimated, also, that the annual expenditure in Manchester on sickness and funeral expenses would be £523,206. But this estimate is probably much too low, for the various sick-pay societies "were representative of thrift, and there was a large section of the community which was better off than their average members, while the expenditure on sickness in Manchester was very high." Dr. Niven gave the estimate of expenditure on sickness as follows: Public voluntary institutions, including nursing, £110,000; Poor-law expenditure on sickness, £70,000; private expenditure on sickness, £300,000; municipal sanitary expenditure, £116,000; with various other items, amounting in all to £741,000. The whole of this cost was not defrayed directly by the wage-earner, and he proposed to estimate the direct contribution at £500,000. He estimated the economic loss from phthisis alone at £500,000, but whether that estimate was correct or not it was evident that the annual loss to Manchester was enormous, "and that if the city, by expending £1,000,000, could effect its extinction the result would be cheaply arrived at." Dr. Niven said young people should be encouraged to play outdoor games. He had, too, a good word for military training in its effect on health, and said it would be a fine thing for discipline if the whole male population spent a year under training. It would involve loss, no doubt, but this would be least felt if the training were given at or about the age of 21, "at which age the greatest benefit would accrue." He said, moreover, that the mortality from phthisis in England and Wales fell at a more rapid rate from 1860 to 1900 than it had done recently, and that both in Germany and in England, "the steepest period of its fall coincided with a great access of commercial prosperity," when, of course, a family could the more easily be maintained in a well-nourished condition. This led to the question, he said, whether tuberculosis can be most cheaply prevented "by expending money in raising the nutrition of families in which tuberculosis had made its appearance, by housing consumptives in sanatoria, by other methods, or by a judicious combination of these methods."

### *Small-pox and Measles at Bury and Stalybridge.*

It is nearly seven years since Bury was visited with small-pox, but a serious outbreak has now occurred. About the beginning of the month Stalybridge has also suffered an outbreak of small-pox which has caused some anxiety. The sanitary authority is, however, making serious efforts to stamp out the disease. It is advising vaccination, while revaccination is carried out at the expense of the corporation. The Ashton guardians have prohibited visiting to the workhouse and hospital for the present, and the same plan has been adopted at the district infirmary. In addition to small-pox, Stalybridge has suffered from an epidemic of measles, and all the elementary schools in the borough are more or less seriously affected. It has spread rapidly during the last month, and the epidemic does not seem as yet exhausted. It may be remembered that in the last letter from Manchester it was a matter for congratulation that Stalybridge had a remarkably low death-rate. It may be feared that these visitations may affect it injuriously.

### *Hospital Saturday Fund.*

The annual meeting of the Manchester and Salford Saturday and Convalescent Homes Fund Incorporated was held recently in the town-hall, the Lord Mayor presiding. The total income for last year was £7166 6*s.* 10*d.*, a decrease of £275 on the previous year. The workmen's contributions showed a decrease of £161. The transfer of £250 from the reserve fund will, however, allow of the medical charities receiving £4400, the same amount as distributed last year. Hospital Saturday will this year fall on May 20th.

### *Gift of House and Land for Treatment of Phthisis.*

A very good excuse was made the other day by the Lord Mayor of Manchester for being a few minutes late at a meeting in the town hall. He said he had been receiving, on behalf of the city, the gift of a fine mansion and 40 acres of land in the country for a residential institution for children in the incipient stages of phthisis. The donor wished to hand the deeds over personally to the Lord Mayor. The site of the mansion, with a good deal of the land, is 500 feet above sea-level. There is ample meadow land for the keeping of cows, and the grounds are well adapted for outdoor shelter. The efforts which the education committee has made at Swinton in the treatment of physically defective children have been so successful that it is hoped that much benefit

will result in the case of the children treated somewhat similarly at Summerseat. It is proposed to commence the work with about 40 children, but with some extensions a larger number can be dealt with. Much good must result from Mr. Cuthbert C. Grundy's very generous gift.

*A School for Mothers.*

The annual meeting of the friends and supporters of the Manchester School for Mothers was held a week ago in the town-hall, the Lady Mayoress, Mrs. Behrens, presiding. It may seem strange that such a school should be needed, but as Mr. T. C. Horsfall remarked, "the manufacturing system, which had brought many of those present their wealth, had broken up family life and had deprived these women of the knowledge of how to deal with young children." This is a heavy indictment, but a true one, of our manufacturing system, so that, as he said further, an association like theirs was only doing its duty in supplying women "with the knowledge which the interests of their class had deprived them of." There are five branches in different parts of Manchester, and in the Ancoats branch, to take that as a sample, 468 women attended, among whom were many expectant mothers. They were advised as to how to prepare for the baby, and on its arrival they are advised as to its management. Weekly consultations are held, when every baby is weighed and when required it is seen by the doctor. Whether all this supervision may sometimes lessen the sense of parental responsibility need not here be considered, as this is a mere narrative; but there is no doubt that many an infant lives to be a year old when without this help and teaching it would have added to the mortality roll. At a year old it passes out of this school, and now the "Santa Fina Cripple Society" has agreed to supervise all children sent by the School for Mothers, and to continue their care till they are five years old, when they come under the inspection of the school medical officer. Dr. H. R. Hutton said that the object of the school was to try "to reduce the appalling death-rate in the congested districts of Manchester," largely due to the deaths of small infants. Mrs. Behrens commended the work of the school, to which she said all should subscribe.

March 18th.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Hospital Saturday Fund.*

THE annual meeting of subscribers to this fund was held on March 13th under the presidency of the Lord Mayor. The report stated that the annual collection for last year amounted to £20,375, which is £686 in excess of the previous year. The number of contributing firms was 2188. In October £10,000 were voted for distribution among the medical institutions of the city. The work of the convalescent homes supported by them increased each year. In 1910 there were 1230 men at Tyn-y-Coed, near Llandudno, and 1388 women at Marle Hall, near Llanrhos. At Red House, Great Barr, the home for children, 615 children and 110 women were admitted. The total number of patients was 3343, an increase of 357 over the previous year. Good progress had been made with the Sir William Cook memorial scheme, and when the new home for consumptives at Romsley Hill was completed it would be handed over to the fund to be managed and maintained by the committee.

*Treatment of Consumptive Children.*

The success of the Salterley Grange and Yardley Road Sanatorium for Consumptives has raised the question whether similar provision should not be made by the health committee for consumptive children. At present there is no municipal or other institution where these children can be treated free. At a meeting of the city council the chairman of the health committee stated that they were prepared to undertake the treatment of such children if it were the wish of the council, and a subcommittee has been appointed to prepare a scheme. There has been much correspondence in the newspapers urging the importance of the subject. The primary duty of a health committee is, of course, the prevention of disease, and since children appear rarely to suffer from chronic phthisis and are not centres of infection in the same way as the adult consumptive it becomes a debatable question as to how far the municipal authorities are justified in treating other tuberculous conditions. If a sanatorium be limited to cases of pulmonary tuberculosis in children, then undoubtedly many cases of pulmonary disease would be admitted of a non-tuberculous nature, so great is the difficulty of distinguishing between these conditions. The health committee's scheme will therefore be awaited with much interest.

March 21st.

## WALES.

(FROM OUR OWN CORRESPONDENTS.)

*Cardiff Milk-Supply.*

COMPLAINTS are constantly being made by the inhabitants of Cardiff with regard to the quality of the milk-supply of the town. A suggestion has been made that the corporation should make arrangements for the examination of any sample of milk submitted by a householder. It is admitted that no action could be taken against the milk vendor in the event of the report of the examination being unsatisfactory, but it is contended that a knowledge of the poor supplies would be obtained and official samples could then be collected. At a recent meeting of the health committee the medical officer of health, Dr. E. Walford, stated that by arrangement with the South Wales and Monmouthshire University College and the Board of Agriculture and Fisheries, dairymen, farmers, and cowkeepers generally could have milk examined for a fee of 6*d.*, but that other persons would have to pay a fee to the public analyst of 10*s.* 6*d.* A subcommittee of the health committee has been appointed to consider the practicability of carrying out more frequent examinations.

*Glanders among Monmouthshire Pit Horses.*

In consequence of an outbreak of glanders among the horses in one of the collieries in Ebbw Vale which occurred last year[1] and which it was said had been the cause of the disease in several men, a departmental committee was appointed to consider what steps could be taken to deal with such outbreaks in the future. An Order has now been made by the Board of Agriculture and Fisheries empowering the Monmouthshire County Council to make regulations, applicable to any part of the county, for prohibiting the sale or disposal or removal from colliery premises of any horse, ass, or mule which has been used about the colliery, and prohibiting the burial or destruction of the carcass of any of these animals except under certificate given by an inspector, unless a reasonable opportunity has been given to the county council to ascertain by the mallein test or in some other way whether the animal was affected with glanders. The Order further enables the county council to prescribe the form of notice that shall be given of the intended sale, removal, or burial of one of the animals named.

*Aberystwith Health Report.*

The medical officer of health of the borough of Aberystwith, Dr. A. Thomas, states in his annual report that the birth-rate in 1910 was only 15·7 per 1000 of the total population, the death-rate from all causes 13·2 per 1000, and the infantile mortality-rate equal to 95 per 1000 births. The phthisis death-rate was 1·1 per 1000.

*Tregaron Health Report.*

The vital statistics relating to the rural district of Tregaron, in Cardiganshire, are in striking contrast to those of Aberystwith. In his report for 1910 Dr. Evan Lloyd states that the birth-rate was 16·7 per 1000 of the population, the death-rate from all causes 17·9 per 1000, the infantile mortality rate equal to 120 per 1000 births, and the death-rate from phthisis 3·2 per 1000. These death-rates are considerably higher than those which prevailed in the rural districts of England and Wales generally, and it is impossible not to connect them with the very unsatisfactory administration of the Public Health Acts which appears to prevail in Tregaron. Nearly four years ago Dr. E. P. Manby, after an inspection of the district on behalf of the Local Government Board, pointed out the direction which improvements should take, but little notice seems to have been taken of his suggestions. The inspector of nuisances is employed only three

[1] THE LANCET, August 13th, 1910, p. 517.

days in each week, and in view of the insanitary state of the district, where there is a population of nearly 8000 persons, the Local Government Board advised the appointment of an official devoting his whole time to his duties at an adequate salary. The district council refuses to accept this advice, notwithstanding the fact that the Board threatens to withhold its sanction to an appointment at an inadequate salary. The most urgent requirement of the district is a proper water-supply in the village of Tregaron, where there is a population of 750 persons. The existing supply is from wells, and when some of them are cleaned out periodically there is stated to be found a large deposit of offensive material, not unlike that accumulating in street gullies. Dr. Lloyd points out in his report that the lack of a proper water-supply is detrimental to the best interests of the village, for visitors naturally keep away from it, and the erection of new houses is prevented.

March 20th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Association of School Medical Officers.*

AN Association of School Medical Officers for Scotland has recently been formed. The first meeting is to be held on Saturday, April 8th, at 11.30 A.M., in the offices of the Govan Parish School Board, 151, Bath-street, Glasgow. All medical officers connected with schools in Scotland are invited to be present. The first president is Dr. Ernest T. Roberts, principal medical officer to the Glasgow School Board, and the honorary secretary is Dr. J. King Patrick, County Buildings, Ayr.

*Analysis of Food in Glasgow.*

It is evident, according to the annual report on the operations of the analyst's department in Glasgow, that the department has been very useful, both for purely analytical work and for the purpose of scientific investigation. The number of samples examined exceeds that of any previous year, no fewer than 3646 being dealt with. Dealing with the analysis of samples received under the Food and Drugs Acts, the report says that, defective and cumbersome as these Acts undoubtedly are, yet their strict enforcement provides a valuable protection against the adulteration of the food of the people, nowadays scientifically conceived and carried out. Of the 777 official samples received, 105 were certified as adulterated, whilst 33 were reported against as being of doubtful or suspicious quality. Regarding sweet milk, it is stated that much controversy has taken place over the Sale of Milk Regulations (1901) Act. The point under discussion is the fat limit, which is 3 per cent. On Nov. 15th, 1909, the first batch of samples, 60 in number, was taken at the different railway termini in Glasgow, and in only one was the percentage below 3. The sample contained 2·9 per cent. of cream, but 15 per cent. of added water, therefore the percentage of fat in the original milk was well above 3. During the year 237 samples of butter were submitted, 17 of which were certified as containing foreign fat in amount ranging from 16 per cent. to 89·5 per cent., whilst the percentage of water in one sample was above the statutory limit—namely, 19 per cent. The number certified as adulterated was 19, which is equivalent to 7·6 per cent., compared with 27·4 for the previous year. Amongst the miscellaneous samples was a packet of smoking mixture and a wooden pipe received by the police. The smoking mixture, which was said to be exposed for sale and retailed to children in the city, consisted of chopped-up dried leaves and flowers of the common coltsfoot. It has been left to the medical officer of health to decide whether the smoking of the herb by children is likely to produce any injurious effect.

*Paisley and the Home Treatment of Phthisis.*

The medical officer of health of Paisley has submitted a report to Paisley town council dealing with the proposal recently put forward for the home treatment of phthisis. He points out that the burgh of Rutherglen has adopted a "scheme" to encourage the securing by the householder of an extra apartment for the sole use of the patient. He suggests that in Paisley, where cases are brought to light in which owing to the number of young children and lack of proper accommodation proper precautions for the prevention of infection are difficult to attain, in cases of necessity the local authority might, in the event of the householder securing a house with an extra room for the sole use of the patient, pay the difference of rent between the smaller and the larger house. The town council, on the strength of this report, has appointed a committee to confer with the trustees of the Clark Fund, which provides a grant of 5*s.* weekly to a number of afflicted persons in Paisley.

*Milne Treatment of Scarlet Fever.*

At a meeting held last week of the Renfrew and Clydebank Hospital Board a letter was read from the Local Government Board with regard to the appointment of a nurse by the Clydebank Town Council to carry out the Dr. Milne treatment of scarlet fever. The communication stated that the Board, while having no objection to the rubbing of children with eucalyptus oil as a means of preventing infection, could not regard it as a substitute for hospital treatment. The Board indeed could not regard the treatment as obviating the need of the hospital.

March 21st.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Work of the Dublin Sanitary Association.*

THE Dublin Sanitary Association is a voluntary society composed of persons interested in matters concerning the health of Dublin and its neighbourhood. At present it has a membership of 112 members. In spite of this meagre support from the public the council of the association undertakes courageously a large amount of work for the good of the community. The annual report of the year's work published last week touches on many subjects of prime importance. The council remarks that the condition of many of the primary schools, not only in Dublin but in many parts of Ireland, is so insanitary as to be a menace to public health. Especially is there a great need for proper medical inspection. The Commissioners of National Education have agreed that additional funds for the erection or improvements of school-houses are urgently necessary, and have declared that they would welcome similar provisions for medical inspection to those in force in England, but repeated applications to the Treasury have been without avail. Having noticed that an antivaccination crusade was being carried on in County Wexford, the council took steps, by correspondence in the newspapers and otherwise, to meet the arguments of the antivaccinationists. It has drawn attention also to a peculiar regulation of the Post-Office authorities regarding the outbreak of infective disease in the households of its employees. In the case of scarlet fever, small-pox, typhus fever, or epidemic cholera breaking out in the residence of a Post-Office servant he is to absent himself from duty, and report to the postmaster. In the case, however, of diphtheria, cerebro-spinal meningitis, measles, or enteric fever, he is not to absent himself, but is to report the circumstances to the postmaster. In either case the postmaster is to report to the chief medical officer in London, who is to decide what steps are to be taken. The council does not see any justification for placing diphtheria and measles in a different category from scarlet fever and cholera, and, moreover, thinks that reporting to the chief medical officer in London causes unnecessary delay. That the council keeps a close eye to neglect on the part of the sanitary authorities of the city is shown by the list of matters in which it was in correspondence with the cleansing committee of the Dublin corporation, viz.: the keeping of house dustbins in better repair, the repairing of the dust carts at present in use, the watering of the streets in front of the sweeping machines, the interference with the contents of the dustbins, the sweeping of the footways, and the overloading of manure carts and consequent scattering of the contents about the streets.

*Royal Victoria Eye and Ear Hospital, Dublin.*

The annual report of the Royal Victoria Eye and Ear Hospital presented last week showed that during the past year 1428 patients were admitted, the average daily number of beds occupied being 77·87. In the out-patient department 10,132 persons were attended. The hospital has a large adverse balance at the bank.

*The Vacant Inspectorship of Lunacy.*

Dr. W. R. Dawson, medical superintendent, Farnham House, Dublin, has been appointed by His Excellency the Lord Lieutenant to the vacant post of Inspector of Lunatic Asylums in Ireland.

*Belfast and Midwives Legislation.*

The inclusion in a Belfast corporation omnibus Bill at present before Parliament of clauses governing the practice of midwifery in Belfast is likely to cause perturbation among those who are anxious to obtain a Midwives Bill for Ireland as a whole. The Belfast Bill proposes to establish a Belfast Midwives Board with powers for the city of Belfast very similar to those possessed by the Central Midwives Board for England. It would establish a roll of midwives, and practice by others than those on the roll would be prohibited. The drafting of the Bill is far from clear, but it would appear that the Board would appoint examiners and conduct examinations of persons applying for admission to the roll. The Dublin School of Midwifery is likely to offer strenuous opposition to any attempt to deal with the midwives question as a purely local matter. It is, moreover, pointed out that it is not so much in the large cities as in country districts that harm is done by ignorant and untrained "handy women."

*Double Tenement Houses in Belfast.*

Mr. Peter Kerr-Smiley, M.P., has given notice that after the second reading of the Belfast Corporation Bill he will move:—

That it be an instruction to the committee which will in due course consider the Bill to insert a clause compelling owners of tenement houses in Belfast to provide adequate separate sanitary conveniences for each occupier.

On page 78 of the report of the Belfast Health Commission it is said: "A serious blot in Belfast housing is that in certain cases (streets are given) the houses which were built for one family are now double-tenanted—one family occupying the ground floor and a separate family the upper floor. In these cases the tenant of the upper floor has no access to the yard and conveniences except through the rooms of the lower tenant, and when, as frequently happens, the lower tenant is at work and has locked his rooms, the upper tenant may have for long periods no access at all to the conveniences in the daytime, while at night such access must be almost impossible. This condition of things is in all respects most unsatisfactory, and leads to fæcal matter being stored in the upper living rooms until an opportunity occurs to carry it to the yard. On the ground that the upper tenancies have in effect no sanitary accommodation, these double tenancies should be sternly abolished, or the provision of an external stairway from the upper rooms to the yard should be insisted on"; and on p. 101 of the same report the Commissioners recommend: "Double tenancy of houses should be prohibited save where suitable water-closet accommodation is provided for each portion of the house let independently."

*Down County Infirmary.*

From the report just issued it appears that during the year 1910 the number of patients admitted was 576, making, with those in hospital on Jan. 1st, 1910, a total of 621 cases treated during the year. 1254 patients attended the extern department and 49 tuberculous patients were admitted to the sanatorium. Both hospitals have been repainted and repaired, and a steam steriliser and destructor have been erected. Financially the total income was £2444 4*s.* 5*d.* and the expenditure £2308 17*s.* 3*d.*, leaving a balance of £135 7*s.* 2*d.* to credit.

March 21st.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Reconstitution of the Institute of Medical Jurisprudence.*

MEDICO-LEGAL investigations have been carried on since 1864 in Paris in a building in the department of the Prefecture of Police, situated at the extreme point of the *Cité*, and well known under the name of the Morgue. For some years past its condition has been deplorable; the building is too small, the freezing apparatus for the subjects is insufficient, and the post-mortem chambers, which are ill-lighted, very cold, and damp, are both inconvenient and unhealthy. There is little doubt that it was in the Morgue that Dr. Brouardel and Dr. Laye, contracted the germs of tuberculosis. At the creation, five years ago, of the Institute of Medical Jurisprudence with the diploma of *Médecin légiste*, the Faculty of Medicine naturally utilised this edifice, frequented at the present time by numerous students as well as by French and foreign medical men who pursue their studies in these lugubrious surroundings. For the last 30 years the State and the Ville de Paris have been negotiating the transfer and the reconstruction of the Morgue, each party endeavouring to lay the heavier share of the expense (estimated at £40,000) on the shoulders of the other. They have finally come to an agreement, the expenses to be equally shared between the two parties, and a new institute of legal medicine is to be raised in the Place Mazas, on the site where the prison, now demolished, stood. At the Chamber of Deputies M. Escudier, who was commissioned to report on this scheme, has recommended its adoption, and communicated the chief features of the organisation of the future institute. The establishment will comprise three distinct services—viz., (1) administration: the reception and recognition of corpses, &c., arranged in an infinitely more suitable manner than in the dingy and doubtful receptacles at the present Morgue; (2) post-mortem service and judicial operations, consisting of three necropsy chambers and a laboratory for medico-legal examinations; and (3) service for the study of medical jurisprudence, including an amphitheatre with seats for 200 students, a laboratory of toxicology, receptacles for animals to be used for experimentation, a museum, and a library. M. Escudier adds that the institute will also comprise rooms which, with the permission of the Vice-Rector, may be granted to men of science and workers desirous of undertaking researches or making experiments.

*Transplantation of the Fibula.*

At a recent meeting of the Society of Paris Surgeons M. Euguier showed a man who had suffered from osteo-sarcoma which had necessitated resection of 9 centimetres of his left humeral diaphysis. M. Euguier removed *en bloc* the bone, the tumour, and the brachialis anticus and triceps muscles which were affected, but the nerves and vessels supplying the arm were preserved. He then replaced the loss of substance by introducing into the medullary cavities of the divided portions of the humerus a piece of the right fibula 13 centimetres long and having its ends pointed. The fixation of the transplanted bone in its new position was assured by some taps with a mallet on the olecranon. In nine months after the operation the patient had good use of the arm and resumed his previous occupation of sawing timber in a forest. The upper end of the transplanted portion of the fibula united firmly with the humerus, but at its lower end there was a false joint between it and the inferior epiphysis of the humerus. The tumour was a cystic osteo-sarcoma with myeloplasia in the periosteum of the anterior lower half of the humeral diaphysis.

*Pericardotomy.*

Pericardotomy was recently performed by Dr. Jacob at the Val de Grâce Hospital, and an account of the case was communicated by M. Bochard at a meeting of the Surgical Society held on Feb. 22nd. The patient was a man, aged 23 years, who was admitted in a condition approaching asphyxia and presented signs of pericardial effusion which was probably of tuberculous origin. Two successive punctures having been without effect, Dr. Jacob resected the fifth costal cartilage under local anæsthesia, and incised the pericardium which was found to be somewhat adherent to the heart. On these adhesions being broken up by the finger a considerable amount of serous liquid escaped, after which the soft parts were brought together without suturing the pericardium and without drainage. The patient immediately experienced great relief and made a gradual recovery. The subsequent formation of two pleuritic patches as well as of obvious lesions in the pulmonary apices explained the etiology of the pericardial effusion.

March 20th.

THE SMALL-POX EPIDEMIC IN LONDON.—March 21st was the ninth successive day on which no case of small-pox was notified to the Metropolitan Asylums Board. Chicken-pox has been made a notifiable disease for a period of three months from March 22nd.

## BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

*Cholera Prospects.*

ALTHOUGH the Hungarian newspapers are jubilant over the announcement that cholera has disappeared from the country, sanitarians are not without misgivings as to what may happen when the warm season returns. This epidemic, now fortunately concluded, commenced at the end of last summer and continued until the end of January, 1911, with an average of one or two fresh cases notified every day during that month. Cases occurred in about 100 villages, in several towns, and even in the capital, Hungary presenting in this respect a great contrast to Austria, Germany, and France, where the disease obtained no permanent footing but was only represented by imported cases. In Hamburg about 18 years ago there was a disastrous epidemic which broke out in the harbour, but during the present cholera season there was only one case in Hamburg, the disease being prevented from spreading. It must be confessed that in these matters Hungary lags behind the western nations, and this defect is so well recognised here that the National Health Committee has communicated with the Minister of Public Health (who is also the Minister of Internal Affairs) recommending that the head of the hygienic section of the Ministry should proceed to Germany and make himself acquainted with the methods by which that country prevents the entrance of cholera by land across the Russian frontier or by the rivers coming from Russia. At the same time it deserves to be recorded that some good work was done in Hungary for the suppression of isolated outbreaks. This was the case at Mohacs, the first place invaded by the disease in this country. This town lies on both banks of the Danube, the water of which river was bacteriologically proved to be polluted with cholera bacilli. The first requisite was a supply of wholesome drinking water, and the use of water from the Danube was strictly forbidden. All the wells in the town were examined, and those which were not sufficiently clean were closed. Civilian health officers were sent into every district of the town, always accompanied by soldiers armed with rifles, to search for patients, because from the point of view of the spread of the disease a hidden cholera patient was of more importance than even ten fatal cases. This investigation conducted under the protection of an armed force had a good result. For while up to that time only fatal cases had been notified, and cholera patients were, so to say, not seen, on the first day of the systematic search a dozen patients were conveyed to the improvised cholera hospital. A fairly good ambulance vehicle was also provided for their removal in lieu of the common carts, which had been used for this purpose, and from which the vomit of the cholera patients fell on the road. By an exhibition of kindness and tact the health officers succeeded not only in calming the public alarm but also in convincing the people of the benefits of isolating patients. Eventually the people allowed their sick relatives to be carried to the hospitals, seeing that these institutions supplied them with clean beds and good food. The families of the cholera patients were also provided for by the Red Cross Society, and artisans who were unable to earn their living on account of the quarantine received one or two kronen daily as subsistence money. The healthy occupants of infected houses were isolated for five days. The municipal medical officers also went personally from house to house, searching for patients and impressing on the people the necessity of isolation, with the result that whereas formerly medical men were threatened with death if they dared to remove patients to the hospitals, such removals were now accomplished without resistance or difficulty. This energetic interference had the effect of stopping the cholera in five days, and in the ensuing five weeks there occurred only five sporadic cases. In Bata, a town in a rural district also on the banks of the Danube, where in one single day 30 cases were notified with 15 deaths, the board went to work in the same way as in Mohacs, the result being that in seven days there were no fresh cases. It must be said that these successful applications of hygienic measures were exceptional instances of their kind, and foci of cholera still remained scattered about the country. According to Dr. Schächter, chief editor of the *Gyógyászat* (*Therapeutics*), one reason of this was that the orders of the Central Board located in Budapest all came late. The Central Board did not authorise independent action by the local boards, which, therefore, had to write to the Ministry for instructions in every matter of detail, and this circumlocution caused much delay.

*Incident at a Royal Hospital Visit.*

His Majesty Emperor Francis Joseph recently paid a visit to the General Hospital, where he saw a patient, a Polish Jew, who, the chief physician said, was suffering from the same disease to which an American railway millionaire had fallen a victim. The patient thereupon remarked to His Majesty: "Alas! such is my luck. I wanted his money and I got his illness."

March 13th.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*Teaching the Importance of the Teeth.*

THERE is a feeling among the dentists of the United States that dentistry should be made definitely a branch of the medical profession; in other words, that students intending to practise dentistry should be made to take a full course in medicine first. There is little doubt that there will soon be free dental clinics established in all the public schools of New York. At present the teeth of all pupils are examined, as well as their vision and hearing, and if defects are found the child is given a letter to his parents advising the importance of having them remedied. At the Academy of Medicine recently a public lecture on the teeth was given under the auspices of the Health Committee of the American Medical Profession, and was largely attended. The lecturer pointed out the far-reaching results on the ribs and other portions of the human frame of dentures which had been allowed to persist in distorted shape; he also foretold the early disappearance of the wisdom teeth from members of the human race.

*A New Infant Asylum.—New Ward in Cancer Hospital.*

Governor Dix, of the State of New York, dedicated the new Hebrew Infant Asylum at Aqueduct-avenue and Kingsbridge-road on Feb. 23rd. It is a five-storey red brick structure, with accommodation for 450 children, and cost £90,000.—A new ward for incurables in the New York Skin and Cancer Hospital was opened on Feb. 17th. Malignant cases, which other institutions will not receive, will be admitted to this ward. The research laboratory is being extensively equipped with apparatus obtained mainly in Europe.

*The Latest Move by Anti-vivisectionists.*

A Bill has been introduced into the New York State Legislature "to prevent cruelty by conferring upon the board of regents of the University of the State of New York the power of supervision of experiments upon living animals." No experiments are to be permitted unless for knowledge useful in saving or prolonging life, and no experiment is to be permitted to demonstrate known facts. Supervisors of animal experimentation are to be appointed upon certification from humane societies. They are to have authority to enter any place licensed for vivisection. Annual reports must be made by experimenters of the number of experiments, animals used, anæsthetics, if any, and results. Anyone performing or assisting in vivisection in violation of the Act is punishable by one year's imprisonment. The object of all such legislation, apparently fair on the face of it, is to permit the entrance of lay inspectors to the laboratories of experimental physiology, whose reports, couched in unscientific and uncomprehending language, will probably cause such a wave of popular hysteria as to close up the laboratories for ever.

*An Arrest for Witchcraft.*

At Reading, Pa, a quack has been arrested on the charge of practising witchcraft as a "hex doctor." His patient was a young child suffering from marasmus. When his medicines produced no improvement, he informed the mother that the child was under a spell and that he was about to make an incantation that would break every bone in the body of the malevolent person who had cast the spell. His subsequent performances threw the child's mother into acute hysteria,

whereupon her husband brought about the quack's arrest on the charge aforesaid.

*Continued Opium Seizures.*

A few weeks' activity on the part of the Federal officials has resulted in the seizure of four tons of smuggled opium of a total value of over £20,000. It was found that practically all the opium was smuggled in from Canada, Mexico, or from the East through the Puget Sound territory. The seized opium will be sold by auction to recognised wholesale druggists.

*Diphtheria in Baltimore.*

At the presesent time diphtheria is very prevalent in Baltimore. It first showed itself in Johns Hopkins Hospital, and quickly spread amongst patients, nurses, physicians, and students. On Feb. 25th Dr. J. Whitridge Williams, dean of the Johns Hopkins medical school, ordered the school to be closed until further notice. Since then most of the hospitals in Baltimore have been closed in order to protect their patients. The disease has spread considerably in the city, and a large number of Johns Hopkins medical students are quarantined in their own homes.

*Typhoid Fever Epidemic in Erie, Pennsylvania.*

In Erie, Pa., a town on the Canadian border, a typhoid fever epidemic of great virulence is raging. Ten deaths from the disease were reported during the 24 hours ending March 1st. It is estimated that taking into consideration the number of cases in Erie itself and its suburbs and in the small towns across the Canadian border there are 1000 cases of typhoid fever in the district. The cause has not been yet determined, but the outbreak is thought to be due to typhoid-infected sewage which has been allowed to flow untreated into Lake Erie in the vicinity of the town of Erie. The question of the pollution of rivers, streams, and lakes is now receiving the attention of both Federal and State authorities in this country; especially is the question of the pollution of the Great Lakes being discussed by health authorities. Surgeon-General Walter Wyman, of the Public Health and Marine Hospital Service, is of the opinion that the national Government should intervene. and that the careless and criminal pollution of the Great Lakes which is now going on should, in the interests of the community at large, be stopped as soon as possible. The stumbling-block to the enactment of legislation to this effect is as to how the State and Federal laws bearing on the point are to be interpreted—that is to say, whether by virtue of the constitution the national Government has the right to interfere. This point is likely to be settled in a short time.

*Appointment of Dr. W. Smith as Superintendent of Johns Hopkins Hospital.*

Dr. Winford H. Smith, who for the past two years has filled the position of superintendent of Bellevue Hospital, New York, has resigned to accept a similar post at the Johns Hopkins Hospital, Baltimore.

March 11th.

## NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

*The Smoke Nuisance at Calcutta.*

THE health committee of the corporation will shortly consider the recommendations of the Bengal Smoke Nuisance Commission regarding the modification of the existing Act. In a letter from the President of the Commission it is stated that a great nuisance arises at night from the open flames of oil lamps, 20,000 or 30,000 of these being in various shops and small factories in the town and suburbs. It is calculated that the smoke is equal to about 200 ordinary factory chimneys. The amendment of the Act to prohibit the use of such lamps is suggested, as the smoke is of high gravity and a fruitful source of throat and lung complaints.

*Cocaine Smuggling.*

During recent months the Excise authorities have engaged in a vigorous campaign among foreign seamen coming to Bombay and have succeeded in seizing large quantities of cocaine before it could be passed on to those on shore who exploit the traffic. But the "importers" will risk punishment in the hope of landing a consignment which need not be large in bulk or original value to ensure an amazing profit. The authorities in Bombay are aware that the European seamen in question have European confederates in the city. It may suggest itself to those concerned that if the shipmasters are also fined when contraband is discovered on board their vessels, the fact that the fines are distributable and recoverable from all members of the crew in rateable proportions to their wages will have the effect of providing the authorities with many valuable allies on board the ship. This is done on the other side of India, and that the method has been most satisfactory in its working.

*Plague Measures in Moulmein.*

Captain W. F. Brayne, I.M.S., officer on general plague duty in Burma, in his recent inspection note on Moulmein, makes some interesting remarks. He deals with the failure of the plague measures and condemns the procedure. The lodging-house by-laws were used, not as a means of keeping the houses sanitary, but for the collection of revenue in the form of a lodging tax. Captain Brayne's opinion is that plague work in Moulmein in the past has been of no value, and that the money spent has been wasted. He recommends several measures, amongst them the appointment of a European commissioned officer on special plague duty for Moulmein only and the formation of a sanitary committee. As the former will entail expenditure which the Government is not likely to sanction, he is in favour of abolishing plague measures altogether and leaving the treatment of plague to the civil surgeon, as he deals with other infectious diseases.

*The Spread of Cholera.*

Lieutenant-Colonel Leonard Rogers, I.M.S., delivered an interesting address on cholera at a meeting of the Asiatic Society recently held in Calcutta. He remarked upon ancient references to a disease which may well have been cholera, and referred to the terrible epidemics that have occurred in the past hundred years both in Asia and Europe. He said that the epidemic in Russia in 1910 caused over 90,000 deaths up to the end of last September. The outbreak in Italy resulted in 1000 deaths in Naples district during that month, while the disease also appeared in Portugal, Turkey, and Madeira. He went on to say that numerous cases had also occurred in Eastern Germany, so that a large portion of Europe had now been invaded. The histories of the earlier epidemics always showed a marked lull during the winter months, and it was just possible that especially severe cold might destroy the infection, but unfortunately all the facts pointed to a still further spread of the disease, especially in Southern Europe, during 1911, the position being more serious than at any period since the 1883 outbreak in Egypt and the South of Europe. With regard to the prospects in England there was little ground for alarm, as the English inspection system had been uniformly very successful in preventing any spread from imported cases, while the excellent water-supplies of English towns had robbed the disease of its principal terrors. The same remark applied to a considerable extent to Germany and France, but it was to be feared that the more southern parts of Europe still frequently presented favourable opportunities for the spread of cholera, owing to sanitation being less advanced in their towns.

*The late Surgeon-Major R. E. Wrafter.*

I regret to announce the death of a veteran Indian officer, Surgeon-Major R. E. Wrafter, who died in Dehra Dun on Jan. 23rd in the seventy-eighth year of his age. Major Wrafter entered the late Bengal (H.E.I.C.'s) Medical Service in the year 1848, just in time to serve through the Punjab campaign of 1848–49, in the course of which he was present in the affair of Ramnuggar, the passage of the Chenab river, and the battles of Sadoolapur, Chillianwala, and Guzerat. At the outbreak of the Mutiny he was at Meerut, and subsequently took part in the engagements of the Hindun (May 30th and 31st) and of Budlu-ka-Sarai (June 8th). He was present throughout the siege and capture of Delhi, at the action of Nudjuffghar on August 25th, 1857, at the siege and capture of Lucknow, and was on service till the very end of the long struggle, being engaged throughout the campaign in Rohilkhand, including the attack on Fort Rooya, the action at Allygunj in Oudh, the capture of Bareilly, and the pursuit of the rebels at Shahjehanpur and Mohumdee. He entered civil employ in the year 1864, and was civil surgeon at several stations in the United Provinces and the Punjab. After 40 years' service Major

Wrafter retired and in 1888 settled at Dehra Dun. His unfailing kindness and sympathetic disposition endeared him to all with whom he came into contact.

*United Provinces Exhibition, Allahabad.*

It is impossible to give a detailed account of the many exhibits, but at the same time it is worthy of note to mention the enterprise of some British firms. It can safely be said that Messrs. Down Bros'. exhibit was one of the best. It showed a collection of surgical and other appliances of great value, and besides this their stall was highly instructive, especially to Indians who visited this exhibition. They put in place a complete surgical ward, an anæsthetising chamber, an operating theatre, a sterilising room—comprising every piece of necessary furniture and appliance for a complete operation in an up-to-date hospital. Besides operating tables and aseptic glass tables, there were diagnostic finger-stalls, clamps, forceps, cystoscopes, aero-urethroscopes, and every surgical contrivance. Messrs. Burroughs, Wellcome, and Co. had a most interesting stall showing their well-known tabloids and various therapeutic sera, besides tinctures, &c. Of particular interest to the tropics were their samples of tubes containing quinine hydrochloride in 4-grain treatments. Jeyes' Sanitary Compounds Co., Limited, were exhibiting their disinfectants. Pearson's Antiseptic Co. likewise were exhibiting the products which bear their name. On behalf of Messrs. Watson and Sons, London, Messrs. Smith, Stanistreet, and Co., of Calcutta, were exhibiting a very complete X ray outfit. This Calcutta firm made a very excellent show. The Empire Engineering Co., of Cawnpore, showed a most interesting lot of sanitary appliances of value in Indian municipalities. Lastly, *Indian Public Health*, the only sanitary journal in the East, had a stall. The exhibition was a great success.

Feb. 24th.

# Obituary.

## ANDREW SMART, M.D. EDIN., LL.D., F.R.C.P. EDIN.,

CONSULTING PHYSICIAN, ROYAL INFIRMARY, EDINBURGH, ETC.

Dr. Andrew Smart, whose death on March 8th at the residence of his son, 78, Bertram-road, Hendon, N.W., was noted in our issue of last week, was in his eighty-seventh year. He was the youngest son of an English gentleman who owned large properties in Jamaica. His mother was a Miss Christie, a member of a well-known Stirlingshire family. He took his degree as M.D. at the University of Edinburgh in 1862, and in 1865 was elected a Fellow of the Royal College of Physicians of Edinburgh. He was appointed assistant physician to the Edinburgh Royal Infirmary in 1880, becoming in 1900 senior ordinary physician to that institution, the appointment being renewed for a term of five years 12 months later. He retired in 1906 and was appointed a consulting physician to the infirmary. He was at one time assistant to the professor of the practice of medicine at the University of Edinburgh, and to the professor of clinical medicine, and was a lecturer and examiner in clinical medicine and therapeutics at the Royal Infirmary, besides holding many minor appointments. He was an Ext. Memb. of the Royal Medical Society of Edinburgh, and an honorary member of the New York State Agricultural Society. St. Andrews University conferred on him its honorary degree of LL.D. Dr. Smart is said to have been the first to discover the presence of micro-organisms in living tissue, the discovery being made in connexion with his work on rinderpest in 1865, the results of which are embodied in his reports on rinderpest to the Lord Provost, magistrates, and town council of Edinburgh. He there showed that freshly drawn rinderpest blood presented under a high magnifying power chains of minute bodies lying between the blood corpuscles and completely surrounding them and the other histological elements. These chain-like structures, in virtue of their prodigious numerical superiority, are seen to occupy the entire microscopical field. It is said that Dr. Smart's delineation of the blood in rinderpest, with the accompanying reports, originated the belief in the germ origin of disease and led to the earliest statement on record expressive of what is now understood as the "germ theory of disease." Dr. Smart's reports were translated into several continental tongues and attracted commendation from the leading pathologists, British and continental. His studies in anæmia appeared in THE LANCET of Feb. 18th and 25th, 1893. A little book by Dr. Smart, entitled "Germs, Dust, and Disease," is a republication of two lectures—the first on Preventable Disease, the second on Occupational Diseases—delivered by him to popular audiences. Both represented an advanced stage of thought at the time they were delivered, and much that was there laid down has already become, or is in process of becoming, generally adopted.

Dr. Smart is survived by a widow, four sons (one of whom is Dr. A. G. H. Smart of Kelantan, Federated Malay States), and two daughters.

## WILLIAM PALEY, M D. LOND., M.R.C.S. ENG., L.S.A., J.P.

THERE passed away on March 13th, at the residence of his son-in-law, Mr. Alfred Saunders, at Ealing, a worthy and highly respected representative of the older school of provincial consulting physicians, in the person of Dr. William Paley. Dr. Paley was in his 95th year, and had retired from practice since 1894. He was a son of the Rev. Edmund Paley, rector of Greatford, and consequently a grandson of the Rev. William Paley, Archdeacon of Carlisle and Prebendary of St. Paul's, widely known through his "Evidences of Christianity" and "Natural Religion." His eldest brother was Professor F. A. Paley, the distinguished classical scholar of Cambridge, and later of Stonyhurst. Dr. Paley was educated at Christ's Hospital, and received his medical training at the London Hospital. He took the L.S.A. in 1837 and became M.R.C.S. in 1839. In the early "forties" Dr. Paley went to Peterborough as house surgeon to the Infirmary and Dispensary. He soon decided, however, that his bent was for practice as a consulting physician rather than as a general practitioner. In 1842 he took the M.D. of London, and soon allied himself with Dr. Skrimshire, a well-known consultant in Peterborough, whom in 1846 he succeeded in the post of physician to the Infirmary, and the work done at Peterborough by himself, by his younger colleague and great friend, Dr. J. T. Walker, and by Dr. Walker's father, forms a remarkable feature in provincial medicine. He retained his official connexion with the Infirmary for 36 years. On resigning in 1882, Dr. Paley was appointed physician extraordinary, his post on the staff being then filled by his son, Dr. W. E. Paley. On the death of the latter in 1894, Dr. Paley retired altogether from practice. Dr. Paley's consulting practice covered a very large field—viz., the wide district surrounding the city of Peterborough and lying in the four counties of Northampton, Lincoln, Cambridge, and Huntingdon. He retained his mental and bodily vigour up to the last, having been a man of abstemious habits and devoted to active outdoor exercise—a fisherman, a keen sportsman, and an excellent shot. He was a man of strong religious convictions and an active worker in charitable and social movements. He was a justice of the peace for the Liberty of Peterborough, one of the first aldermen of the borough, and its third mayor, being elected to that office in 1877. Politically a Whig, he followed the leaders of the Liberal Unionist party when they allied themselves with the Conservatives in the "eighties." He was at one time president of the Cambridge and Huntingdon Branch of the British Medical Association. Dr. Paley married Miss Harriett Simpson, by whom he had four sons and two daughters, of whom the daughters alone survive their father.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Witthauer, oberarzt of the Deaconess Hospital in Halle. Dr. Otto Deasch, professor of histology and embryology, and at the time of his death dean of the medical faculty of the University of Gratz. Dr. Georg Kapsammer, physician to the Franz Josef Dispensary and to the Jubilee Hospital of the City of Vienna. His published monograph on the diagnosis of functional diseases of the kidney is held in high repute. Dr. L. Russ, professor of clinical medicine in the University of Jassy. Dr. A. Chavanne, formerly physician to the Lyons Hospital and Deputy for the Rhône. Dr. L. Orfila, professeur agrégé of the

Paris Faculty of Medicine. Dr. Aloysius O. J. Kelly, professor of pathological anatomy in the Woman's Medical College of Pennsylvania in Philadelphia and editor of the *American Journal of the Medical Sciences*. Dr. S. D. Hopkins, professor of the diseases of the nervous system in the Denver and Gross College of Medicine.

# Medical News.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates have passed the primary part of the Fellowship examination:—

E. Connell; C. Cooper, L.R.C.P. & S. Irel.; H. A. S. Deane; T. W. Harley, M.B., B.Ch. Dub., Captain I.M.S.; A. Humphreys; J. C. Khambatta, M.B., B.Ch. Edin.; T. J. R. Maguire; and J. C. Sproule.

The following candidates have passed the final part of the examination and have been admitted Fellows of the College:—

L. L. Cassidy, M.B., B.Ch. Edin., and R. V. Slattery, M.B., B.Ch. R.U.I.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bonn:* Dr. R. Cords has been recognised as *privat-docent* of Ophthalmology.—*Budapest:* Dr. K. Pellyesniczky has been appointed to the chair of Anatomy.—*Catania:* Dr. Giovanni De Gaetani of Palermo has been recognised as *privat-docent* of Medical Pathology.—*Frankfort:* It has for some time past been expected that this important town would be made the seat of a university, and several scientific institutes which would naturally form part of the equipment of a university have already been for some years in active operation. It is now announced that three faculties of the proposed university may be expected to be opened in 1914—viz., those of Medicine, Philosophy, and Law.—*Greifswald:* Dr. Lange, director of the Ear Clinic, who has been invited to accept the chair of Otology at Erlangen, has decided to remain.—*Lemberg:* Dr. J. St. Hornowski has been recognised as *privat-docent* of Pathological Anatomy.—*Prague (German University):* Dr. Alfred Kohn has been promoted to the Ordinary Professorship of Histology; Dr. Gottlieb Salus has been recognised as *privat-docent* of Hygiene.—*Vienna:* The vacancy in the "Third" Medical Clinic and Professorship caused by Dr. von Strümpel's retirement is to be filled by the appointment of Professor Sahli of Berne. The other names mentioned in connexion with this important appointment were Professor Chvostek of Vienna and Professor Ortner of Innsbruck. Dr. Hans Salzer has been recognised as *privat-docent* of Surgery.—*Zürich:* Dr. Otto Busse of Posen has been appointed to the chair of Pathological Anatomy in succession to Dr. M. B. Schmidt, who is going to Marburg.

ROYAL FREE HOSPITAL.—H.R.H. Princess Christian, the President of the hospital, who was accompanied by H.H. Princess Marie Louise, presided at the eighty-third annual court of governors of the Royal Free Hospital, which was held on March 15th. There was a large attendance of governors. In moving the adoption of the report, Mr. Chaplin referred to the lamented death of King Edward, who had been a patron of the hospital. After referring to the work of the hospital during the past year and to the improved financial position, he pointed out that owing to the great pressure made by the sick poor upon the resources of the charity it had been necessary from time to time to make structural alterations and additions to the buildings. At the present time the great need of the hospital was a new out-patient department and for this purpose it was absolutely essential to obtain additional land, all the available space being already fully occupied. Negotiations were in progress and it was hoped that the difficulty of obtaining the necessary land may be overcome in the near future. After referring to the increased cost of maintenance of the hospital, Mr. Chaplin stated that the financial anxiety of the committee had been greatly relieved by the generous legacy of £50,000 bequeathed by the late Mr. H. Silver, who had for nearly 40 years been an active member of the committee and weekly board of the hospital. Reference was made to the cordial relations of the hospital with the London School of Medicine for Women, and in conclusion Mr. Chaplin announced that after many years of service Mr. Conrad Thies, the secretary, was relinquishing his post, but it was hoped that he would continue in the future to give them the benefit of his long experience in hospital affairs by taking an active part in the administration of the hospital. The Bishop of Islington moved the appointment of the committee of management and treasurers. The usual votes of thanks closed the proceedings.

THE ORDER OF THE CROWN OF ITALY.—The King has given to the undermentioned His Majesty's Royal licence and authority to accept and wear the decoration of Officer of the Order of the Crown of Italy which has been conferred upon them by His Majesty the King of Italy, in recognition of valuable services rendered by them at the time of the earthquake at Messina in the year 1908: Michele Asphar, M.D., Sliema; Placido Biasini, M.D., Sliema; Salvatore Borg, M.D., Hamrun; Salvatore Ellul Grech, M.D., Valletta; Edgar Henry Ferro, M.D., Sliema; Paolo Grech, M.D., Birchircara; Francesco Jaccarini, M.D., Senglea; Salvatore Muscat, M.D., Balzan; Emmanuele Said, M.D., Valletta; Surgeon-Captain Robert Samut, King's Own Malta Regiment of Militia, Sliema; Giuseppe Wirth, M.D., Valletta; and Carol Zanghi, M.D., Floriana.

THE TUBERCULIN TREATMENT: BRIGHTON.—The Brighton town council at its meeting on March 16th adopted the recommendation of its sanitary committee with respect to the tuberculin treatment at the Brighton Sanatorium. Dr. Duncan Forbes, the medical officer of health, after a study of the results obtained in the German sanatoriums, introduced tuberculin treatment at Brighton, and the results have been satisfactory. Dr. Forbes says: "In most cases, in order to obtain a cure or lasting benefit, the tuberculin treatment has to be continued for at least one year. The result is that at present patients are discharged who are steadily improving under tuberculin treatment, but long before their cure is obtained. It would therefore seem necessary, in order that the benefits derived from our sanatorium treatment may be increased to a maximum, that discharged patients who have benefited from tuberculin treatment should return at intervals to the sanatorium for further injection with tuberculin." Dr. Forbes advised the extension of the sanatorium treatment, a suggestion readily agreed to. In April last a ward was opened at the sanatorium for cases of tuberculous joints. Six cases of spinal caries, 5 of hip disease, and 2 of knee-joint disease had been admitted, and 12 of these still remained in hospital.

UNIVERSITY OF LONDON: FACULTY OF MEDICINE.—A meeting of the Faculty was held at the University on March 18th. Dr. Norman Moore took the chair and the election of Dean for the remainder of the period 1910–12 was proceeded with. Professor Sidney Harris Cox Martin was proposed by Dr. W. P. Herringham and seconded by Mr. H. J. Waring. The proposition was put by the chairman and carried unanimously. Professor Martin then took the chair. The constitution of the Board of the Faculty was determined as follows: (*a*) The Dean of the Faculty (Professor S. H. C. Martin); (*b*) the secretary of the Faculty (Mr. H. J. Waring); (*c*) the members of the Faculty who are also members of the Senate (at present Sir William Allchin, Dr. H. A. Caley, Professor A. W. Crossley, Professor R. J. Godlee, Sir Alfred P. Gould, Mr. Leonard Hill, Dr. E. G. G. Little, Professor J. M. Thomson, Dr. J. Wade, and Dr. A. D. Waller); (*d*) the chairmen of the following boards of studies: preliminary medical studies (Professor F. Womack), intermediate medical studies (Dr. C. Addison), advanced medical studies (Sir Francis Champneys), dentistry (Sir Alfred P. Gould), hygiene and public health (Dr. H. T. Bulstrode), physiology (Dr. M. S. Pembrey), human anatomy and morphology (Mr. F. G. Parsons); (*e*) representatives nominated by the following boards of studies: preliminary medical studies—two (Professor F. Womack and Mr. J. A. Gardner); intermediate medical studies—two (Professor W. D. Halliburton and Mr. F. G. Parsons); advanced medical studies—four (Mr. Stanley Boyd, Dr. Sidney Phillips, Mr. S. G. Shattock, and Dr. H. Tilley); and (*f*) not more than six other members of the Faculty, to be appointed by the Faculty after nomination in each case by at least two members. The following members were proposed, seconded, and elected: Mr. Raymond Johnson, Mr. H. L. Eason, Dr. R. C. B. Wall, Dr. E. I. Spriggs, Dr. N. H. Alcock, and Dr. Louisa

B. Aldrich-Blake. It was resolved that the Senate be requested to publish the numbers of the successful candidates at the several examinations for medical degrees immediately after each meeting of the examiners. The election of two persons to represent the Faculty in the Senate for the period 1911–15 then took place. The following gentlemen had been proposed and seconded: Dr. W. P. Herringham, Mr. L. E. Hill, and Mr. H. J. Waring. The ballot resulted as follows: Mr. Hill 35 votes, Dr. Herringham 30 votes, and Mr. Waring 28 votes. Mr. Hill and Dr. Herringham were declared to have been elected. The meeting then terminated.

A PERMANENT MEDICAL EXHIBITION.—With the object of giving to medical men an opportunity of viewing the latest productions of pharmaceutical science and art, and incidentally of providing a central meeting place for medical men and their colleagues, Messrs. Burroughs, Wellcome, and Co. have opened a permanent exhibition at 54, Wigmore-street, London, W. A large room on the ground floor is fitted with a series of glass cases in which are displayed classified groups of "tabloid," "soloid," and other medicaments for use in the various departments of medicine and surgery, together with many ingenious compact cases for the pocket, for travelling, and for the consulting-room. Medicine chests, surgical dressings and instruments also receive attention. Vaccines and vaccine therapy are well exhibited in a large case, where are also shown specimens of the suprarenal capsule, thyroid gland, and pituitary body of man and other animals. To the display of diphtheria serum are added illustrations of the mode of preparation and so forth. In addition to the pharmaceutical products of the firm there is an exhibition of photographic chemicals and preparations for staining lantern slides. Various historical exhibits add to the merits of an instructive and entertaining exhibition, which is open from 9 A.M. till 6 P.M. on ordinary weekdays and from 9 A.M. till 1 P.M. on Saturdays. Journals and works of reference are available, and provision is made for medical men to write letters.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—A council meeting of this association was held at 34, Copthall-avenue, E.C., on March 16th, Mr. D. B. Balding presiding. The honorary secretary, Dr. Major Greenwood, and Mr. A. A. Napper reported that they had attended on behalf of the association the last meeting of the Poor-law Conference at Norfolk House, and that their recommendations *re* Poor-law medical reform had been adopted by that Conference with some slight modifications. Dr. Greenwood had also sent a copy of the same to the Local Government Board with a request that it might be laid before the departmental committee now sitting. Several letters were considered by the council from country members complaining of the addition to the work of the district medical officer without any extra remuneration caused by the recent Old Age Pension Acts. In many cases orders were given for attendance on old-age pensioners who in the past had been accustomed to pay a private medical practitioner. Before the passing of the Pension Acts the relatives had been willing to assist the pensioners, but now they held aloof, and the burden fell on the district medical officer. The chairman pointed out that it was illegal to place old-age pensioners on the permanent list of the district medical officer, and that a special order must be granted in each case. The council then considered the need of a closer communication between the executive of the association and the members generally throughout the country through the medium of a small periodical under its control, to be sent to all its members at regular intervals throughout the year.

THE MARYLEBONE HEALTH SOCIETY.—The annual meeting of this society was held in the council chamber of the town-hall, Marylebone, on March 20th, when the Mayor of Marylebone presided. In opening the proceedings the Mayor, after pointing out the splendid work which was done by the society in supplementing the work of the medical officer of health and the public health committee of the council, said he looked forward to the time, which would, he thought, be very short, when Marylebone, following Edinburgh, would reduce the death-rate from tuberculosis by 50 per cent. Dr. Charles Porter, the medical officer of health, in moving the adoption of the report, congratulated the society on the good work which it had done and made a strong appeal for more voluntary workers. He quoted the figures of the infantile death-rate since 1899, and showed that from that year, when the rate per 1000 births registered of deaths under one year of age was 191·5, there had been a steady decline to 98·9 in 1910. Dr. Eric Pritchard, who seconded the adoption of the report, hoped that the time would soon come when mothers would rear their children in a more intelligent manner. He would like to see less of the so-called maternal instinct and more of common-sense. The report was carried unanimously. The Rev. J. A. Beaumont and Miss Broadbent also addressed the meeting. Dr. Halliday Sutherland, in proposing a vote of thanks to the Mayor and council, spoke in terms of praise of the anti-tuberculous dispensary in connexion with the Health Society, remarking that they owed a deep debt of gratitude to Dr. Porter for the work which had been accomplished.

IRISH MEDICAL SCHOOLS AND GRADUATES' ASSOCIATION.—This association celebrated its St. Patrick's festival dinner on March 16th at the Hotel Cecil, Strand, London, when Sir Charles Cameron, the President, occupied the chair. The number of guests present was nearly 300, and included Sir Thomas Barlow, Sir James Dewar, Professor W. H. Thompson, Sir James Crichton-Browne, Mr. Henry Curtis, Dr. H. Macnaughton-Jones, Dr. M. J. Bulger, Mr. G. W. Dawson, Mr. T. Hobbs Crampton, Dr. William Douglas, and Mr. Campbell Boyd. The event of the evening was the presentation to Dr. Samuel Hamilton of the Arnott Memorial Medal. Dr. Hamilton was introduced by Mr. Crampton, who gave details of the great act of heroism performed by Dr. Hamilton at the Newport Dock disaster. Dr. Hamilton descended into a deep trench, the sides of which were caving in, and performed a surgical operation on a poor victim of the disaster who was pinned under some wreckage, finishing the operation as the tide rose in the trench. Dr. Macnaughton-Jones, in proposing the toast of "The Royal Colleges," made an eloquent speech for a grant in aid to the Royal College of Surgeons in Ireland, and Sir Thomas Barlow, in his reply to the toast, assured those present that the English Royal Colleges had every sympathy with such a movement. Dr. J. A. Macdonald, in submitting the toast of "Our Guests," made a graceful allusion to the presence of ladies at the dinner. Sir James Dewar, in replying to this toast, pointed out how pure science was indebted to Ireland. He interspersed his speech with many witty stories. The toast of "The Association" was entrusted to Sir James Crichton-Browne, who commenced by describing the gathering of that night as almost the most brilliant medical assembly he had attended in London. Sir Charles Cameron, in replying to the toast, made a capital after-dinner speech and gave an interesting account of the success and progress of the association. The evening concluded with a vote of thanks to the President, proposed by Professor Thompson.

DONATIONS AND BEQUESTS.—Under the will of the late Mrs. M. H. Christie the following bequests have been made: £4000 to the committee or association formed for the purpose of maintaining the David Lewis Manchester Epileptic Colony for the general purposes of the committee or association; £4000 to the Northern Counties Hospital for Incurables, as an endowment for the provision of five pensions of at least £20; £4000 to the Victoria Dental Hospital, Manchester; £4000 to the Manchester Northern Hospital for Women and Children; £4000 to the Christie Hospital, Manchester; £2000 to the Manchester and Salford Sick Poor and Private Nursing Institute; and £1000 to St. Mary's Hospital, Manchester. The testatrix also left £5000 to the Zenana Bible and Medical Mission for the erection of a hospital in India; £3200 to Epsom College (Royal Medical Foundation), as an endowment for the provision of two pensions of at least £40 each for medical men; and £500 to the Infants' Hospital in Vincent-square, Westminster.—The late Mr. W. Taylor of Eastbourne has by will, subject to the life interest of his wife, left £2000 to the Liverpool Royal Infirmary. £2000 to the Royal Hospital for Incurables, Putney; £2000 to the Hospital for Consumption and Diseases of the Chest, £2000 to the Cancer Hospital, £2000 to the Royal Free Hospital. £2000 to the Home for Confirmed Invalids, Highbury; £2000 to the North London Homes for Aged Christian Blind Men and Women, Hornsey Rise; and £1000 to the Samaritan Free Hospital for Women. He also

left £21,000 upon trust for certain relatives in each case for life, and subject thereto the money will be divided equally between the above-named hospitals. The Worshipful Company of Goldsmiths has sent £1000 to St. Bartholomew's Hospital towards the reduction of the building debt and £1000 to King's College Hospital, being the third donation of the Company towards the Removal Fund.

HAMPSTEAD PUBLIC MEDICAL SERVICE.—The second annual meeting will be held at 4.30 P.M. on Wednesday, March 29th, in the fencing studio of the Hampstead Conservatoire, Swiss Cottage. Anyone interested in the Public Medical Service movement is cordially invited to be present. The honorary secretary is Mr. A. R. Roche, M.R.C.S., &c., 99, Queen's-crescent, Haverstock Hill, N.W.

THE FLORENCE NIGHTINGALE MEMORIAL.—It has been decided by the joint committee chosen towards the end of last year that the memorial to Florence Nightingale shall consist of a statue to be erected in London, and an annuity fund for the relief of trained nurses who are destitute through inability to provide for old age or infirmity. A public meeting, under the presidency of the Lord Mayor, will be held at the Mansion House on March 31st in support of this proposal.

WORTHING CARE SOCIETY.—Proof of the good work that can be accomplished by a Children's Care Society comes from the borough of Worthing. For the ten years ended 1908 the infant mortality for the borough was 116 per 1000 births. In 1909, in only a part of which the society was working, the figure was brought down considerably, while for 1910 the mortality rate was only 66 per 1000. These figures are very encouraging, for they show what can be done when an organised campaign is taken up against the mortality amongst infants. Some time ago Worthing adopted the Notification of Births Act and also appointed a health visitor. It is further claimed for the society that the school attendance has increased from 87 to 92 per cent., thanks to the attention paid to the children in clothing and feeding.

MOSELEY HALL CONVALESCENT HOME FOR CHILDREN, BIRMINGHAM.—The nineteenth annual report stated that 857 children were admitted during the year compared with 976 in 1909. The average stay was 23 days. Of the 857 children admitted 450 were recommended by subscribers, 116 were transferred from the Children's Hospital, 291 from the General, Queen's, and other hospitals, the district nursing societies, dispensaries, &c. The income amounted to £2157, and the expenditure was £2387, leaving a deficiency of £230, compared with £212 in 1909. The average cost per head per week for maintenance was 3*s.* 6·8*d.*, compared with 3*s.* 7*d.* Mr. Tillyard, the organising secretary of the Charity Organisation Society, in proposing the election of officers at the annual meeting, said that the society was taking up the difficult question of following up the medical inspection of schools, and they thus came across a large number of delicate children and those recovering from illness. He pointed out the special need there was for dealing with consumptive children. Scarcely any sanatoriums admitted children, and it was not always desirable to mix children with adults. Moseley Hall was doing the work to a slight extent. If the committee possessed greater resources in the future he would like to suggest the provision of a wing or department for consumptive children. He also referred to the work of the open-air school, and pointed out that it could only be used by children who lived near the tramway serving the district. He asked whether it were possible to make arrangements for children to sleep at the home and attend the school in the day, so that the benefits of the school might be more evenly distributed over the city.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

### *Milk Legislation.*

SEVERAL important local authorities are promoting private Bills this session asking Parliament for powers to control the milk-supply of their respective areas. This fact has been brought to the notice of the President of the Local Government Board. Mr. BURNS has replied that he hopes that it may be possible to deal with the whole subject of milk-supply this session. Local authorities have received similar replies from Mr. BURNS in previous sessions, but his Bill, although introduced, failed to pass.

### *The Rag Flock Bill.*

The Rag Flock Bill, which has been introduced by Mr. BURNS, the President of the Local Government Board, in the House of Commons has been promptly printed. The purpose is "to prohibit the sale and use for the purpose of the manufacture of certain articles, of unclean flock manufactured from rags." There is only one operative clause. It reads as follows:—

It shall not be lawful for any person to sell or have in his possession for sale flock manufactured from rags or to use for the purpose of making any article of upholstery, cushions, or bedding flock manufactured from rags or to have in his possession flock manufactured from rags intended to be used for any such purpose, unless the flock conforms to such standard of cleanliness as may be prescribed by regulations to be made by the Local Government Board, and if any person sells or uses or has in his possession flock in contravention of this Act he shall be liable on summary conviction to a fine not exceeding, in the case of a first offence, *ten pounds*, or in the case of a second or subsequent offence *fifty pounds*.

Where in any proceedings against a person charged with an offence under this Act it is proved that an offence under this Act has been committed but that the person charged with the offence—(*a*) purchased the flock in respect of which the offence was committed from a person resident within the United Kingdom who sold the flock under a warranty that it complied with the prescribed standard of cleanliness; and (*b*) took reasonable steps to ascertain, and did in fact believe in, the accuracy of the statement contained in the warranty; the person so charged shall be entitled upon an information duly laid by him to have the person who gave the warranty brought before the court, and that person may be summarily convicted of the offence, and the person originally charged shall be exempt from any fine, and the person so convicted shall, in the discretion of the court, also be liable to pay any costs incidental to the proceedings.

Where a person is charged with having flock in his possession in contravention of this Act any flock proved in the proceedings to have been found in his possession shall be deemed to be intended for sale or for use in the manufacture of such articles as aforesaid, unless the contrary is proved.

It shall be the duty of a sanitary authority to enforce the provisions of this Act within their district, and for that purpose the medical officer of health, the inspector of nuisances or sanitary inspector, or any other officer whom the sanitary authority may appoint, shall have power, if so authorised by the sanitary authority, to institute and carry on any proceedings which the sanitary authority is authorised to institute and carry on under this Act, and to enter at all reasonable times any premises in which he has reasonable cause to believe that an offence under this Act is being committed, and to examine and take samples for the purposes of analysis of any flock found therein. Provided that where a sample is so taken the occupier may require the officer taking the sample to divide it into two parts and to mark, seal, and deliver to him one part. If any person wilfully obstructs any such officer in the execution of his powers under this section he shall be liable on summary conviction to a fine not exceeding *five pounds*.

The expenses of sanitary authorities under this Act shall be defrayed—(*a*) in the case of the Mayor, Aldermen, and Commons of the City of London in Common Council assembled, out of the general rate; (*b*) in the case of the council of a metropolitan borough, as part of the expenses incurred by the council in the execution of the Public Health (London) Act, 1891; (*c*) in the case of any other sanitary authority namely, the council of a municipal borough or urban or rural district, as part of the general expenses incurred in the execution of the Public Health Acts.

All fines imposed in any proceedings instituted by a sanitary authority in pursuance of their powers and duties under this Act shall be paid to the sanitary authority and carried to the credit of the fund out of which the expenses incurred by the authority under this Act are defrayed.

This Act shall apply to Scotland with the following modifications:—(*a*) The expression "Local Government Board" means the Local Government Board for Scotland; the expression "sanitary authority" means the local authority under the Public Health (Scotland) Act, 1897; and the expression "inspector of nuisances" means sanitary inspector. (*b*) The provision respecting the Rules Publication Act, 1893, shall have effect as if section one of that Act applied to Scotland with the substitution of the *Edinburgh Gazette* for the *London Gazette*. (*c*) The expenses of a local authority under this Act shall be defrayed out of the public health general assessment levied under the Public Health (Scotland) Act, 1897.

This Act shall apply to Ireland with the following modifications: (*a*) The Local Government Board for Ireland shall be substituted for the

Local Government Board; (*b*) the Public Health (Ireland) Acts, 1878 to 1907, shall be substituted for the Public Health Acts; and (*c*) the expression "medical officer of health" shall include a medical superintendent officer of health.

*Health Visitors Bill.*

The purpose of the Health Visitors Bill, which was introduced in the House of Commons on March 15th by Mr. BURNS, is to enable local authorities under the Notification of Births Act, 1907, to appoint health visitors. The Bill is a short one, the text of its principal clause running thus: "1. The local authority for the purposes of the Notification of Births Act, 1907, of any area outside London in which that Act is for the time being in force may appoint suitable women, to be known as health visitors, for the purpose of giving to persons advice as to the proper nurture, care, and management of children under five years of age, including the promotion of cleanliness. 2. The qualifications to be possessed by persons appointed to be health visitors under this section shall be such as the local authority may, after consultation with their medical officer of health, require."

*The Accounts of the General Medical Council.*

The accounts of the General Medical Council and the Branch Councils for the year 1910, and also of the Dental Registration Fund, have been presented to both Houses of Parliament.

## HOUSE OF COMMONS.

### WEDNESDAY, MARCH 15TH.

*Medical Practitioners and Rebates on Motor Spirit Duty.*

Mr. GINNELL asked the Secretary to the Treasury whether he was aware that rebate on motor spirit tax due to medical practitioners under the Finance (1909–1910) Act, 1910, was now paid in respect of the second financial year under that Act, but refused in respect of the first financial year under that Act, though the claims were supported by similar vouchers and proofs of actual payment; and whether he would say what further satisfaction the Commissioners of Customs and Excise required for the first year in addition to the class of documents that had satisfied them for the second. The honourable Member also asked, in view of the fact that the Finance (1909–1910) Act, 1910, entitles a medical practitioner to rebate of tax paid by him on petrol used in the practice of his profession, subject to no condition but proof of payment by him, by what authority did revenue officers withhold the rebate after all the requirements of the statute had been complied with; whether they had power to impose a condition not in the statute; whether, on their failure to collect tax due by other persons, they were entitled to withhold money due by them to the medical practitioner; and whether he would direct all rebate overdue to be paid forthwith.—Mr. HOBHOUSE replied: Under the provisions of the Finance (1909–10) Act a medical practitioner is not entitled to any rebate in respect of the duty on motor spirit used for supplying motive power to a motor-car kept for the purpose of his profession except on proof to the satisfaction of the Commissioners of Customs and Excise that the full duty has, in fact, been paid to the Crown on the spirit so used. The duty is not paid by the medical practitioner himself, nor by the dealer from whom he buys the spirit, but by the importer or manufacturer, and any voucher or certificate of payment of duty given by a dealer to a purchaser must be verified by the Customs and Excise authorities at the source at which the duty has been charged. Where claims for rebate can be so verified they are at once allowed, but the Commissioners of Customs and Excise cannot admit a claim where evidence that the duty has, in fact, been paid is not satisfactory. The practice of the Commissioners in dealing with claims for rebate is the same whether the claims relate to the year 1909–10 or 1910–11.

*Medical Inspection of School Children in the Highlands.*

Mr. WEIR asked the Lord Advocate whether, in view of the recommendations of the secondary education committees in Scotland in conjunction with the scheme for the medical inspection of school children, he would state the nature of the appointments which had been made in each of the Highland crofting counties.—Mr. URE answered: The following appointments have been made under the scheme for the medical inspection of school children:—*Inverness:* The county medical officer of health, Dr. J. Macdonald, has been appointed supervising medical officer, and Dr. Gordon Lang and Mr. Duncan Fletcher, school medical officers for the mainland and insular divisions respectively. Arrangements have also been made for obtaining the services of two nurses where required. *Ross and Cromarty:* The county medical officer of health, Dr. William Bruce, has been appointed supervising medical officer, and Dr. G. G. Middleton and Dr. Donald Murray, school medical officers for the mainland and insular divisions respectively. *Caithness and Sutherland:* The present medical officer of health for the two counties, Dr. G. Dick, is to be appointed joint medical officer of health and school medical officer for Caithness only. It is understood that a similar scheme is under consideration for Sutherland. No appointments have yet been made for Argyll, Orkney and Shetland, but a committee for the former county has been appointed to consider a scheme to come into force in the year 1911–12.

### THURSDAY, MARCH 16TH.

*Dentists and the Motor Spirit Duty.*

Mr. WILKIE asked the Secretary to the Treasury whether, in view of the fact that under the Finance Act of 1909–10 medical men using motor-cars in the discharge of their professional duties were remitted part of the licence duty on petrol, he would state whether this remission was also being deemed applicable to professional dentists using motor-cars in pursuit of their duties; and if not, would he state the reason for such differentiation of treatment?—Mr. HOBHOUSE replied: The relief allowed in respect of motor-car licence duty and motor spirit duty to duly qualified medical practitioners under the Finance (1909–10) Act, 1910, is not applicable to dentists using motor-cars. With regard to the latter part of the question I may point out that the saving of human life and suffering frequently depends upon a medical man possessing an expeditious means of locomotion, and in this respect the case of a dentist is not parallel.

*Small-pox and Vaccination.*

Mr. STAVELEY-HILL asked the President of the Local Government Board whether he would state what was the number of certificates of conscientious objection to vaccination received by the vaccination officers in respect of children whose births were registered during 1906, the number of statutory declarations of conscientious objection to vaccination received by the vaccination officers in respect of children whose births were registered during 1909, and the number, irrespective of the dates of the birth of the children whom they concerned in the years 1907 to 1910, respectively.—Mr. BURNS wrote in reply: The number of certificates of conscientious objection to vaccination received by the vaccination officers in respect of children whose births were registered during 1906 is 53,828. The number of certificates actually received in the years 1907–09 and in the first half of 1910, irrespective of the dates of the birth of the children, were—1907, 57,675; 1908, 162,799; 1909, 190,689; and 1910 (first half), 110,851. The other figures desired by the honourable Member are not yet available.

Mr. STAVELEY-HILL also asked the right honourable gentleman whether the official information in the hands of the Local Government Board showed that the spread of small-pox could be most effectively prevented by vaccination; whether it was the duty of boards of guardians, in whose areas the disease appeared, to take prompt measures, so far as the law allowed, to secure the vaccination or revaccination of all persons exposed to the danger of infection; and what action the Board was taking in view of the present outbreak.—Mr. BURNS furnished the following written reply: Small-pox is a contagious disease, and the most effective means of preventing its spread from the person attacked consists in removing the patient to a place of isolation and surrounding him by protected persons. Statistics relating to vaccination and small-pox obtained by my department are published, and I do not think it is necessary for me to attempt to interpret them. Boards of guardians are empowered by Section 28 of the Vaccination Act, 1867, to pay reasonable expenses incurred by them in taking measures to promote vaccination upon any actual or expected outbreak of small-pox. My officers have visited the districts in London recently affected by small-pox, and have conferred with the officials of the authorities as to the measures to be taken.

Mr. STAVELEY-HILL asked what were the areas in which cases of small-pox had been notified since January, 1911, and what was the number of such cases.—Mr. BURNS (by written answer) replied: The following list shows the counties in which cases of small-pox have been notified since January, 1911, and the number of cases notified in each: Cheshire, 8; Durham, 13; Essex, 2; Glamorgan, 1; Hertfordshire, 1; Lancashire, 26; London, 58; Middlesex, 1; Norfolk, 8; total, 118.

*The Remuneration of Vaccination Officers.*

Mr. STAVELEY-HILL asked the President of the Local Government Board whether he had at any time allowed boards of guardians to pay a fee to their vaccination officers for each statutory declaration of objection to vaccination received by them; and, if so, whether he would give the names of those boards of guardians and state whether their officers were still receiving such fees.—Mr. BURNS (by written answer) replied: The answer is in the negative.

Mr. STAVELEY-HILL also asked the right honourable gentleman whether boards of guardians had been advised that vaccination officers should receive gratuities in respect of the reduction in their income by the operation of the Vaccination Act, 1907; that such gratuities should be calculated on the difference in earnings at the present time and the average earnings during the years 1903–07; and that where the deficiency was likely to be permanent it was desirable to bring the officers' income to the former standard by increasing his fees; whether he had received any complaints and, if so, how many from vaccination officers to the effect that their boards of guardians had declined to follow this course; and what action he had taken in the matter.—Mr. BURNS wrote in reply: The Local Government Board has not taken any general action in regard to loss of income sustained by vaccination officers since the operation of the Vaccination Act, 1907. In many cases boards of guardians have awarded gratuities to their vaccination officers to meet the deficiencies in their incomes. The Board has sanctioned gratuities to meet the loss of income in the past, and has suggested to the guardians that where the deficiency was likely to be permanent the officers' fees should be increased. Many boards of guardians have adopted this suggestion, and the Board has sanctioned increased fees. In some cases vaccination officers have informed the Board of the loss they have sustained and that their guardians have not taken any steps to make up the deficiency. In these cases the Board has written to guardians setting out the average earnings of the vaccination officers in 1903–07 and the earnings since, and has suggested to the guardians that they should award gratuities based on the figures given and increase the officers' fees. Some boards of guardians have adopted the Board's suggestion, but others have declined to take any action. There are about 25 of the latter cases.

### MONDAY, MARCH 20TH.

*The Precedence of the Edinburgh Colleges.*

The Marquis of TULLIBARDINE asked the Lord Advocate under what authority the Secretary for Scotland recently advised or instructed the Lord Lyon King of Arms to refuse to decide a question of precedence between the Royal College of Surgeons and the Royal College of Physicians; and whether the Secretary for Scotland had any jurisdiction, direct or indirect, over the Lyon King of Arms as such.—Mr. URE replied: Questions of precedence are, in the view of the Secretary for Scotland, exclusively for the Sovereign to decide. The jurisdiction of the Lyon King at Arms is exclusively statutory and does not embrace questions of precedence. And the Lyon King, having invited an expression of opinion on the question referred to by the noble lord, received an answer upon the lines above indicated.

*The Supply of Antitoxin.*

Mr. CHANCELLOR asked the President of the Local Government Board whether he had seen the report of the medical officer of health of Islington in which he recommended that inoculation with antitoxin supplied free by the borough council should be commenced the moment diphtheria was suspected, and even before the diagnosis was positive; and what action he proposed to take to prevent local authorities from encouraging and subsidising this practice.—Mr. BURNS

answered: I have seen the report referred to, but I do not propose to interfere with the discretion of the local authorities in acting upon the provisions of the Order recently issued.

Mr. CHANCELLOR also asked the right honourable gentleman, when, seeing that Section 77 of the Public Health (London) Act, 1891, and Section 133 of the Public Health Act, 1875, under which the Local Government Board Order authorising local authorities to supply diphtheria antitoxin free, applied only to cases of a temporary nature, that Order would be withdrawn.—Mr. BURNS said in reply: The fact that the sections under which the Orders authorising the supply of antitoxin have been made refer to the provision of a temporary supply of medicine and medical assistance, does not, in my opinion, necessitate or render desirable the withdrawal of the Orders.

Mr. CHANCELLOR asked whether the right honourable gentleman was aware that, in addition to supplying antitoxin free, the Kensington borough council had offered every medical practitioner within the borough a fee of 5s. for every inoculation; how many other local authorities had adopted the same practice; whether such use of public money as a premium on a form of medical treatment whose value was disputed had been sanctioned by him; and, if so, under what statute.—Mr. BURNS answered: As regards the authority for the Orders issued by the Local Government Board in August last, empowering local authorities to provide diphtheria antitoxin, I may refer the honourable Member to an answer which I gave him in November last. By the terms of the Order the arrangements as to the keeping, distribution, and use of the antitoxin are required to be in accordance with the advice of the medical officer of health. I have no complete information as to the arrangements which have been made in Kensington or elsewhere.

*Vaccination in Stalybridge.*

Mr. SNOWDEN asked the President of the Local Government Board whether the town clerk of Stalybridge had sent a circular to all the medical men in his town offering a free supply of lymph for vaccinations; whether the Local Government Board had supplied him with this lymph; whether, in that case, his attention had been called to the fact that only public vaccinators might legally be supplied with it; whether the Stalybridge corporation was offering free revaccination; and, if so, whether he proposed to take any action in the matter.—Mr. BURNS said, in reply: The Local Government Board has not supplied lymph to the corporation of Stalybridge, but except as to this, I understand the facts are generally as stated in the question. No action on my part seems to be called for.

*Small-pox and Vaccination.*

Mr. SANDYS asked the President of the Local Government Board whether, in the opinion of the medical officers concerned, any of the circumstances or statistics relating to the recent outbreak of small-pox had thrown doubt upon the utility of vaccination as a preventive of that disease; and, if so, what was the nature of these circumstances or statistics.—Mr. BURNS answered: To the best of my knowledge the answer is in the negative.

TUESDAY, MARCH 21ST.

*Medical Inspection of School Children in London.*

Mr. WEDGWOOD asked the President of the Board of Education whether his attention had been called to Sir Victor Horsley's criticisms on the medical inspection of school children as carried out by the London County Council; whether he would inquire into the justification for these criticisms; and, if warranted, whether he could take any steps to induce the London County Council to remedy the existing state of affairs.—Mr. RUNCIMAN replied: I have seen a newspaper report of the recent speech of Sir Victor Horsley on this subject. I have a great respect for this distinguished surgeon's opinion upon subjects on which he speaks with special authority, but I am not sure that the organisation of the medical inspection of school children is one of them. The Board is cognisant of the circumstances of medical inspection in London, and has recently made a communication to the London County Council on that matter.

WEDNESDAY, MARCH 22ND.

*Epidemic at Osborne.*

Major GASTRELL asked the First Lord of the Admiralty how many boys at Osborne College during the present term had suffered from measles, German measles, and pink-eye respectively.—Mr. MCKENNA replied: A hundred and fifteen cadets have had measles, 258 have had German measles, and there have been 60 cases of conjunctivitis, popularly miscalled pink-eye, but many of them were only slight and in association with attacks of measles. In the opinion of the Admiralty the existing medical staff is qualified to detect the first symptoms of disease.

Major GASTRELL further asked whether medical opinion attributed the prevalence of the illness known as pink-eye at Osborne College to the fact that part of the college was built upon the site of the stables formerly attached to Osborne House; and whether steps would be taken to remedy the existing conditions.—Mr. MCKENNA said in reply: Conjunctivitis, the disease sometimes miscalled pink-eye, cannot be said to be prevalent at Osborne. There was an outbreak of it in 1904 and it was considered by the medical authorities to be microbic in character, the organisms being spread by contagion and not air-borne. There have been a few sporadic cases since, and during the present term there have been, as I have just stated, a number of slight cases mostly in association with the current epidemic of measles. I would add that pink-eye, being an equine disease, has no known connexion with the conjunctivitis to which the cadets at Osborne have been subject.

## BOOKS, ETC., RECEIVED.

AKADEMISCHE VERLAGSGESELLSCHAFT, m.b.H., Leipzig.

Das Radium in der Biologie und Medizin. Von E. S. London, Leiter der Pathologischen Abteilung am K.Institut für Experimentelle Medizin zu St. Petersburg. Price M.6.

ARNOLD, EDWARD, London.

A Pocket-book of Treatment. By Ralph Winnington Leftwich, M.D. Price 6s. net.

BAILLIÈRE, J. B., ET FILS, Paris.

Les Arythmies. Par le Docteur H. Vaquez, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôpital Saint-Antoine. Leçons recueillies par le Dr. Ch. Esmein, Chef de Clinique Adjoint à la Faculté de Médecine de Paris. Price, bound, Fr.15.

BAILLIÈRE, TINDALL, AND COX, London.

Aids to Bacteriology. By C. G. Moor, M.A. Cantab., F.I.C., and William Partridge, F.I.C. Second edition. Price, paper 3s. net.; cloth 3s. 6d. net.

Military Sanitation and Hygiene. By E. Blake Knox, B.A., M.D., D.P.H. (Hons.), Captain, R.A.M.C. Price 5s. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

Season and Disease: A Preliminary Study. By Owen H. Peters, M.D. (Reprinted from the "Proceedings of the Royal Society of Medicine," November, 1908.) Price not stated.

BIELEFELDS (J.) VERLAG, Karlstrasse, 6, Freiburg (Baden).

The Truth We Owe to Youth. A Vision of Sex. By Henry Hamill. Price not stated.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

Tumours, Innocent and Malignant, Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S. Fifth Edition. Price 21s. net.

CHURCHILL, J. AND A., London.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S. Fifteenth edition. Price 5s. net.

CLARENDON PRESS, Oxford.

The Works of Aristotle. Translated into English under the Editorship of J. A. Smith, M.A., Fellow of Balliol College, and W. D. Ross, M.A., Fellow of Oriel College. De Partibus Animalium. Translated by William Ogle, M.A., M.D., F.R.C.P., Sometime Fellow of Corpus Christi College, Oxford. Price 5s. net.

DEUTICKE, FRANZ, Leipzig und Wien.

Die Akute Leukämie. Von Dr. Albert Herz, gew. Assistenten der Abteilung. Price M.4.50 or K.5.40.

DULAU AND CO., LIMITED, 37, Soho-square, London, W.

Department of Applied Mathematics, University College, University of London. Drapers' Company Research Memoirs, Biometric Series VI. A Monograph on Albinism in Man. By Karl Pearson, F.R.S., E. Nettleship, F.R.C.S., and C. H. Usher, M.B., B.C. Camb. Text. Part I. With Frontispiece and Facing Plate, Provisional Preface and Pages 1-266. Issued to Subscribers Only. Atlas. Part I. Photographic Plates A-Z and AA-ZZ. Issued to Subscribers Only. Price, Text and Atlas, Part I., to Subscribers to the whole work, 35s. net.

DYBWAD, JACOB, In Kommission bei, Christiania.

Die Massenverhältnisse des Herzens unter Pathologischen Zuständen. Pathologisch-anatomische Untersuchungen. Von Sofus Wideroe. Price not stated.

FISCHER, GUSTAV, Jena.

Sammlung anatomischer und physiologischer Vorträge und Aufsätze. Herausgegeben von Prof. Dr. E. Gaupp und Prof. Dr. W. Trendelenburg. Heft 14. (Zweiter Band, Heft I.) Die Cellular-pathologie und der gegenwärtige Stand der Histologie. Rede gehalten auf der Jahresversammlung der pathologischen Gesellschaft zu St. Petersburg am 22. Oktober-4. November, 1910. Von Privatdozent Dr. G. G. Schlater. Price Pf.80.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

An Introduction to Dermatology. By Norman Walker, M.D., F.R.C.P. Fifth edition. Price 12s. net.

HARPER AND BROTHERS, 45, Albemarle-street, London, W.

The Birth of Worlds and Systems. By Professor A. W. Bickerton. With a Preface by Professor Ernest Rutherford, F.R.S. Price, cloth 2s. 6d. net.; leather 3s. 6d. net.

HODGE, WILLIAM, AND CO., 12, Bank-street, Edinburgh; and 3, Bolt Court, London, E.C.

Notable English Trials Series. The Trial of the Stauntons. Edited by J. B. Atlay, M.A., Barrister-at-Law. Price 5s. net

HIRSCHFELD BROTHERS, LIMITED, 263, High Holborn, London, W.C. (STENHOUSE, ALEXANDER, 40 and 42, University-avenue, Glasgow.)

Hossfeld's Dutch Dialogues. With a Vocabulary, a Chapter on Pronunciation and the Conjugation of the Regular and Irregular Verbs. New Edition, entirely revised and enlarged. By J. M. Schnitzler, Teacher of Languages and Sworn Translator and Interpreter, Rotterdam. Price 1s. 6d.

Hossfeld's German Dialogues. With a Vocabulary, a Chapter on Pronunciation, and the Conjugation of the Regular and Irregular Verbs. New Edition, entirely revised and enlarged. By A. Hauviller. Price 1s. 6d.

HOEBER, PAUL B., 69, East 59th Street, New York City.

Manual of Cystoscopy. By J. Bentley Squier, M.D., Professor of Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital; and Henry G. Bugbee, M.D., Instructor in Genito-Urinary Surgery, New York Post-graduate Medical School and Hospital. Price $3.00 net.

IMPRIMERIE BOUCHY ET CIE., 11, Rue Hélène, Paris.

Association Médicale Internationale contre la Guerre. Actes et Manifestations Diverses (1905-1910). Price not stated.

KARGER, S., Berlin.

Jahrbuch für Kinderheilkunde und physische Erziehung. Unter Redaktion von O. Heubner, Th. Escherisch, A. Czerny. 73, der dritten Folge 23. Band. Heft 2. Ausgegeben am 1. Februar, 1911. Price not stated.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.

The International Scientific Series. Crystals. By A. E. H. Tutton, D.Sc., M.A. (New College, Oxon.), F.R.S. Price 5s.

KING, P. S., AND SON, Orchard House, Westminster, London, S.W.

Reproduction of a Printed Report originally submitted to the Bucks County Council in the year 1892, containing Letters from Miss Florence Nightingale on Health Visiting in Rural Districts. With a Prefatory Note by Sir Lauder Brunton, Bart., F.R.S., M.D. Published for the National League for Physical Education and Improvement, 4, Tavistock-square, W.C. Price 3*d.* net; post free, 4*d.*

County Councils' Association's Proposals for Poor-law Administration after Consideration of Majority and Minority Reports. Containing also Views of Royal Commissioners on the Scheme. Price 1*s.* net.

LEWIS, H. K., London.

Enlargement of the Prostate, its Treatment and Radical Cure. By C. Mansell Moullin, M.D. Oxon., F.R.C.S. Fourth edition. Price 6*s.*

MACMILLAN AND CO., LIMITED, London.

Creative Evolution. By Henri Bergson, Member of the Institute, Professor at the Collège de France. Authorised Translation by Arthur Mitchell, Ph.D. Price 10*s.* net.

MALOINE, A., 25-27, Rue de l'École de Médecine, Paris. LIBRAIRE DE CULTURE HUMAINE, PAUL NYSSENS, ÉDITEUR, 129, Rue Froissard, Bruxelles.

La Base de Toute Réforme. La Régéneration Physique et Mentale de l'Homme par la Réforme Alimentaire. Price Fr.2.

MASSON ET CIE., Paris.

Les Eunuques d'Aujourd'hui et Ceux de Jadis. Par le Dr. Démétrius A. Zambaco Pacha. Price Fr.4.

MASSON ET CIE., Paris. GAUTHIER-VILLARS, Paris.

Encyclopédie Scientifique des Aide-Mémoire. Publiée sous la Direction de M. Léauté, Membre de l'Institut. Les Nouvelles Mycoses: Exascoses (ex-Blastomycoses), Oïdiomycoses, Sporotrichoses, Botrytimycose, Oosporoses, Hémisporose. Par MM. de Beurmann, Médecin de l'Hôpital Saint-Louis, à Paris, et Gougerot, Professeur agrégé à la Faculté de Médecine de Paris. Price, paper, Fr. 2.50; boards, Fr.3.

MEISTER, LUCIUS, AND BRÜNING, LIMITED, 51, St. Mary Axe, London, E.C.

The Tuberculins and their Employment in Diagnosis and Treatment of Tuberculosis. Gratis to Readers of THE LANCET.

METHUEN AND CO., LIMITED, London.

Unsoundness of Mind. By T. S. Clouston, M.D., LL.D., F.R.S.E. Price 7*s.* 6*d.* net.

REBMAN, LIMITED, London.

The Individual and Society, or Psychology and Sociology. By James Mark Baldwin, D.Sc., LL.D., Foreign Correspondent of the Institute of France, Professor in the National University of Mexico. Price 6*s.* 6*d.* net.

SMITH, ELDER, AND CO., 15, Waterloo-place, London, S.W.

Saint Bartholomew's Hospital Reports. Edited by H. Morley Fletcher, M.D., and W. McAdam Eccles, M.S., F.R.C.S. Vol. XLVI. Price 8*s.* 6*d.* net.

SPOTTISWOODE AND CO., LIMITED, New Street-square, London, E.C.

The Medical Register: Printed and Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom, pursuant to an Act passed in the Year XXI. and XXII. Victoriæ, Cap. XC., entitled An Act to Regulate the Qualifications of Practitioners in Medicine and Surgery. 1911. Price 10*s.* 6*d.*

UNIVERSITY PRESS, Cambridge.

Observations upon the Natural History of Epidemic Diarrhœa. By O. H. Peters, M.D., D.P.H., Mansfield. (From *The Journal of Hygiene*, Vol. X., No. 4, December, 1910.) Price not stated.

WAGNER, JOSEPH F., New York.

Marriage and Parenthood. The Catholic Ideal. By the Rev. Thomas J. Gerrard, author of "Cords of Adam," "The Wayfarer's Vision," &c. Price not stated,

WHITAKER'S ALMANACK OFFICE, 12, Warwick-lane, London, E.C.

The Coronation Regalia. An Excursion into a Curious Bypath of Literature. By W. H. Stacpoole, B.A., LL.D., of the Inner Temple, Barrister-at-Law. Price 1*s.* net.

WRIGHT AND POTTER PRINTING CO., State Printers, 18, Post Office-square, Boston.

Forty-first Annual Report of the State Board of Health of Massachusetts. Price not stated.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BADGEROW, GEORGE W., F.R.C.S. Eng., has been appointed Surgeon to the Throat Hospital, Golden-square.

BARFORD, A. M., L.R.C.P. Lond., M.R.C.S., has been appointed County Medical Officer and Medical Inspector of Schools to the Isle of Wight County Council.

BROWN, H. G., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tredegar District of the counties of Monmouth and Glamorgan.

FURBER, E. P., L.R.C.P. Lond., M.R.C.S., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

GLOYNE, S. RODHOUSE, M.D. Leeds, has been appointed Pathologist to the City of London Hospital for Diseases of the Chest.

HEATH, H. LLEWELLYN, D.P.H. Cantab., has been re-elected Medical Officer of Health of the County of East Suffolk.

JONES, E. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the King's Cliffe District of the county of Northampton.

MACEWEN, H. A., M.B., M.S. Glasg., has been appointed a Medical Officer to the Local Government Board.

MARTIN, P. S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician of University College Hospital.

MOFFATT, C. W. P., M.R.C.S., L.R.C.P., D.P.H., has been appointed Medical Superintendent to the Bury and District Joint Hospital Board.

MOORE, F. J., L.R.C.P. & S. Irel., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MORGAN, D. J., M.B., B.C. Cantab., D.P.H., has been appointed Medical Officer and School Medical Officer to the Glamorgan County Council.

MURRAY, MARY D., M.B., B.S. St. And., has been appointed Medical Officer to the Leeds Board of Guardians.

PHILLIPS, MILES H., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Honorary Acting Medical Officer to the Jessop Hospital for Women, Sheffield.

ROBERTS, THOMAS, M.B., M.S. Edin., has been appointed Medical Officer of Health of the Borough of Wrexham.

SWETE-EVANS, W. B., M.D., B.C. Cantab., M.R.C.S., has been appointed Honorary Assistant Medical Officer to the Southport Infirmary.

YEARSLEY, MACLEOD, F.R.C.S. Eng., has been appointed Honorary Consulting Aural Surgeon to the Royal School for Deaf and Dumb Children, Margate.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

AYR COUNTY HOSPITAL.—Resident House Surgeon. Salary £70 per annum, with board and residence.

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Surgeon. Also Resident Medical Officer for six months. Salary at rate of £60 per annum, with board and residence.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £100 per annum, with board, residence, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior Resident House Surgeon. Salary £100 per annum. Also Junior Resident House Surgeon. Salary £80 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £90 per annum, with apartments, board, and attendance.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—Assistant Pathologist. Salary £100 per annum, with board, residence, and laundry.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BUXTON, DEVONSHIRE HOSPITAL.—Pathologist. Salary at rate of £250 per annum.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £160 per annum, with board, lodging, washing, &c.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Resident House Surgeon.

CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, residence, and washing. Also House Physician. Salary £80 per annum, with board, residence, and washing.

DARLINGTON, BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.

DREADNOUGHT HOSPITAL, Greenwich.—Two House Physicians and Two House Surgeons for six months. Salary in each case £50 per annum, with board, residence, and washing.

DUBLIN, ROYAL VICTORIA EYE AND EAR HOSPITAL, Adelaide-road.—House Surgeon. Salary £40 per annum, with board and residence.

EDINBANE, ISLE OF SKYE, GESTO HOSPITAL.—Resident Medical Officer. Salary £200 per annum, with furnished house, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Ten Clinical Assistants.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL (OBSTETRICAL DEPARTMENT).—Two In-door House Surgeons and Two Out-door House Surgeons. Also Out-door House Surgeon to West-end Branch (female).

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION, Gloucester.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

HAMPSTEAD GENERAL HOSPITAL.—House Surgeon for six months. Salary at rate of £70 per annum, with board and residence.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with rooms, board, and washing.

HULL ROYAL INFIRMARY.—Casualty House Surgeon for six months. Salary at rate of £60 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Assistant House Surgeon (female). Salary £40 per annum, with board and laundry.
KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL. 49, Church-street, Kensington, W.—Vacancy on Honorary Medical Staff.
LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.
LLANELLY URBAN DISTRICT.—Medical Officer and Schools Medical Officer. Salary £400 per annum.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.
MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, near Manchester.—Resident Medical Officer, unmarried. Salary £90 per annum.
MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Honorary Surgeon
MANCHESTER SCHOOLS FOR MOTHERS (ANCOATS BRANCH).—Honorary Medical Officer.
MANCHESTER WORKHOUSE HOSPITALS, Withington.—Junior Resident Medical Officer. Salary £100 per annum, with rations, apartments, and attendance.
NEWCASTLE-UPON-TYNE, HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and laundry.
NORTHAMPTON, NORTHAMPTONSHIRE SANATORIUM, Creaton.—Resident Medical Officer. Salary at rate of £200 per annum, with board, apartments, and laundry.
NORWICH, CITY OF.—Assistant Medical Officer of Health. Salary £150 per annum, with rooms, board, and washing.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Resident Medical Officer. Salary £120 per annum, with board, residence, and laundry.
ROCHDALE INFIRMARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.
ROYAL ARMY MEDICAL CORPS.—Twenty Commissions.
ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.
ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Clinical Assistants.
ROYAL NAVAL MEDICAL SERVICE.—Twelve Commissions.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, all found.
ST. MARY'S HOSPITAL, Paddington, W.—Assistant Ophthalmic Surgeon.
ST. THOMAS'S HOSPITAL.—Physician.
SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—House Surgeon, unmarried. Salary £60 per annum, with board and residence.
SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.
SUNDERLAND INFIRMARY.—Two House Surgeons. Salary £80 per annum, with board, residence, and washing.
SWANSEA, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.
THROAT HOSPITAL, Golden-square, W.—Honorary Assistant Surgeon.
TORQUAY, TORBAY HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with residence, board, and washing.
TRANSVAAL MINERS' PHTHISIS SANATORIUM, Springkell, Modderfontein, near Johannesburg.—Medical Superintendent. Salary £1000 per annum, with furnished residence.
WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Surgeon.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—House Surgeon. Salary £100 per annum. Also Junior House Physician. Salary £75 per annum.
WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE. Hammersmith-road, W.—Clinical Assistants. Also Three Non-resident Assistant House Surgeons, each for three months.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry. Also Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry.
WORCESTER GENERAL INFIRMARY.—House Physician. Salary £100 per annum, with board, residence, and washing.
YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

**THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Amble, in the county of Northumberland; and at Bradford, West, in the county of Yorks, West Riding.**

# Births, Marriages, and Deaths.

## BIRTHS.

BRISTOW.—On March 20th, at 102, Harley-street, W., the wife of Walter Rowley Bristow, M.B., B.S. Lond., F.R.C.S., of a daughter.
POTTS.—On March 16th, at Hagley Lodge, Edgbaston, the wife of W. A. Potts, M.D., of a son.
RIDDELL.—On March 16th, at Highgate, Kendal, the wife of David Riddell, M.D., a son.
STUBBS.—On March 7th, at Highfield, Tulse Hill, S.W., the wife of John D. Stubbs, M.B., B.C. Cantab., of a son.

## DEATHS.

PALEY.—On March 13th, at Heathfield Lodge, Ealing, William Paley, M.D., formerly of Peterborough, in his 95th year.

*N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## MEDICAL FOLK-LORE IN NORWAY.

THROUGH a circular in the *Norsk Skoletidende* of March 4th an interesting attempt has been made to enlist the help of the teachers of Norway in collecting materials for an account of medical folk-lore in that country. A list is first given of about 60 ailments, epidemic complaints, internal complaints, diseases of hair, skin, or nails; and opposite the scientific name are to be put the various popular names in the dialects. In a second division any popular remedies drawn from the animal, vegetable, or mineral kingdoms are to be noted, also any peculiar methods of a surgical character used by midwife, dentist, barber, or the like. Particulars are also asked for with regard to alleged cures by superstitious means, such as spells, incantations, amulets, or wells of healing; and the names, or at least the initials, are to be given of herbalists, quacks, "wise women," who in present or in past times have played a part in their respective neighbourhoods. The particulars are to be sent in to two physicians, Dr. F. G. Gade and Dr. Grön of Christiania, who receive a grant from the Nansen Fund for the expenses of the inquiry.

## THE HANDLING OF HOT SUBSTANCES BY ORIENTALS.

*To the Editor of* THE LANCET.

SIR,—The article in THE LANCET of March 18th regarding "An Egyptian Holy Man" casts doubt on the feats of holding a hot iron bar between the teeth and of handling red-hot embers without incurring a lesion of the skin. May I draw your attention to the following fact within my experience?

When living in camp with some of Professor Flinders Petrie's workers from Quft (Qift) it was quite usual to see the cook-boy Ibrahim Abd El Kerim, dipping his hand into boiling oil while frying an omelette. We used to watch him deliberately pass his hand under the omelette, fold it over, and afterwards lift it out on to a dish.

This is a peculiarity of handling hot substances which comes to the European as a surprise, but which to the Arab seems a matter of course.

I am, Sir, yours faithfully,

South Hampstead, March 20th, 1911. LINA ECKENSTEIN.

## THE CHILD EMIGRATION SOCIETY.

THIS society, which was founded in 1909 as a result of a paper read at the Colonial Club, Oxford, by Mr. Kingsley Fairbridge of Rhodesia, a Rhodes scholar, of Exeter College, held its first annual meeting last year, at which definite rules were adopted for the conduct of the society's operations, and an executive committee was elected. The balance sheet showed that £650 had been raised. The basis of its action is the conviction that no permanent solution of any of our great social questions—pauperism, crime, imbecility, sickness, unemployment, &c.—is possible until we are prepared to guarantee a fair start in life to the thousands of underfed and ill-treated children in the land. The effect of existing rescue and training societies is to throw their protégés into an overcrowded labour market to compete with the children of self-supporting workmen on terms disadvantageous to the latter. This would be obviated by following Mr. Fairbridge's suggestion to transfer the training ground of many of these children to the overseas dominions and to fit them to compete in a market where the demand for efficient British labour is always greater than the supply. Mr. Cuthbert W. H. Whalley, Claddagh, Woodstock-road, Oxford, who has received from the society a roving commission as organising secretary, sends us an appeal asking for donations, subscriptions, meetings, voluntary workers, and speakers to coöperate in the work of opening in 1912 such an experimental school, either in Newfoundland, where a free grant of land has been offered by the Government, or wherever else a grant of suitable land can be secured.

## ELECTRO-MEDICAL APPARATUS.

A VERY instructive and complete catalogue of electro-medical apparatus has recently been issued by Messrs. Newton and Co., of 3, Fleet-street, Temple Bar, London. Considerable space is devoted in the introductory chapters to the explanation of the principles and practice of electrical methods. It is an undoubted fact that there are still a good many medical practitioners who have not concerned themselves seriously to give electricity a systematic study or to understand the many terms used in regard to its applications. Information on such points is here given, which should be of distinct assistance to the beginner in such a study. Besides, there are a great number of illustrations of the various apparatus employed in electro-therapeutics made by this firm. We note that amongst other recent introductions the Dessauer "one-flash" X ray apparatus is described. With this apparatus the exposure is not measured by seconds, but consists of one single discharge only. This gives the unquestionable advantage that every organ of the body can be photographed with all movement eliminated.

### THE WARD PIN-CUSHION.

THIS consists of an improved metal case for the reception of safety-pins and a cushion for ordinary pins. The advantages claimed for it are: (1) The safety-pins are enclosed in the case, easy to extract, and free from any encumbrance; (2) the ordinary pins are pressed in a pad of wool which can be removed, destroyed, and replaced by sterilised wool; and (3) the case (with pins) complete can be sterilised by boiling. The case is made in aluminium in the shape of a cross, and will hold one dozen safety-pins from 1 in. to 2½ in. It can be attached to the apron by either safety-pin or chain. The inventor is Mr. J. Hayward, 63, Francis-street West, Hull.

*R. H.*—We do not know the stove in question. The whole subject has been taken by our correspondent into a very technical region. We suggest that he should get "Gas Fires and Chimney Flues," by E. W. Browning, Office of *Journal of Gas Lighting*, and "Model Heating," the catalogue of the Gas Light and Coke Company, Horseferry-road, S.W., where he will find the views held by THE LANCET set out and largely endorsed. We will try to obtain for our correspondent exact answers to his questions.

*D. M. M.*—We are unable to find the reference. We know of no such use of a rubber ball, but there does not seem to be any reason why a rubber ball should not be used in place of the usual boxwood one.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

### A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, and April, 1911:—

March 28th–April 25th (Tunis).—Exhibition of Hygiene.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
,, 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
,, 18th (Berlin).—Tenth Congress of the German Orthopædic Surgery Society.
,, 19th–22nd (Berlin).—German Surgical Congress. (Fortieth Annual Meeting.)
,, 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
,, 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, March 22nd, 1911.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rain fall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Mar. 16 | 29·53 | N. | 0·23 | 73 | 46 | 35 | 37 | 38 | Cloudy |
| ,, 17 | 29·76 | S.W. | ... | 64 | 46 | 35 | 36 | 37 | Cloudy |
| ,, 18 | 29·78 | E. | 0·02 | 64 | 46 | 37 | 40 | 42 | Overcast |
| ,, 19 | 29·85 | E. | 0·01 | 51 | 42 | 39 | 39 | 41 | Overcast |
| ,, 20 | 29·75 | S.E. | ... | 89 | 52 | 40 | 42 | 43 | Fine |
| ,, 21 | 29·74 | E. | 0·01 | 77 | 57 | 40 | 43 | 44 | Raining |
| ,, 22 | 29·89 | S.E. | ... | 91 | 59 | 40 | 42 | 42 | Overcast |

**The following journals, magazines, &c., have been received:—**
Classical Review, Birmingham Medical Review, Bulletin of the Johns Hopkins Hospital, Maryland Medical Journal, American Journal of Obstetrics, Journal of Tropical Medicine and Hygiene, Pacific Medical Journal, Ash's Monthly, South African Medical Record, Century Illustrated Monthly Magazine, Bulletin de l'Association Française pour l'Étude du Cancer, La Revue du Cancer, St. Louis Medical Review, American Journal of Surgery, Sleeping Sickness Bureau Bulletin, Clinique Ophtalmologique, Indian Public Health, Symons's Meteorological Magazine, British Journal of Dental Science, Revista Dental, Archivos Españoles de Neurologia, Psyquiatria y Fisioterapia, Revista Stiintelor Medicale, Malaya Medical Journal, Hospital Assistant, Indian Medical Record, The Therapist, American Journal of Clinical Medicine, Jahrbuch für Kinderheilkunde, Medical Chronicle, Albany Medical Annals, Recueil d'Ophtalmologie, American Medicine, Interstate Medical Journal, Bulletin of the Office International d'Hygiène Publique, Transactions of the Ophthalmological Society of the United Kingdom, Bristol Medico-Chirurgical Journal, Journal of Pathology and Bacteriology.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).**

MONDAY.
ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James): at 8 P.M.
*Paper:*
Mr. H. J. Morris and Professor McWilliam: The Comparative Elasticity and Internal Structure of Cast and Rolled Gold Plate.
*Casual Communication:*
Mr. Howard Mummery: A Short Preliminary Note on the Distribution of the Nerves of the Dental Pulp.

TUESDAY.
MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bt.): at 5.30 P.M.
*Papers:*
Dr. Thomas Lewis: Electro-cardiograms.
Dr. Samuel West: Cases of Suffocative Catarrh in the Adult (Acute Pneumococcal Bronchitis).

**MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.**

MONDAY.—8.30 P.M., Clinical Evening. Cases will be exhibited by Dr. E. Wynter, Dr. Langmead, Mr. W. Trotter, Mr. W. H. Battle, Dr. StClair Thomson, and others. Patients will be in attendance at 8 P.M.

**HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.**

THURSDAY.—8.30 P.M., Mr. C. B. Lockwood: Fractures of the Patella and their Surgical Treatment. (Harveian Lecture.)

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.**

TUESDAY AND THURSDAY.—5 P.M., Dr. J. M. Bruce: Clinical Study of Cardio-vascular Regeneration (Lumleian Lectures).

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.**

MONDAY.—4 P.M., Mr. W. Evans: Clinique (Skin). 5.15 P.M., Lecture:—Mr. A. Lane: Intestinal Stasis.
TUESDAY.—4 P.M., Dr. W. Hunter: Clinique (Medical). 5.15 P.M., Lecture:—Dr. A. F. Tredgold: The Borderland of Insanity.
WEDNESDAY.—4 P.M., Mr. J. T. Walker: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. H. Fisher: Some Cases of Lesions of the Optic Chiasma.
THURSDAY.—4 P.M., Mr. P. J. Freyer: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. H. Tubby: Treatment of Scoliosis in Childhood and Adolescence.
FRIDAY.—4 P.M., Dr. D. McKenzie: Clinique (Ear, Nose, and Throat).

**POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.**

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.**

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic:—10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).]

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

TUESDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Shoulder Joint, Wrist Joint, and Carpus. (Special Post-Graduate Course.)

THURSDAY.—4 P.M., Mr. Fairbank: Appendicitis in Children.

FRIDAY.—5.15 P.M., Demonstration:—Mr. G. E. Waugh: Diseases of Joints—Arthritis of Vertebral Column, Simple, Tubercular, Syphilitic. (Special Post-Graduate Course.)

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Dr. D. McKenzie: Ear.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. F. C. Moore: Treatment of Gastric and Duodenal Ulcer. (Post-Graduate Clinic.)

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

**TUESDAY** (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

**WEDNESDAY** (29th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**THURSDAY** (30th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

**FRIDAY** (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

**SATURDAY** (1st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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